Presentation Type: Oral

Approach to motor neuron disease

Ali Asghar Okhovat, MD

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Motor neuron diseases (MND) consist of a clinical spectrum and are manifested by progressive weakness resulting from the degeneration of motor neurons of the brain, brainstem, and spinal cord. MND is a clinical diagnosis by exclusion of other neurological disorders and supported by findings on electrodiagnostic testing, in the absence of other abnormalities on neuroimaging or serological testing. The spectrum of motor neuron diseases includes a pure lower motor neuron; mixed upper and lower motor neuron; and a pure upper motor neuron variant in addition to regional variants restricted to the arms, legs or bulbar region. Amyotrophic lateral sclerosis (ALS) is a progressive painless mixed upper and lower motor neuron disorder, most commonly sporadic (~85%), which is invariably fatal. Diagnostic approach to MNDs consists of clinical studies, including electrodiagnostic testing, neuroimaging, and laboratory tests, are routinely obtained to find support for the diagnosis and exclude treatable disorders and ALS mimics. upper motor neuron findings can only be determined clinically, although emerging testing may aid in this assessment. Electrodiagnostic testing assesses for the presence of lower motor neuron dysfunction and excludes other neuromuscular disorders include peripheral nerve diseases, such as multifocal motor neuropathy with conduction block.

Presentation Type: Oral

Immunological and inflammatory response in acute stroke patients

Siamak Abdi MD

Damage and repair in any part of body is acompanied by immune system activation. Neuronal damage in acute stroke can result in activation of different parts of immune system. Innate immune system is the first part to resopnd followed by adaptive immune system. Immune system activation can cause more tissue damage by releasing proinflammatory cytokines and activating apoptosis and necrosis pathways. However, immune cells can also release cytokines mediating immune system deactivation and tissue repair. There is an interaction between this dual role of immune system and the final result depends on how proinflammatory and reparatory systems deal with each other. It is intriguing for researchers to manipulate this intertaction and change it in a way to mitigate damage and improve clinical state of acute stroke patients.

Presentation Type: Oral

Potential role of immunomodulation therapeutic strategies in acute ischemic stroke: what is new?

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Abstract

Thromboinflammation implies a novel concept in stroke pathophysiology that has opened up the possibility of immunotherapeutic approaches which could become promising strategies for targeted stroke therapies in the future. Many studies have shown an immune cascade following ischemic stroke or acute traumatic brain injury which leading to more tissue damage and long-term disability. Presence of autoreactive T-cell and elevated levels of autoantibodies within hours to days after stroke, suggests the expansion of naturally occurring autoantibodies and autoreactive T cells and B cells immunity in all stages of stroke. Proposed immunomodulatory therapies targeting pro-inflammatory cytokines, matrix metalloproteinases and leukocyte infiltration to reduce initial brain cell toxicity. To date, different therapeutic strategies including monoclonal antibodies, sphingosine-1-phosphate (S1P) receptors, Beta-Interferons, have been introduced with different results.
Here, we are going to review the most recent studies in this controversial concept, promising a mastermind in acute ischemic stroke treatment in future. Nevertheless, most authors believe that it is too early to judge the novel strategy of immunotherapy in general.

Presentation Type: Oral

Approach to diagnosis and differential diagnosis of chronic polyneuropathies

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Chronic polyneuropathy is a common disorder with heterogenic clinical presentation and many different etiologies. Polyneuropathy has an estimated prevalence of about 2% in the general population. Despite being common, polyneuropathy remains a diagnostic challenge for most clinicians for many reasons, including the large number of potential causes and the fact that a specific cause often cannot be identified even after appropriate testing. The result is often a "one size fits all" strategy from an unnecessarily expensive "shotgun" approach to a "pessimistic" attitude that too rapidly deems a neuropathy as idiopathic. Shotgun approach is expensive as many tests have a low yield. It necessitates many false positive results, and may give a false sense of assurance if all tests are negative. Another approach is to select tests based on clinical features and nerve conduction studies. A great many of etiologies for polyneuropathies exist (maybe higher than 50 etiologies). The principle question is how to formulize our approach to cover all possible etiologies and reduce the rate of false negative approach. To approach for polyneuropathies, we must conduct a systematic approach to reach the precise diagnosis by the minimum laboratory tests required. The main goal of this presentation is to show how to make a systematic approach.

Presentation Type: Oral

Thermal Bed as a stress reduced device

Maryam Salehi[1], Hedayat Sahraei[1*], Zeinab Akhtari[1], Hossein Imani[1], Mahvash Jafari[2],

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Introduction: The molecular, cellular, cognitive and hormonal changes in young male volunteers with high stress level before and after using Thermal Bed System was investigated.

Material and Method: Twenty healthy men (first group: 1 session of 35 minutes bedding and the second group: 4 sessions of 35 minutes bedding) were entered into the study. Participants were selected after recruitment with local advertisement and using DASS21 questioner. Before and after using the bed saliva samples were collected from all the participants for measuring salivary cortisol and α-amylase concentrations and blood samples were collected from all the participants for measuring molecular cellular changes. Cognitive performance was measured using PASAT test.

Result: The results showed that the α-amylase and cortisol levels in saliva of individuals after using the bed (4 sessions) has significantly decreased in comparison with before using the bed ($P<0.05$), and reduced glucocorticoid gene expression, but 1 session treatment did not show significant changes. PASAT test results show that Mental health, Reaction time and Sustained attention increased and Mental fatigue decreased after 4 session's bed sessions.

Discussion: The present study suggested that Thermal Bed System can positively affect the stress and perceptual-cognitive systems.

Key Words: Thermal Bed; Cortisol; Alpha-Amylase; Cognitive Function

Presentation Type: Oral

Stereotactic Surgery in Neurological Disorders

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Stereotactic or stereotaxy is one of the new advances sort of surgery that can help to Neurosurgeons reach accurately to any place of brain with extremely low invasion to normal tissue. Recently with advance of neuro-technology the practical use of this system has been used more especially in the field of neurological disorders. Stereotactic surgery can be used in many fields including of: 1- brain tumour biopsy 2- insertion of ventricular shunt 3- insertion of drain tube in cystic tumour for aspiration and brachytherapy. 4- intra operation guide for navigation of surgery 5- differential diagnosis of recurrence of tumour or radio necrosis 6- Functional surgery such as Neuromodulation (DBS) or ablative procedure thalamotomy Although stereotactic surgery has many advantages but it has some restrictions including: 1- Seizure 2- infection 3- hematoma 4- wounded tumour 5- inaccurate diagnosis because of site of tumour had been taken biopsy 6- age of patient

Presentation Type: Oral

Computer gaming in a mirror: Improvement of neuro-cognitive function

Hamed Aliyari[1,2], Zainab Akhtari[2], Maryam Salehi[2], Elaheh Tekieh[2], Hedayat Sahraei[2*], Masoomeh Kazemi[2], Mohammad Reza Daliri[2,3], Hassan Agaei[2], Behrouz Minaei-Bidgoli[2,4], Ehsan Yazdani[5], Kourosh Zare[6], Mohammad Ali Ansari[6], Mohammad Mehdi Hadipour[2], Nahid *Sarahian[2], Elahe Ataallahi[7], Shahriar Najafizadeh-Sari[8], Mostafa Salehi[2,9], Mohammad Sahraei[2,10], Maryam Sorkhi[11], Asghar Ranjbar Aghdam[12], Milad Vahedi[2]

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Introduction: Computer games can change the personal emotional state, which in fact excite the brain stress system activity. In the present study, the effects of a commercial computer game playing in normal condition and in a mirror were investigated on cognitive function, salivary cortisol level and alpha-amylase, brain hemodynamic, and EEG in normal volunteers was investigated.

Materials and Methods: Thirty-two players (mean age, 20–25 years) participated in the experiments. Each gamer played the computer game on an LED monitor for 120 sec and then played indirectly through a mirror for the next 120 sec. Saliva samples were collected from all participants before and after the game to determine levels of cortisol and α-amylase. EEG evaluated using an EMOTIV Epoc14 channel wireless electroencephalogram (EEG) system and brain homodynamic changes were measured by functional near infrared spectroscopy (fNIRS) system during the game. Moreover, before and after the game completion, Paced Auditory Serial Addition Test (PASAT) software examinations were performed for cognitive functions evaluations.

Results: The results showed that all of the cognitive parameters evaluated by the PASAT software including general mental health, sustained attention, reaction time, and mental fatigue were improved after gaming in the mirror. The EEG beta waves in the frontal and occipital cortexes tend to be coordinated when the participants played in the mirror, reflecting increased activity in these two parts of the brain cortex. The hemodynamic evaluation showed an increase in blood supply to the frontal cortex during the game compared to baseline, which was increased dramatically when the gamers played in the mirror. Salivary cortisol and α-amylase levels of the players decreased after they played in a mirror.

Conclusion: These results indicate that gaming has a beneficial effect on attention and other cognitive functions when the gamers played in the mirror. In addition, these results reflect the efficacy of game playing in the mirror on brain activity and stress system suppression.

Key Words: Computer Games, Cortisol, EEG, fNIRS, Mirror, PASAT Software, Stress

Presentation Type: Oral

The Effectiveness of Specific Frequency Ear Stimulation on Reducing Stress and Anxiety

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Introduction: Millions of people are laid off from work every year and many are in early retirement because of stress side effects. If the economic cost for the patient suffered from stress side effects were added to the above mentioned economical loss, the direct and indirect economic damage of stress would became billion dollar cost to the society.

Aim: The purpose of the present study is production an effective device to relieve stress in the short and long term.

Material and Methods: Brain-wave synchronization as one of the most important brain wave modification techniques was used to manage stress in different individuals with different conditions. Spielberger test and change in EEG was used for determining of the device efficacy.

Results: The findings showed that synchronization of the brainwaves with the auroral sounds in 460 and 720 Hz leads to a significant decrease in anxiety ($P < 0.01$ and $P < 0.001$, respectively). The EEG test results showed that the use of the device only once increases the symmetry of the alpha and theta waves and reduced the anxiety. Furthermore, 720 Hz wave was examined for 2 months showed a decrease in overall stress in the test subjects.

Conclusion: The results indicated that the device was effective for stress and anxiety reduction and because of its safety, it could be used in the clinic for stress modification.

Key Words: Anxiety; Brain Wave Synchronization; Spielberger Test

Presentation Type: Oral

Evaluation of the benefit of ear electro stimulation device for stress reduction

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Introduction: Chronic stress exposure may result in several neural, cardiovascular, immune, and gastrointestinal diseases. Stress management has a beneficial influence for reducing the hazardous of above mentioned diseases by reduction of stress side effects.

Aim: In the present study, the effect of electrical ear stimulation on the stress induced by 30 cm falling was examined in the healthy normal volunteers.

Methods: Sixty volunteers were selected according to their DASS21 number. Participants were divided in four groups (n=10/group). First group received 20 min ear stimulation (500 µA) electrical stimulation before falling. Second group experiencing falling and then received electrical ear stimulation for 20 min. In the third group procedure was identical to the first group but the ear stimulator device was off (Control 1). Forth group was identical to the second group and again the ear stimulator in this group also was off (Control 2). Blood and saliva samples were collected from the participants before and after the test completion for cortisol and alpha-amylase concentration respectively. In addition, participants' cognitive functions were evaluated using the Paced Auditory Serial Addition Test (PASAT) software both before and after the test completion.

Results: Our data indicated that plasma cortisol and salivary alpha-amylase levels were increased in the control groups. PASAT data also revealed a comprehensive decrease in the total correct response, sustained attention, and reaction time in the control groups. However, mental fatigue was increased in these groups.

Conclusion: it is clear that electrical ear stimulation can reduce the stress side effects in the participants. This device was useful for prevention of brain stress systems activity during stressful events, which may prevent from the diseases related to stress as well.

Key Words: Alpha-Amylase; Cortisol; Electrical Ear Stimulation; Falling Stress; PASAT Software

Presentation Type: Oral

The Sexuality and the cognitive processes in the Deaf girl

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Most of information is acquired by hearing and enter the process of knowledge of individuals; this explains why deaf adolescent are deprived. Moreover, this hearing defect can add other problems for them such as having dangerous sex, unwanted pregnancy, sexual diseases or AIDS. Studying the difference between deaf and hearing teenagers in their sexual lives help us to understand their sexuality related problems and needs (Anat, Yehudit, 2011).

We used methods of qualitative and quantitative study. The data were obtained from semi-structured interviews as well as questionnaires undertaken with the deaf and hearing adolescents aged 16 and 20 years who were selected in France and Iran.

The results showed that 'there is a significant difference between young deaf and hearing girls in "sexual information" ($p = 0.01$), "cognitive processes" ($p = 0.01$); and "safe behavior" ($p = 0.05$). We note that there is a significant difference between the deaf young Iranian girls and young French deaf girls on "Sex education needs" ($p = 0.01$), "cognitive processes" ($p = 0.05$), "well-being" ($p = 0.05$) and "safe behavior" ($p = 0.05$). However, no significant difference is found between the Iranian and French deaf in "sexual information" and "risky behavior". We also find that there is a significant difference between young girls deaf FSE[1] and DFSE[2] only in "sexual information" ($p = 0.05$).

Although the hearing girls have richer sexual information than young deaf girls; they are unable to use their sexual information in their sexual lives. The result shows that the deaf need specific sex educations and the existing sex education it is not effective for the Deaf. Despite the existence of formal sex education in France and its lack in Iran, we see that both deaf groups have the same sexual knowledge and have the same risk sexual behavior.

Keywords:

Deafness, sexuality, adolescents, sexual health, sex education, disability

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[1] . following sex education

[2] . do not following sex education

Presentation Type: Oral

NIDCAP Care Model in NICU: Moving Traditional Newborn Intensive Care Delivery into a Collaborative, Relationship Based Neurodevelopmental Framework

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Introduction and Aim: Premature birth places the brain at significant risk for adverse outcome. This paper aimed to introduce NIDCAP as comprehensive NICU care model that deliver care from a neurodevelopmental perspective, and effects it on the outcome for children born preterm.

Methods: This article is prepared based on literature review of literature.

Results and Content: Results of literature review based on Als's synactive theory showed that preterm infants are fetuses, who develop in extra-uterine settings at a time when their brains are growing more rapidly than at any other time throughout their life span. The Newborn Individualized Developmental Care and Assessment Program (NIDCAP) is an individualized developmental approach to support and care based on reading each preterm infant's behavioral cues, and on formulating of a care plan, which enhances and builds upon the infant's strengths, and supports the infant in areas of sensitivity and vulnerability (Als and McAnulty 2011& NIDCAP Program Guide, 2018). It is individualized and uses a relationship-based, family-integrated approach that yields measurable outcomes. (NFI Mission Statement, 2017). Individualized developmental care in the Newborn Intensive Care Unit (NICU) originated in the 1980s by H. Als. NIDCAP fundamentally changes traditional care from task-orientation to relationships. The infant's behavioral communications form the basis for individualized developmental environment and care planning for infant and family. This means all medical and nursing interventions are timed and adjusted to the sensitivity of each infant. The approach simultaneously provides support for the parents and key members of the care team. The NIDCAP reduces neurodevelopmental NICU sequelae, which was demonstrated in randomized controlled trials.

NIDCAP in Iran started when 1st International NIDCAP workshop held in Isfahn University of Medical Sciences with collaboration of Nursing and Midwifery Care Research Center. Dr. Hasanpour, PhD in Nursing, introduced NIDCAP Model to the head of Iran neonatal health office and UNICEF in 2013, and then she linked Dr. Als, the founder of the NIDCAP Federation International (NFI), to them. She also scheduled and directed as scientific and international coordinator of first international workshop with title "NIDCAP, Palliative and Spiritual care in NICU" for National Trainers in IUMS for 40 specialists in different fields, by collaboration and support of National Neonatal Health Office, UNICEF and NFI under supervision and teaching of two international Master and Senior trainers of NIDCAP, Heidelise Als, Harvard Medical School and Dr. Nikk Conneman, Netherlands. Als and Conneman from 2013 to 2016 trained 16 International Certified NIDCAP Professionals specialists in 4 National NIDCAP allocated centers in Tehran, Shiraz and Tabriz, by support of Neonatal Health Office and UNICEF.

Discussion & Conclusion: NIDCAP is a comprehensive NICU care model that deliver care from a neurodevelopmental perspective, and effects on the outcome for children born preterm. The NIDCAP training program focuses on the education and training of multidisciplinary developmental specialist teams in NICUs. According on findings, NIDCAP comprehensive model of care in NICU need system change and shift from traditional and task-oriented to relationship-oriented approach.

Keywords: NIDCAP, Developmental Care, Neurodevelopment, Preterm Infant, Prematurity

Presentation Type: Oral

Near-death experience and non-physical consciousness

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Abstract:

In philosophy and theology, "near-death experiences" are mainly used as a posteriori argument to prove the posthumous world. But such a interpretation does not set to the origin of the experience. At this case, we attempted to study near-death experience (NDE) through the problem of consciousness, which is very important to philosophy of mind. At this point of view, consciousness is non-physical, and will not have problems such as "the hard problem of consciousness", that neurophilosophy had. If successful, the problem of consciousness will go around the possible explanations, and NDE will no longer be an unexplainable concept, too.

Keywords:

Near-death experience (NDE), philosophy of mind, problem of consciousness, neurophilosophy, the hard problem of consciousness.

Presentation Type: Oral

Neurocognitive management in patients with TBI

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The severity of traumatic brain injury (TBI) occurs on a broad spectrum, from very mild injury to severe, life-threatening injuries. The most common areas of neuropsychological difficulty for individuals with mild TBI involve attention, speed of processing, learning, and executive functions.

Neurocognitive rehabilitation, a clinical area including interdisciplinary skills aimed at recovery as well as compensation of cognitive functions is much more important for these people with TBI.

It is important to understand that patients with TBI are susceptible to emotional vulnerabilities. Personality factors can interact with the deficits, the post-injury circumstances and experiences, and the treatment.

Successful cognitive rehabilitation programs are those whose aim is both recovery and compensation based on an integrated and interdisciplinary approach. Roadmaps should then be developed in each case that is named "Training strategies outside the outpatient clinic which is called community based rehabilitation."

Key words: Neurocognition, rehabilitation and traumatic brain injury

Presentation Type: Oral

Cognitive foot prints of trauma on the brain

Dr. Mostafa Almasi-Dooghaee

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Traumatic brain injury (TBI) is among commonest causes of disability and dependency of young adults worldwide. These patients suffer different types of neuropsychiatry symptoms including cognitive decline, mood disorders, irritability and change in appetite and sleep which affect their quality of life significantly.

Cognitive dysfunction is an important causes of dependency in patients with TBI. The most common types of cognitive dysfunction in TBI are memory impairment, attention deficit and executive dysfunctions. It can be explained by the common involvement of fontal and temporal lobes after traumatic brain injuries. Furthermore, trauma may lead to global changes in the brain which can affect complex cognitive functions.

In this session, we want to review the cognitive effects of the TBI and also discuss about the cognitive functions of some real TBI patients.

Presentation Type: Oral

Epilepsy Surgery

Behnam Safarpour Lima
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Epilepsy is the second most common cause of mental health disability worldwide, particularly among young adults, and accounts for a significant burden of illness. Approximately 30% to 35% of patients with seizures have drug-resistant epilepsy, defined as failure of two antiepileptic medications given at appropriate doses. Brain resection for medically refractory epilepsy benefits patients by reducing or eliminating their seizure activity, but it is underutilized.

Mesial temporal lobe epilepsy is the prototypical surgically remediable epilepsy syndrome. Others include discrete neocortical lesions such as focal cortical dysplasias and diffuse lesions limited to one hemisphere. Excellent outcomes can also be achieved in patients with multiple lesions, for example, tuberous sclerosis when one tuber is the source of seizures. The best prognostic factor for a good outcome is a discrete structural lesion on MRI, in an area that can be safely removed, which conforms to the location of ictal EEG changes and is consistent with seizure semiology. Conversely, the occurrence of generalized tonic–clonic seizures, a normal MRI, extratemporal onset, psychiatric comorbidity, and learning disability reduce the chances.

Presurgical evaluation aims to localize the epileptogenic zone (EZ) that must be removed to give seizure freedom through the integration of seizure semiology, EEG, neuropsychological evaluation, and multimodal imaging consist of fMRI, SPECT, PET, DTI, and volumetric MRI.

Some resections may be standardized when the EZ is within recognized boundaries, Palliative procedures include disconnection, such as corpus callosotomy, for disabling drop attacks. These may reduce seizure frequency and severity, but very rarely bring seizure freedom.

Presentation Type: Oral

How trauma adversely affects our decision making?

Fatemeh Sadat Mirfazeli

Assistant professor of psychiatry, Iran University of Medical Sciences

Traumatic brain injury can lead to a variety of cognitive dysfunctions from memory to decision making impairment. The neural underpinning of decision making impairment following trauma and the pattern of the change in the decision making depends on several factors including neuroanatomy of the injury, severity of the trauma, age of the injury, and comorbid impairments in other cognitive processes. Deficits in social decision making, altruistic judgment and moral decision making (both intentional and unintentional) are all seen in traumatic brain injury. In this part of the panel we will talk more about the impact of trauma on different aspects of decision making.

Presentation Type: Oral

Psychopharmacological treatments for post-TBI neuropsychiatric impairment

Atefeh Ghanbari Jolfaei

Associate professor of psychiatry, Iran University of Medical Sciences

The pathophysiology of traumatic brain injury (TBI) can be variable. The spectrum of TBI includes concussion, mild, moderate or severe TBI, and disorders of consciousness. Furthermore, the neuropsychological consequences of TBI are also miscellaneous.

Patients after a TBI may develop psychiatric symptoms such as anxiety, apathy depression, mania, agitation, irritability, disinhibition, and psychosis. In addition, they may suffer from impaired cognitive domains like as memory, attention, processing speed, language, constructional abilities and executive functioning. These neuropsychiatric sequels of TBI are very important in clinic and can result in persistent disability and malfunction. Psychopharmacological treatment strategies for the mentioned sequels of TBI in the chronic phase are also heterogeneous. In this speech I try to review and evaluate the many proposed psychopharmacological options for TBI-related neuropsychiatric deficits.

Presentation Type: Oral

Convulsive Status Epilepticus Treatment

Dr. Soheila Rezakhani, MD

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Abstract

Status epilepticus was defined as continuous or repeated seizure for >5 minutes without recovery of consciousness. In adults with convulsive status epilepticus, intramuscular midazolam, intravenous lorazepam, intravenous diazepam and intravenous phenobarbital are established as efficacious as initial therapy (Level A). Intramuscular midazolam has superior effectiveness compared to intravenous lorazepam in adults with convulsive status epilepticus without established intravenous access (Level A). In children, intravenous lorazepam and intravenous diazepam are established as efficacious at stopping seizures lasting at least 5 minutes (Level A) while rectal diazepam, intramuscular midazolam, intranasal midazolam, and buccal midazolam are probably effective (Level B). No significant difference in effectiveness has been demonstrated between intravenous lorazepam and intravenous diazepam in adults or children with convulsive status epilepticus (Level A). When both are available, fosphenytoin is preferred over phenytoin based on tolerability but phenytoin is an acceptable alternative (Level A). In adults, compared to the first therapy, the second therapy is less effective while the third therapy is substantially less effective (Level A). In children, the second therapy appears less effective and there are no data about third therapy efficacy (Level C). Despite the paucity of well-designed randomized controlled trials, practical conclusions and an integrated treatment algorithm for the treatment of convulsive status epilepticus across the age spectrum (infants through adults) can be constructed. Multicenter, multinational efforts are needed to design, conduct and analyze additional randomized controlled trials that can answer the many outstanding clinically relevant questions identified in this guideline.

Presentation Type: Oral

Convulsive status epilepticus: diagnosis and etiology

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Abstract: Status epilepticus is a condition resulting either from the failure of the mechanisms responsible for seizure termination or from the initiation of mechanisms, which lead to abnormally, prolonged seizures (after time point t_1). It is a condition, which can have long-term consequences (after time point t_2), including neuronal death, neuronal injury, and alteration of neuronal networks, depending on the type and duration of seizures. This definition is conceptual, with two operational dimensions: the first is the length of the seizure and the time point (t_1) beyond which the seizure should be regarded as "continuous seizure activity." The second time point (t_2) is the time of ongoing seizure activity after which there is a risk of long-term consequences. In the case of convulsive (tonic–clonic) SE, both time points (t_1 at 5 min and t_2 at 30 min) are based on animal experiments and clinical research. SE can represent an exacerbation of a preexisting seizure disorder or the initial manifestation of a seizure disorder (epilepsy), or it can represent an insult other than a seizure disorder.

Presentation Type: Oral

Treatment of Refractory Status Epilepticus

Mohammad Sayadnasiri, Neurologist and Epilepsy fellowship

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When status epilepticus continues despite treatment with benzodiazepines and one antiepileptic drug, this condition considered as "refractory" and associated with high risk of permanent morbidity and even mortality; so, refractory status epilepticus (RSE) should be treated promptly. Early diagnosis and initiation of aggressive treatment leads to a better response and may improve outcomes; although aggressiveness of treatment of RSE should be tailored to the clinical situation. Generalized convulsive RSE should be treated aggressively to prevent major systemic and neurological injury with ongoing seizures. Conversely, non-convulsive RSE without significant impairment of consciousness can usually be treated more conservatively. Although well-defined studies are lacking, early induction of pharmacological coma under continuous EEG monitoring is recommenced in generalized convulsive RSE. Intravenous midazolam, propofol or barbiturates are most commonly used drugs. In unresponsive cases, other anesthetics, antiepileptic or immunomodulatory agents and non-pharmacological measures such hypothermia have been tried with mixed results. Well-designed multicenter prospective studies are needed to assess and introduce best practice guideline for RSE.

Oral & Poster Presentations

8th Basic and Clinical Neuroscience Congress
December 18-20, 2019   Razi Hall, Tehran, Iran

Iran University
of Medical Sciences

Iranian Neuroscience
Society

Presentation Type: Oral

Refractory epilepsy: diagnosis and etiology

Dr Mahyar Noorbakhsh

Abstract:

Epilepsy is a chronic condition, and in about one_thirth patients with epilepsy, drug resistant epilepsy will be happen eventually. Drug resistant epilepsy is a chronic and life treating condition which can lead to dangerous complications such as SUDEP. Drug resistant epilepsy (DRE) is defined as the failure of adequate trials of two tolerated, appropriately chosen anti-epileptic drugs (AED), whether as monotherapies or in combinations, to achieve sustained seizure freedom. According to ILAE, the duration definition for seizure freedom period could be either three times the period interseizure interval or one year, whichever is longer. The development of the proposed consensus definition was driven by the growing need among medical practitioners and clinical researchers to adopt a common language in recognizing drug resistant epilepsy in the face of rapidly expanding therapeutic options.

It is clear that the mechanism(s) of DREs are most likely multifactorial, involving environmental, genetic, as well as disease and drug-related factors. During past years, several hypotheses have been proposed for DREs such as (1) pharmacokinetic hypothesis, (2) the neural network hypothesis, (3) the intrinsic severity hypothesis, (4) the gene variant hypothesis, (5) the target hypothesis, and finally the (6) transporter hypothesis. Each of these mechanisms has its own supporting findings, but none of them can fully explain the underlying mechanism for DREs. The aim of this review is defining DRE and discuss underlying mechanisms and etiologies.

Presentation Type: Oral

Diagnosis of nonconvulsive status epilepticus

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Non-convulsive status epilepticus (NCSE) is a neurologic emergency that affects a wide spectrum of patients. The diversity of clinical presentation and unconsciousness of patients due to primary insult, especially in intensive care units, make NCSE impossible to be diagnosed without using electroencephalography (EEG). There is no universally accepted definition of nonconvulsive status epilepticus, and there is no consensus on how to treat it. Not surprisingly, nonconvulsive status epilepticus is often a challenging diagnosis to make. EEG, although critical to the evaluation of nonconvulsive status epilepticus, can sometimes be equivocal. The American Clinical Neurophysiology Society (ACNS) had published proposals for a Standardized Critical Care EEG Terminology], which are now widely used and have a high interrater agreement. A consensus panel at the 4th London Innsbruck Colloquium on status epilepticus and acute seizures held in Salzburg (2013) proposed working criteria for the EEG diagnosis of NCSE (Salzburg Consensus Criteria for Non-Convulsive Status Epilepticus, SCNC). Once the diagnosis of nonconvulsive status epilepticus is made, there is often disagreement on how aggressively to treat it. Human data on the degree of injury associated with nonconvulsive status epilepticus can be difficult to interpret because the etiology of nonconvulsive status epilepticus often confounds the outcome data.

Presentation Type: Oral

Investigation of the protective and therapeutic effects of vinpocetine - a PDE1 inhibitor, on impaired memory and synaptic plasticity of hippocampal dentate gyrus in the β-amyloid induced model of Alzheimer's disease in rats

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Introduction: Alzheimer's disease (AD) as the most prevalent figure of dementia, is considered as a neurodegenerative disease leading to the impairment of cognitive function and memory. In this study, we have investigated the therapeutic and preserving effects of vinpocetine (a phosphodiesterase 1 inhibitor) on the animal model of AD induced by intracerebroventricular (ICV) injection of beta-amyloid (Aβ) with using of behavioral and electrophysiological methods.in rats.

Material and method: Sixty male adult Wistar rats were randomly divided into 6 groups (n = 10 rats/group): 1- control, 2- Sham, 3- Aβ, 4- Pre-treatment (Vin + Aβ): vinpocetine administration ((4 mg/kg) by gavage) for 30 days, then followed by Aβ ICV injection, 5- Treatment (Aβ + Vin): Aβ ICV injection, then treating by vinpocetine for 30 days, 6- Pre-treatment + treatment (Vin + Aβ + Vin): vinpocetine administration for 30 days before and 30 days after induction of AD. Finally, behavioral and electrophysiological studies were examined respectively and oxidative and antioxidant compounds were measured.

Results: The results demonstrated that Aβ significantly enhanced escape latency and the distance traveled in the Morris water maze (MWM), decreased step-through latency and increased time spent in the dark compartment in PAL. Vinpocetine ameliorated the Aβ infused memory failure in both MWM and passive avoidance learning (PAL) tests. In addition, administration of vinpocetine in the Aβ rats increased the discrimination index of the novel object recognition (NOR) test. Also, vinpocetine in all three forms of pretreatment, treatment and pretreatment + treatment improved LTP in granular dentate gyrus by increasing the EPSP slope and PS amplitude compared to the Aβ group. It also significantly diminished the nitric oxide and malondialdehyde (MDA) levels and restored the reduced glutathione (GSH) levels.

Conclusion: According to the results, it can be suggested that vinpocetine could improve the learning and memory impairment and synaptic plasticity following Aβ induction base on the some vinpocetine properties including antioxidant effects and indicate that vinpocetine administration can lead to an amelioration of cognitive dysfunction in AD.

Keywords: Alzheimer's disease, Beta-amyloid (Aβ), Vinpocetine, Phosphodiesterase1 inhibitor, Memory and learning, Oxidative stress

Count: 1
Abstract ID: 228
subject: Neuropsychiatry and Psychology: Disorders of Neurobehavior
Presentation Type: Poster

The relationship between food price and ADHD in children: a case-control study

Submission Author: Khadijeh abbasi mobarakeh

Khadijeh abbasi mobarakeh[1]

1. Nutritionist

Background and Aim : Attention-deficit/hyperactivity disorder (ADHD) is one of the most prevalent neuropsychiatric disease in children. It is reported that diet quality can affect ADHD status. Although food price has a role in food choices and consequently higher risk of diseases, to date, no studies evaluated the relationship between food prices and risk of ADHD. Therefore, the aim of this study was to assess the association between food price and ADHD in children.

Methods : A case-control study was conducted in 2017 in Isfahan, Iran. Based on DSM-V criteria, a total of 200 children aged 4 to 12 years with ADHD (case group) and 300 age and sex matched children without ADHD were participated in this study. Weight and height were measured using standard protocol. A validated food frequency questionnaire (FFQ) contained 168 items was used to assess dietary intake. A self-reported questionnaire including questions about home status, foreign travel, having a car, employment of family head, family size and education level of family head was also used to assess the socioeconomic status (SES).

Results : Diet cost per 1000 kcal was lower in the case group compared with the control group (60843.48±6987.83 vs. 67828.33±8989.48 Rials, $p<0.01$). In the crude model, lower risk of ADHD was observed in higher diet cost per 1000 kcal (OR=0.06; 95% CI: 0.03, 0.13; $p<0.001$). These findings remained significant after adjustment for potential confounders.

Conclusion : an increase in price foods can effect on substitution from healthy food to unhealthy food and have a serious negative effect, especially among the ADHD group.

Keywords : ADHD , f00d price

Count: 2
Abstract ID: 227
subject: Neuropsychiatry and Psychology: Disorders of Neurobehavior
Presentation Type: Poster

The comparison of dietary intakes of antioxidants in children with ADHD and healthy control; a case-control study

Submission Author: Khadijeh abbasi mobarakeh

Khadijeh abbasi mobarakeh[1]

1. Nutritionist

Background and Aim : Recent studies have identified ADHD as an inflammatory condition with immunological and oxidative responses. In addition to inflammatory and i mmunologic factors, researchers suggested that oxidative metabolism may be involved in the development of ADHD. Some cross-sectional studies have found that oxidative balance is impaired in patients with ADHD. The relationship between nutrients (macronutrients and micronutrients) and the immune system has always been relevant; some nutrients are known as immune system regulators and others as pro-inflammatory or anti-inflammatory agents. Few studies have been carried out on the role of food antioxidants in ADHD. The plasma levels of micronutrients such as zinc and copper, which play an essential role in the antioxidant defense mechanism, are lower in ADHD children than in healthy people Therefore, it is necessary to examine these factors in the patients.

Methods : This study was a retrospective case-control study with 200 ADHD children and 300 healthy children in control group aged 4 to 12 years. The demographic questionnaire, FFQ, and Baecke physical activity questionnaire were used. Dietary intakes of antioxidant including of zinc, selenium, vitamin E, vitamin C and beta-carotene obtain by NUTRITIONIST 4 software from Food Frequencies Questionnaire.

Results : There was no significant difference between the two groups as regards age, sex, weight, height, body mass index (BMI). In the case group, the mean the physical activity score (P=0.04) was higher than they were in the control group (P=0.001). Mean ± SD all of antioxidants contents in healthy group were higher than children with ADHD but for zinc and vitamin E were significantly. (P= 0.023 and P = 001 respectively). Other variables were not significant predictors.

Conclusion : The present study showed that the dietary intakes of antioxidants in the healthy group were higher than the ADHD children. Based on such evidence, researchers have suggested that oxidative stress might be important in the pathophysiology of ADHD. The findings of some studies showed that elevated oxidative stress increases the release of dopamine, a crucial neurotransmitter in ADHD, by increasing in membrane permeability to calcium ions. Our study shown that dietary intakes of zinc and vitamin E in children with ADHD lower than healthy children significantly. Zinc may plays a pivotal role in the cell growth and cognitive evolution of children and its levels are high in sections of the brain responsible for structural and functional duties. In addition, vitamin E, which has antioxidant effects by reducing lipid peroxidation that may has beneficial effects on ADHD patients.

Keywords : Key-words: Antioxidants, Inflammation, ADHD, Child

Count: 3
Abstract ID: 229
subject: Neuropsychiatry and Psychology: Cognitive Disorders
Presentation Type: Poster

Dietary Patterns and Attention Deficit Hyperactivity Disorder among Iranian Children

Submission Author: Khadijeh abbasi mobarakeh

Khadijeh abbasi mobarakeh[1]

1. Nutritionist

Background and Aim : Associations between nutritional/dietary factors and mental disorders have been suggested. This study was conducted to assess the relation of major dietary patterns determined by factor analysis with attention-deficit/hyperactivity disorder (ADHD) in a group of Iranian pre- and school-aged children.

Methods : This case-control study was conducted on 500 pre- and school-aged children (4-12 years old) matched by age and sex, in Isfahan, Iran. Dietary intake was identified by a 168-item questionnaire, and major dietary patterns were identified by factor analysis. The multivariable logistic regression is used for the association of dietary patterns with the diagnosis of ADHD. ADHD diagnosis was carried out by the criteria of the Diagnostic and Statistical Manual of Mental Disorders, Fifth Edition.

Results : Two major dietary patterns were identified: healthy and Western. The healthy dietary pattern was rich in fruits, vegetables, vegetable oils, whole grains, legumes, and dairy products. The Western pattern was rich in processed meat, red meat, pizza, eggs, snacks, animal fat, hydrogenated fat and salt. After controlling for potential confounders, children in the top quintile of the Western dietary pattern score had greater odds having ADHD, compared with those in the lowest quintile (OR: 3.45, 95% CI: 1.17-18.3, Ptrend=0.03). The healthy pattern was inversely associated with ADHD (OR: 0.46, 95% CI: 0.38-0. 91, Ptrend=0.01).

Conclusion : A significant independent association was found between the Western dietary pattern and the odds of ADHD. The healthy dietary pattern was associated with lower odds of having ADHD. Prospective studies are needed to confirm these findings.

Keywords : Dietary patterns, Attention-deficit/hyperactivity disorder, School-aged children, Iranian

Count: 4
Abstract ID: 495
subject: Cognition: Other
Presentation Type: Poster

Evaluation of psychological well-being and autonomic nervous system in people with symptoms of social anxiety and normal people

Submission Author: Mohammad karbalaei hoseini

Mohammad karbalaei hoseini[1], sedighe nakhaee[2]

1. Postgraduate student
2. Postgraduate student

Background and Aim : Social anxiety is a disorder that severely impairs and disrupts one's performance in the social field. Therefore, the present study aimed to evaluate the psychological well-being and autonomic nervous system in normal people and people with social anxiety symptoms. Was done.

Methods : The present study is a causal-comparative study. Thirty individuals with social anxiety symptoms (3 clinkers in Yazd city in 97) were selected by convenience sampling method and 30 normal individuals were selected. Random sampling method was used. Social Anxiety Disorder Inventory (SPIN) and Reef Psychological Well-being Questionnaire were administered to the participants. Blood pressure and heart rate were measured. The data were analyzed by SPSS software using descriptive statistics and one-way analysis of variance (ANOVA).

Results : The results showed that there was a significant difference between normal people and those with social anxiety symptoms in the total score of psychological well-being variable and this difference was in favor of normal people as well as their blood pressure and blood pressure. The heart rate of normal people and those with social anxiety symptoms were significantly different (people with social anxiety had higher blood pressure and heart rate).

Conclusion : Considering that one of the problems of people with social anxiety is that it is far from community and community, the results of this study in the field of evaluation, training of counseling services for people with social anxiety is important.

Keywords : Psychological Well-being, Normal People, Symptoms of Social Anxiety, Autonomic Nervous System

Count: 5
Abstract ID: 271
subject: Motor Systems
and Movement Disorders: Movement Disorders (Parkinson, Huntington's, ALS, Ataxia, edication-induced Movement Disorders)
Presentation Type: Poster

Effects of Vestibular Rehabilitation on Parkinson–Related Fatigue and Activities of Daily Living: A Randomized Controlled Trial

Submission Author: Amir abas Abasi

Amir abas Abasi[1], mohammadreza hadian[2], parvin raji[3], Reza Hoseinabadi[4]

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Background and Aim : Parkinson's disease is the second most common neurodegenerative disease after Alzheimer's. Among the most disabling problems is fatigue, which decreases the quality of life by restricting activities and reducing their enjoyment. Therefore, improving fatigue to enhance the quality of life is an important goal of rehabilitation. In this study, we evaluated the effect of vestibular rehabilitation on fatigue and Activities of Daily Living (ADL).

Methods : the present study is a single-blind clinical trial. 24 Parkinson patients were selected based on list inclusion criteria and randomly divided into the control group (N=12, mean age 63.08) and intervention group (N=12, mean age 63.16). Each group received 24 sessions, given 3 days a week for about 50 to 60 minutes, with traditional rehabilitation in the control group and vestibular rehabilitation protocol in the other group. Both groups had been given fatigue management advice. Parkinson's fatigue was measured by Parkinson Fatigue Scale (PFS) and the Modified Fatigue Impact Scale (MFIS). ADL was measured by the Functional Independence Measure (FIM). We measured the change from baseline to completion.

Results : the vestibular intervention group improved significantly more in both fatigue (P=0.001) and ADL (P=0.001).

Conclusion : vestibular rehabilitation may improve fatigue and ADL. Vestibular rehabilitation can be used as a safe and effective intervention.

Keywords : Parkinson disease, Fatigue, Vestibular rehabilitation, Vestibular rehabilitation, Activities of Daily Living

Count: 6
Abstract ID: 503
subject: Neurorehabilitation and Regeneration: Psycho-cognitive Rehabilitation
Presentation Type: Poster

The Effectiveness of Cognitive Rehabilitation on Improving planning of People with Heroin Abuse

Submission Author: Akram Abbariki

Akram Abbariki[1]

1. phd student of Psychology , Razi University, kermanshah, iran

Background and Aim : People with heroin abuse have many problems in executive functions such as inhibition of response, organization, planning, emotional self-regulation, attention and memory. The purpose of this study was to investigate the effect of computer cognitive rehabilitation on the improvement of planning in people with heroin abuse disorder.

Methods : The present study was a semi-experimental design with a pre-test-pre-test. The statistical population consisted of all people suffering from heroin abuse disorder in Tehran city. A sample of 30 individuals was selected and divided into two experimental and control groups. The research tool was a London Tower Test test. Captain's Log cognitive rehabilitation program was run for 20 sessions of 50-60 minutes and twice a week for the experimental group.

Results : The results of covariance analysis indicated that Captain's Log cognitive rehabilitation program improves the planning of these individuals (P <0.001).

Conclusion : The results of this study showed that computer cognitive rehabilitation program can be used as a suitable method to improve the planning of these people's responses and thus help to leave, not returning and living standards people with hereditary abusers.

Keywords : Cognitive Rehabilitation, planning, Heroin abusive disorder

Count: 7
Abstract ID: 46
subject: Cognition: Learning and Memory
Presentation Type: Poster

The protective role of gallic acid nano phytosome on recognition memory impairment in prenatal valproic acid-induced rat model of autism

Submission Author: Haniyeh Abbasalipour

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Background and Aim : Autism Spectrum Disorders (ASDs) is a neurodevelopmental disorder characterized by impairments in social interaction and communication and cognitive deficits. Phytoconstituents like gallic acid are poorly absorbed due to their multiple ring large size molecules and their poor availability. In this study, we investigate the neuroprotective effects of gallic acid nano phytosome on recognition memory impairment prenatal valproic acid-induced rat model of autism.

Methods : . rat model of autism was induced by a single intraperitoneal injection of 500 mg/kg sodium valproic acid to female rats at gestational day (E12.5) peritoneally. Male offspring in the control group received distilled water. VPA-induced male offspring were divided into three groups: VPA group, VPA treated with gallic acid (GA) and gallic acid nano phytosome (GNP) groups at doses of 20 mg/kg from PND 21 until PND 51. Novel object test was conducted on postnatal day 50-51.

Results : Based on our results, a rat model of autism exhibited recognition memory impairment (P<0.001). GA and GNP were significantly reversed recognition memory impairment compared to the autistic rat (P<0.001).

Conclusion : These findings indicated that administration of gallic acid nano phytosome more ameliorates VPA-induced learning and memory deficits than gallic acid may be through enhancing the oral bioavailability.

Keywords : Autism; Gallic acid nano phytosome; memory impairment; rat

Count: 8
Abstract ID: 356
subject: Development: Neurodevelopmental Disorder (ADHD, Autism, Learning Disorders)
Presentation Type: Poster

Evaluation of polyphenolic structures on the β-amyloid aggregates compared with amorphous aggregates in the in-vitro conditions.

Submission Author: Sirvan Abbasbeigi

Sirvan Abbasbeigi[1], Shabnam MAghsoudi[2], Hadi Adibi[3]

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2. Medical Biology research center (MBRC), University of Medical Science, Kermanshah, Iran
3. Pharmaceutical Sciences Research Center, Faculty of Pharmacy, University of Medical Sciences, Kermanshah, Iran

Background and Aim : The aurone derivatives are a class of polyphenols family, which assumed that could bind to neurofibrillary tangle structures in-vivo in contrast with other probes incapability such as ThT and ThS. Therefore it is required to examine alternative synthetic compounds in-vitro first and then expand the experimental strategy to in-vivo circumstances

Methods : In this study, we inquired five types of synthetic compounds in the two different protein conditions. This examination provided a primary approach of understanding related to polyphenols family to be used instead of traditional probes to detect amyloid fibrils.

Results : The turning point of new compounds came from the intrinsic core structure of polyphenols. In other words, it has been imagined that the synthetic compound could cross the blood-brain barrier just against Thioflavin T/S because of their natural features

Conclusion : . According to previously published data related to the mentioned compounds, they contain no positive charge and law lipophilicity coefficient, which has been an obstacle in-vivo studies of Thioflavin T for a long time.

Keywords : Polyphenol family, Synthetic compounds, Thioflavin T, Blood-brain barrier, Amyloid fibrils

Count: 9
Abstract ID: 581
subject: Motor Systems
and Movement Disorders: Movement Disorders (Parkinson, Huntington's, ALS, Ataxia, edication-induced Movement Disorders)
Presentation Type: Poster

Outcome of STN- DBS on long- term motor function of patients with advanced Parkinson Disease

Submission Author: Amir Farhang Abbasi

Amir Farhang Abbasi[1], Faeze Abbasi[2], Rmina Rashedi[3]

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3. MD,Iran University Of Mdical sciences,Tehran,Iran

Background and Aim : The objective of our study was to assess UPDRS score in Parkinson Disease patients who underwent STN DBS 6 years after their surgery and to compare their UPDRS score 6 years after DBS with their score before surgery and 6 months after their operation.

Methods : In this cross sectional study which was carried out at Neurology department of Rasoul-e-Akram hospital in Tehran, Iran affiliated to Iran University of Medical Sciences (IUMS) between 2008 and 2014, 37 patients with advanced Parkinson disease were enrolled using non-randomized sampling method. All of the patients underwent STN-DBS surgery and one of the patients passed out before being discharged, therefore; we started our study with 36 patients. The UPDRS III total score at pre-operative state, 6 -month follow-up and 6- year follow-up state were compared respectively using repeated-measure ANOVA.

Results : 37 patients (26 Male and 10 Female) with the mean age of 50.08±3.04 ranging from 32 to 72 years underwent STN-DBS surgery. All patients were suffering from the advanced Parkinson disease with the mean period of 11.28±1.88 years. All patients except one, were followed up during six months. And 14 patients (8 Male and 6 Female) were included in a six-year follow-up. The UPDRS score measurements before surgery, at 6-month follow-up and 6-year follow-up were relatively 18.22±2.88, 12.8±3.14, 25±11.8.Significant increase in UPDRS score was observed between the pre-operative and six-year follow-up score (p<0.001).

Conclusion : In conclusion, this study suggested that total UPDRS score will increase at 5 years following STN DBS and also showed that resting tremor, one of UPDRS sub-scores, will improve over time and the benefit of DBS will be persistent even after 6 years.

Keywords : motor function ,Parkinson's Disease,STN DBS surgery

Count: 10
Abstract ID: 289
subject: Neurorehabilitation and Regeneration: Medication and Stem Cell Therapy
Presentation Type: Poster

Evaluation of metformin effect on outcome of patients with ischemic stroke

Submission Author: Faeze Abbasi

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Background and Aim : Experimental evidence suggests that metformin as an AMPK activator can reduce stroke severity. However, data is scarce and controversial and are mainly in animal models not in human models. The aim of this study is to evaluate stroke outcome in diabetic patients taking metformin in comparison with other agents.

Methods : In a case-control study, medical records of 60 patients with acute stroke were collected. Drug history was collected and diabetic patients were divided into two groups: metformin users and other diabetic agents' users. Some of these stroke patients had been treated with Intravenous thrombolysis (rTPA). The Severity of Stroke was evaluated via Modified Ranking Scale (MRS) at the time of stroke and the outcome of the stroke was assessed via 3-month Modified Ranking Scale (MRS) after stroke. These factors were compared between 2 groups. Subgroup analysis were performed for patients who were treated with rTPA.

Results : Two groups were match regarding baseline blood glucose, HBA1c, age and gender. χ^2 Test showed that there is no significant difference between two groups regarding severity of Stroke at the time of onset (P-Values=0.8) or outcome of stroke in the form of 3-month MRS(P-Value=0.2). Exact fisher test confirms the results. In subgroup analysis in patients who were treated with rTPA, there was also no significant difference between the outcome of the stroke(P-Value=0.01)

Conclusion : Despite previous experimental models, this study did not prove the neuroprotective effect of metformin. Further studies with more subjects and evaluating post-stroke administration of metformin should be considered

Keywords : Ischemic Stroke ,Diabete,Metformin

Count: 11
Abstract ID: 483
subject: Neural Injuries and Neurodegenerative Disorders: Neurodegenerative Disorders
Presentation Type: Poster

Evaluation Of Olfactory Function and Retinal Nerve Fiber Layer Changes In Patients With Parkinson's Disease

Submission Author: Faeze Abbasi

Faeze Abbasi[1], Nariman samadaeean[2]

1. Medical student,medicine faculty,Iran University Of Mdical sciences,Tehran,Iran
2. Medical student,medicine faculty,Iran University Of Mdical sciences,Tehran,Iran

Background and Aim : Parkinson's syndrome is one of several heterogeneous disease groups. Researchers are looking for a way to more accurately diagnose this disease. One of the things that was studied was the olfactory function of the disease. Other studies have been done on the changes in the neuronal layer of the retina in Parkinson's patients, but have not yet compared it with other symptoms such as olfactory function. Current research has been conducted to investigate the olfactory function and changes in the neural layer of the retina.

Methods : In this cross-sectional with cntrol group study that was performed in Rasoul-e-Akram Hospital in 1397 and 1398, 21 patients with Parkinson's disease and 20 healthy subjects were enrolled in the study. The main variables studied were the score obtained in the olfactory test and OCT. OCT was used to check RNFL. MMSE criteria and also UPDRS were used to assess dementia and severity. The Sniffin Sticks have also been used to collect information on the odors in this study. Finally, the data were entered into the SPSS software and analyzed. All patients were enrolled in the written consent form. At each stage, if the patient was reluctant to participate in the study, he was excluded.

Results : :The mean age in the case group was 62.25 ± 10.22 and in the control group it was 59.25 ± 6.68, and there was no significant difference between the two groups in terms of age. Gender abundance was almost equal in the two groups (61.9% of males in the case group compared to 55% in the control group). Regarding the mean left side OCT score in the two groups, it can be concluded that none of the 4 quadrants on the left side between the two case and control groups showed a significant difference. On the right, the results were aligned to the left. In relation to the various parts of the Sniffin Sticks test, which included Identification, Discrimination, Threshold, and TDI, it could be stated that all parts of the olfactory test were significantly different between the control and control groups. ($P < 0.0001$)

Conclusion : :People with Parkinson's disease with OCT seem to be unlikely to predict the duration of illness or disease as compared to the control group in this study. But those same people can be distinguished from the control group by the Sniffin Sticks smell test, and in other words, the smell of those who have the disease is disrupted and depressed compared to healthy people, which may be the result of this olfactory disorder for months or years before the manifestation Symptoms of motion sickness have begun and become less severe. It can also be concluded that there was no significant relationship between olfactory disturbances and olfactory tests with changes in the neural layer of the retina.

Keywords : Parkinson disease, olfactory function , retina

Count: 12
Abstract ID: 612
subject: Development: Evolution of Developmental Mechanisms
Presentation Type: Poster

The effect of play in natural outdoor and indoor spaces on perceptual and motor development among children

Submission Author: Kosar Abbaspour

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1. Ph.D student of motor behavior, Faculty of physical activity and sport sciences, University of Tabriz, Tabriz, Iran
2. Assistant Professor of motor behavior, Faculty of physical activity and sport sciences, University of Tabriz, Tabriz, Iran

Background and Aim : The early years of life are one of the most critical periods and the most important stage in human development. Also, many factors affect the child development process. One of the most important this factors is environmental factors. Environmental stimulation plays a critical role in optimal human development during the early stages of life and an optimal level of development occurs with strong contextual support. Nature provides readily accessible locations for play and attracts people outdoors because of the unique experiences offered, compared to play and physical activity in urban or manufactured settings. Also Playing and moving are essential to the young children's lives. Play allows children to use their imagination, dexterity, and physical, cognitive, and emotional strength. Play includes Physical activities that use physical movements to allow children to use their energy, and it gives children the chance to develop gross and fine motor skills, learn new things and socialize. Physical play also benefits a child's health. Understanding the importance of physical play is vital to your child's development. Therefore purpose of this study was to investigate "The effect of play in outdoor and indoor space on perceptual and motor development among preschool children".

Methods : In recent research semi-experimental research design with pretest–posttest design in two groups was used by convenient method. Statistical sample of research consisted of 30 pre-school children 4.5-6.5 years including N=15 Nature School (as outdoor) and N=15 kindergarten (as indoor). To measure motor development was used, Bruininks-oseretsky Test of Motor Proficiency, to assess perceptual development, the Beery-Buktenica Developmental Test.

Results : Results of mixed ANOVA showed that activity in outdoor space had positive and significant effect on the all of variables of this research (motor development: p=.0001, perceptual development: p=.0001). While activity indoor space had a significant effect on perceptual development (p=.013). But playing in nature had a greater effect on the perceptual development of children than indoor space. So that 84% of changes in motor development of children and 88% of changes in their visual-motor Integration were due to outdoor activities.

Conclusion : Therefore, the natural environment (outdoor) has a greater improvement in the perceptual and motor development among children. Our explanation of the unique benefits of nature-based exercise is centred on notions of affordances (Gibson' theory) and variability. First, nature's affordances are less constrained than manufactured affordances. Second, the variability presented by nature's environments (and not genes, mental constructs, such as intention, self-efficacy or motivation; or specific brain areas) solicits immersive interactions, motor, perception and attention. Third, the experience of nature-based play provides an opportunity to develop expertise in dealing with challenging situations (as improve perception and integration perception with motor).

Keywords : outdoor; indoor; perceptual development; motor development; children

Count: 13
Abstract ID: 529
subject: Emotion, Motivation and Behavior: Motivation and Emotion
Presentation Type: Poster

Comparison of Self-Differentiation, Psychological Hardiness and Uncertainty Intolerance in students with positive and negative affect

Submission Author: Soheila Abdi Jodagoe

Soheila Abdi Jodagoe[1]

1. M.A of Clinical Psychology, Islamic Azad University of Urmia

Background and Aim : Emotions are one of the most important factors in students' academic achievement and having positive and negative emotions can contribute to the direction of academic performance. The purpose of this study was to compare self-differentiation, psychological hardiness and uncertainty intolerance in students with positive and negative affect.

Methods : The research method is Descriptive - Cross-sectional. The statistical population of the study includes all male and female students of Azad University of Urmia during the second semester of 2018-19 (13000 students). 375 male and female students (192 girls and 192 boys) were selected by cluster random sampling and completed the Panas Affect Questionnaire, Bowen Self-Differentiation Questionnaire, Kabasa Psychological Hardiness Scale, and Uncertainty Intolerance. Data were analyzed using t-test and multivariate analysis of variance.

Results : The results showed that there was a significant difference between self-differentiation (P <0.05), hardiness dimensions including challenge (P <0.01) and commitment (P <0.05) between the two groups of positive and negative students. also, there was no significant difference between the two groups in uncertainty intolerance and hard dimensions component of control.

Conclusion : Based on the results, it can be said that students with positive emotions had more differentiation power as well as higher commitment and challenge than students with negative emotions, which results in more favorable status of students with positive emotions.

Keywords : Self-Differentiation, Psychological Hardiness, Uncertainty intolerance, Positive and Negative Affect

Count: 14
Abstract ID: 202
subject: Emotion, Motivation and Behavior: Motivation and Emotion
Presentation Type: Poster

The Mediating Role of Psychological Capital in the Relationship between Craving for Consumption and Avoidance Coping Style with Recurrence of Drug Use

Submission Author: Nasrin Abdoli

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Background and Aim : Introduction and goal Addiction is one of the major problems and concerns in the world today, The upward trend of its consumption has serious health and economic consequences for the individual and society. The purpose of this study was to investigate the mediating role of psychological capital in the relationship between craving and avoidance coping style with relapse.

Methods : The research was descriptive and correlational. The statistical population included all men with addiction who referred to Farabi Hospital of Kermanshah in 1398. Using convenience sampling and purposeful sampling, 180 people were selected and based on psychological capital questionnaire (Lutz, 2004), The subscales of Avoidance Coping (Endler & Parker, 1990) and the Drug Abuse Scale Questionnaire (Franken et al., 2002) responded. Data were analyzed using descriptive statistics (mean and standard deviation), Pearson correlation coefficient and path analysis with SPSS / 25 and AMOS / 23.

Results : The results showed that the mean (SD) age of the sample was 39.83 (7.16)) and there was a significant relationship between craving for drug reuse, avoidance coping, and low psychological capital p. (05/0>[Also, the results of path analysis showed, There was a significant relationship between demographic variables of education, birth order and smoking cessation in adolescents.

Conclusion : It seems to be designed with psychological intervention. Psychological capital can reduce the likelihood of drug reuse in high-risk groups. Keywords: Craving, Avoidance Coping, Psychological Capital, Addiction, Men.

Keywords : Craving, Avoidance Coping, Psychological Capital, Addiction, Men.

Count: 15
Abstract ID: 11
subject: Cognition: Cognitive Aging
Presentation Type: Oral

Correlational study of the ability to identify odors and cognitive functions in individuals aged 50-65

Submission Author: Mohammad Amin Abdollahi

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Background and Aim : Evidence suggests that olfactory sensation is one of the first symptoms to occur in Alzheimer's disease even years before other symptoms occur. However, the mechanisms and relationships of olfactory sense with other cognitive abilities and capacities have not been elucidated. Therefore, by assessing cognitive abilities such as attention, working memory and processing speed, as well as assessing people's quality of life in the community of people entering retirement age, due to the greater likelihood of cognitive and olfactory deficits in these individuals, In this study we investigated the correlation between the olfactory ability of individuals and some of the most important cognitive abilities.

Methods : In this study, each subject was assessed in one session by validated neuropsychological tests and the University of Pennsylvania Odor Test. In this pilot study, 14 subjects were used as the sample. Assessment tools used in this study include neuropsychological tests to measure cognitive abilities including PASAT, Rehacom Selective Attention Screening, Rehacom Divided Attention Screening, Rehacom Alertness Screening, Digit Span Test, and Symbol to Digit Modality Task. , CANTAB Stop Signal Test, MOCA, IVA-2, Vienna Corsi-Block Test and psychological tests such as Beck Depression Inventory-2 and General Health Questionnaire and UPSIT.

Results : The results of statistical analyses show that individuals' scores in olfactory recognition correlated with cognitive abilities such as auditory working memory, sustained attention, verbal fluency, and naming ability.

Conclusion : This study aimed to investigate and analyze the scores of individuals in detecting and naming odors and comparing them with cognitive abilities such as attention, working memory and processing speed, in particular, analyzes of the relationship and correlation of age and function. Cognitive and olfactory as well as correlations between cognitive tests were studied. According to the results of this study, it seems that individuals' ability to identify odors by their scores in PASAT Working Memory Test, MoCA Cognitive Assessment Test in Verbal fluency and Ability to name Subtests, and IVA- 2, there was a significant correlation.

Keywords : Olfactory System; Attention; Working Memory; Processing Speed

Count: 16
Abstract ID: 135
subject: Epilepsy, Neural Excitability, Synapses, and Glia: Seizure and Epileptic Disorders
Presentation Type: Poster

Comparison of acute and chronic experimental epileptic activity amplitude in male rats

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Background and Aim : This study aimed to compare the amplitude of spikes induced by acute and chronic intraperitoneal injection of pentylenetetrazol in adult male rats.

Methods : In this study, 22 adults male Wistar rats (200-250 g) were used in the control (n=6), acute (n=6) and chronic group (n=10). After anesthesia with the combination of ketamine (80 mg/kg) - xylazine (eight mg/kg), the animal's head was held fixed using a stereotaxic device and after longitudinal incision in the scalp and wiping the tissue and determining the Bregman point, the intracranial recording electrode was inserted into the CA1 hippocampal striatum layer and seizure activity was induced by intraperitoneal injection of pentylenetetrazol (80 mg/kg). After digestion, the recording electrode was inserted into the CA1 hippocampal striatum layer and seizure activity was induced by intraperitoneal injection of pentylenetetrazole (80 mg/kg). Animals were anesthetized with the combination of ketamine (80 mg/kg) - xylazine (eight mg/kg) and after fixation using a stereotaxic apparatus, followed by longitudinal incisions in the scalp and wiping the tissues on the skull, intracranial recording electrodes were placed in the CA1 hippocampal striatum layer, and seizure activity were induced by intraperitoneal injection of pentylenetetrazol (80 mg/kg). In the control group, after recording the activity in basal condition, normal saline and in the acute, group were injected intraperitoneally with pentylenetetrazole and the amplitude of spikes was evaluated by eTrace software. However, whereas in the chronic group for eight weeks on Saturday, Monday and Wednesday, 30 mg/kg pentylenetetrazole were injected intraperitoneally and after the end of this epileptic activity period, similar to the grave group. Diazepam 10 mg/kg was used to suppress epileptic activity induced by pentylenetetrazol.

Results : The results of the present study showed that no spike activity was recorded in the control group and the difference of spike amplitude in the chronic group compared to the acute group was not statistically significant. Data were analyzed by SPSS software version 22 using one-way ANOVA and Tukey post hoc test. $P < 0.05$ were considered significant.

Conclusion : The causes and mechanisms involved in spike amplitude changes in favor of their reduction or elevation are unclear, and further studies are needed to clarify the issue.

Keywords : Acute, Chronic, spike amplitude, Epilepsy, and Pentylenetetrazol.

Count: 17
Abstract ID: 156
subject: Neural Injuries and Neurodegenerative Disorders: Dementia
Presentation Type: Poster

How can speech and language pathologist help the early diagnosis of Creutzfeldt_Jakob Disease?

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Background and Aim : Creutzfeldt_Jakob disease (CJD) is a neurodegenerative disorder and caused by a proteinaceous infectious agent called a "prion" results in the accumulation of prion protein (PrPsc) in the brain. Rapidly progressing dementia, ataxia and myoclonus are the manifestations of this disease, however, often CJD comprises a broader spectrum of clinicopathological variants. Also, some studies reported speech and language signs in CJD patients such as aphasia and speech apraxia. The early diagnosis of CJD remains challenging in some cases, especially when the clinical presentation is unusual. In clinical practice, an early diagnosis can minimize the morbidity and mortality of this disease and is mandatory to improve patients' outcome in therapeutic trials. The aim of this study was to investigate how can speech and language pathologist help the early diagnosis of CJD.

Methods : A review of the literature concerning speech and language characteristics of CJD was conducted using the databases MEDLINE (PubMed), Science Direct, Scopus, Web of science, Web of knowledge and Cochrane. Relevant studies were identified by two reviewers based on screened titles/abstracts and full texts.

Results : Of the papers found on the basis of the keywords, 14 papers were selected. All of these were addressed to CJD's speech and language signs and has been found one of the initial manifestations of CJD was language and speech difficulties that progressed worse. Different

Conclusion : According to the results of the review of studies, it is important for speech and language pathologist as a member of the medical community to be aware of the probable diagnosis of CJD among patients whose main complaints are rapid speech and linguistic progressive impairments, therefore, the quick referral of these patients to the neurologist is essential. Furthermore, it's best to consider the role of speech and language pathologist among specialists who are involved in the diagnosis of the CJD.

Keywords : Creutzfeldt_Jakob Disease, speech and language pathologist, early diagnosis

Count: 18
Abstract ID: 560
subject: Neural Injuries and Neurodegenerative Disorders: Spinal Cord Injury
Presentation Type: Poster

Effects of cerebrolysin on spinal cord injury; a narrative review

Submission Author: Nasrin Abolhasanpour

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Background and Aim : Spinal cord injury (SCI) is one of the most common neurological diseases among central nervous system (CNS) deficiency. According to the World Health Organization reports, the prevalence and epidemiology of SCI around the world are between 250,000 to 500,000 people every year, and annually about 11,000 new cases added to this population. Following the SCI, conduction of the normal motor and sensory neurons, as well as the autonomic function has been changed temporary across the site(s) of the lesion(s). inasmuch as CNS is unable to recover itself truly, SCI recovery faces numerous challenges. The early management of SCI was surgical decompression and steroid therapy for blood pressure augmentation, in the next stage, some treatment approaches like pharmacological and non-pharmacologic therapies, and stem cell therapies were recommended. Cerebrolysin (CL) is a biotechnologically produced drug with a combination of low molecular weight peptides derived from pig brain, consisting of important neurotrophic factors such as BDNF, GDNF, NGF, ciliary neurotrophic factor and free amino acids. A remarkable similarity was shown among the pharmacological features of CL and endogenous neurotrophic factors. CL is one of the important treatment strategies in CNS dysfunctions, so the aim of this review was considering the influence of spinal cord injuries.

Methods : This study conducted based on a comprehensive search from the last ten years, and articles related to the effects of cerebrolysin on spinal cord injury were considered.

Results : The neurotrophic aspects and potential neuroprotection properties of CL have made it a choice for the treatment of neurological diseases in the clinical setting. In CNS injuries, such as multiple sclerosis, dementia, Parkinson's disease, Alzheimer's disease, and acute or chronic stroke, CL is used to neuronal regeneration and neuroprotection in these diseases. In SCI animals, CL has been proven to improved neuroprotection inside the spinal cord, and its effect is time- and dose-dependent. Also, CL induces significant neuroprotection and marked a reduction in neural injury, glial cell activation, reduction in blood-spinal cord barrier (BSCB) breakdown and edema formation, caused to the survival of motoneurons following ventral root avulsion, prevents apoptosis of lesioned motoneurons and promotes functional recovery in rats after SCI.

Conclusion : Our investigations show that Cerebrolysin as a mixed growth factor could play a critical role in the improvement of neural pathways, neuroprotection, and neurogenesis in the spinal cord injured rats.

Keywords : Spinal cord injury, cerebrolysin, animal

Count: 19
Abstract ID: 267
subject: Neural Injuries and Neurodegenerative Disorders: Neurodegenerative Disorders
Presentation Type: Poster

Evaluation of betulinic acid effects on pain, anxiety, catalepsy, and oxidative stress in animal model of Parkinson's disease.

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Background and Aim : Background: Parkinson's disease (PD) is classically known as a progressive neurodegenerative disorder affecting up to 3% of individuals over the age of 65 years . It is characterized by tremor at rest, rigidity, bradykinesia, hypokinesia and postural instability. Betulinic acid (BA) is a nutural active compound with potent antioxidant activity. The present study addresses the question whether BA affects motor dysfunctions, pain, anxiety and molecular changes in the rat model of PD induced by 6-hydroxydopamine (6-OHDA).

Methods : Methods: Male Wistar rats (300-350g) divided randomly into 6 groups with 7 in each. Sham, PD, 3 treated groups with BA (0.5, 5, and 10 mg/kg, ip) and a positive control received L-DOPA (20mg/kg, P.O) for 7 days. Right medial forebrain bundle (MFB) was lesioned by injection of 6-OHDA (20 μg/kg) under streotaxic surgery in anesthetized rats. PD was established by apomorphine (0.5 mg/kg, ip) for induction contralateral rotation 14 days after PD induction. Treatment of rats begun just after the approved rotation test. To assess regidity, anxiety and analgesia mice were tested in bar test, open field, elevated plus maze (EPM) and tail-flick. In addition, The malondialdehyde (MDA) level and glutathione peroxidase (GPx) activity in brain tissue were measured.

Results : Results: Treatment the PD rats with BA significantly reversed the 6-OHDA-induced motor complication ($P<0.001$) in the bar test, but it modified anxiety like behavior neither in open field nor in EPM and also no significant changes was found in the tail flick between treatment and sham groups. On the other hand the kevel of malondialdehyde (MDA) was increased ($P<0.001$), and the activity of glutathione peroxidase (GPx) ($P<0.05$) was evaluated at the end of the experiment.

Conclusion : Conclusion: Our results showed that BA could affect as a potent natural free radical scavenger which removes brain tissue oxidants in PD. It can account as a possible promise as a good therapeutic agent for motor and non-motor complications in PD.

Keywords : Keywords: Parkinson; Betulinic acid; Open Field ; Elevated Plus Maze; Bar Test; Tail Flick; GPX; MDA.

Count: 20
Abstract ID: 421
subject: Neural Injuries and Neurodegenerative Disorders: Neurodegenerative Disorders
Presentation Type: Poster

Evaluation of thermal preference behavior in the rat model of rotenone induced hemi-Parkinson using double plate technique

Submission Author: Fatemeh alsadat Abtahi

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Background and Aim : Parkinson's disease is characterized primarily as a neurodegenerative disorder that leads to disabling motor and cognitive impairment. Pain is an important and distressing symptom in Parkinson's disease (PD). The present study aimed to investigate rotenone induced substantia nigral lesion effect on cold aversion behavior in the rat using double plate technique.

Methods : Adult male Wistar rats were used in this study. For induction of hemi-Parkinson model, rotenone (12 μg/site in 1μl, DMSO) was injected directly into the substantia nigra pars compacta (SNc) using stereotaxic apparatus in the following coordination (AP: 5.0 mm; L: 2.0 mm; DV: 8.0 mm). The double plate device comprised two metal plates with different temperature (thermo-neutral plate: 24 ℃ and cool plate: 14 ℃) and a Plexiglas cage was placed on the two plates. The device was equipped with a digital video tracking system. 7 and 14 days after Parkinson induction double plate test was performed and the behavioral parameters include speed and the time spent on cool or thermo-neutral plate were analyzed for a period of 10 minutes.

Results : 7 and 14 days following surgery, control animals moved on both plates with the approximately similar speed and spent near to equal time on both plates. The time spends on the innocuous cold plate significantly decreased ($P < 0.05$) in hemi-Parkinsonian animals in comparison with sham control animals.

Conclusion : According to this finding hemi-Parkinsonian rats preferred thermo-neutral plate to stay and avoided from cool plate during the test as the result of central neuropathy induced cold allodynia.

Keywords : Parkinson, Rotenone, Double-plate, Allodynia, Rat

Count: 21
Abstract ID: 578
subject: Development: Neurodevelopmental Disorder (ADHD, Autism, Learning Disorders)
Presentation Type: Oral

Multisensory Therapy in Cognitive Dysfunction

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Background and Aim : Complementary alternative medicine modalities help to treat patients with cognitive dysfunctions such as Alzheimer's disease, dementia, Autism Spectrum disease (ASD), and etc. in many developed countries. We will review the effects of exposure to multisensory stimulation studies in humans and rodents has been repeatedly shown to affect multiple aspects of brain function, and is known to improve cognitive and behavioral outcomes after brain injuries. We will discuss further about ASD as a severe neurodevelopmental disorder which characterized by qualitative impairments in social behavior, communication and aberrant repetitive behaviors. As in animal models of autistic disorders, a major focus is the subjects mimic the social deficits; we will show that rats exposed prenatally to valproic acid show deficits in social deficits, tactile discriminations and startle reflex. Environmental enrichment reversed almost all behavioral alterations observed in this model.

Methods : No

Results : No

Conclusion : No

Keywords : Multisensory stimulation; enriched environment; Rat

Count: 22
Abstract ID: 566
subject: Cognition: Learning and Memory
Presentation Type: Poster

The effect of NAD-299 and TCB-2 on learning and memory and hippocampal BDNF levels in Streptozotocin-induced Alzheimer's disease in male rats

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Background and Aim : Alzheimer's disease (AD) is the most common form of dementia characterized by a progressive decline in cognitive function. The serotonergic system via 5-HT1A receptor and 5-HT2A receptor are proposed to affects cognitive process. In the present study, the effects of NAD-299 (5-HT1A receptor antagonist) and TCB-2 (5-HT2A receptor agonist) on learning and memory processes and hippocampal brain-derived neurotrophic factor (BDNF) levels have been investigated in streptozotocin-induced Alzheimer's disease in rats.

Methods : Adult male Wistar rats (250–300 g) were divided into six groups: control, sham-operated, AD, AD+NAD-299 (icv for 30 days), AD+TCB-2 (icv for 30 days) and AD+NAD-299+TCB-2 [icv for 30 days). Following the treatment period, rats were subjected to behavioral tests of learning and memory. Then Hippocampal BDNF and amyloid-beta (Aβ) plaque were determined by ELISA Kit and Congo red staining, respectively.

Results : Our results showed that icv-STZ injection decreased the discrimination index in the novel object recognition (NOR) test. In the passive avoidance (PAL) task, icv-STZ injection significantly decreased step-through latency (STLr) and increased time in dark compartment (TDC). Treatment with NAD-299, TCB-2, and NAD-299+TCB-2 attenuated the STZ-induced memory impairment in both NOR and PAL tasks. Icv-STZ induced a decrease in hippocampal BDNF level fallowing by Aβ plaques production in the brain, whereas treatment with NAD-299, TCB-2 and NAD-299+TCB-2 reduced Aβ plaques in the brain and increased the hippocampal BDNF level.

Conclusion : These findings suggest that 5-HT1AR blockade by NAD-299 and 5-HT2AR activation by TCB-2 improve cognitive dysfunction in a rat model of AD and these drugs could potentially prevent the progression of AD.

Keywords : Alzheimer's disease; Streptozotocin; 5-HT1A; 5-HT2A; Amyloid plaque; cognition

Comparison of Cognitive Functions (Memory, Cognitive Attention, Inhibitory Control, and Selective Attention) in Children with Neurodevelopmental Disorder (ADHD)

Submission Author: SEDIGHE AFSHARI

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Background and Aim : Autism is one of the most severe types of childhood neurodevelopmental disorders, characterized by severe deficiencies and multiple pervasive developmental disorders, including impaired social interaction and communication, and the presence of patterns, behaviors, interests, and activities. Also, neurodevelopmental disorders are the most common attention-deficit / hyperactivity disorder in childhood, leading to impaired academic, social, and family life. The purpose of this study was to compare cognitive functions (memory, cognitive attention, inhibitory control and selective attention) in children with developmental neurological disorder (AD) and ADHD.

Methods : In this study, the post-event method (causal-comparative method) was used. The statistical population of this study was all children with developmental neuropathy and ADHD in Tehran province (regions 1, 2 and 6) referred to clinics for treatment follow-up. 20 individuals were selected through purposive sampling as the research sample and standard questionnaire of rescue cognitive functions (2013) was used for data collection. They were completed by parents. One sample Kolmogorov-Smirnov test was used for data analysis. Normalization of the distribution of observations of the research variables and comparison of means of independent groups (independent t-test) was used to investigate the difference of research variables between children with neurodevelopmental disorder (autism (ADHD) and children with neurodevelopmental disorder).

Results : Statistical analysis was performed using SPSS software. The results showed that the mean cognitive function of memory, cognitive attention, inhibitory control and selective attention were significantly different between the two groups. In children with ADHD, cognitive functions were lower in cognitive attention and control-selective attention, but in autism group cognitive memory was lower.

Conclusion : According to the results of the present study, appropriate intervention methods can be used to change the cognitive functions of both groups.

Keywords : Cognitive functions (memory, cognitive attention, inhibitory control and selective attention), neurodevelopmental disorder (autism), neurodevelopmental disorder (ADHD)

Count: 24
Abstract ID: 631
subject: Cognition: Consciousness
Presentation Type: Oral

Investigating the Phenomenality of Consciousness in Iconic Memory Using Stroop Modified Paradigm

Submission Author: Mehdi Afzalinia

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Background and Aim : Phenomenal consciousness is the unique, private, and first-person mental qualitative experience that cannot be verbally described and reported. Access consciousness is the accessibility of phenomenal consciousness for cognitive systems. One of the components of access consciousness is attention. It is said if we want to become conscious of something, we should already pay attention to it meaning that attention is necessary for consciousness. But if there is a situation in which consciousness happens without attention, the nature of that consciousness will be phenomenal. Iconic memory, which is the most transitory type of memory, has been investigated in the discussion of the necessity of attention for consciousness. In iconic memory tasks subjects have to report the cued items in the partial report condition and report all the items in the whole report condition. Results have shown that subjects report less than half items in the whole report but report nearly all the cued items. Based on this, some have claimed we see more than we can report and although all the items in iconic memory are not reportable at once, all of them are phenomenally and consciously represented. But others argue that first the items are unconsciously represented and then the attended parts will become consciously access. Using iconic memory dual tasks in which attention is locally diverted to peripheral task in order to examine phenomenality of consciousness in the central task in the previous studies has caused the problem of expectation and previous knowledge in perception of the stimuli. Regarding the methodological shortcomings of examining the two opposing views in studying the phenomenality of consciousness in iconic memory, the purpose of the present study was to suggest and use Stroop's modified paradigm to study consciousness in iconic memory as in Stroop paradigm there are two processing properties of word and color and it would not need to divert attention locally as in dual tasks.

Methods : Thirty subjects were voluntarily selected and randomly assigned to partial and whole report groups. They performed the iconic memory task in two congruent and incongruent conditions. After the modified Stroop test was performed, the data were analyzed by T-dependent and covariance analysis.

Results : A) in the partial report group, participants had more correct responses and less reaction time in responses consequently, better performance compared to whole report group both in congruent and incongruent conditions. B) attentional bias to word processing in incongruent condition did not decrease the processing speed in responses compared to congruent condition both in the partial and whole report groups.

Conclusion : Consciousness in iconic memory is phenomenal and does not require attention.

Keywords : Phenomenal Consciousness, Access Consciousness, Attention, Iconic Memory, Stroop Paradigm

Count: 25
Abstract ID: 251
subject: Pain and Sensory Systems: Other
Presentation Type: Poster

Intra-DMH/VMH injection of bicuculline can induce the innate fear that followed by analgesia

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Background and Aim : The hypothalamus plays a key role in the expression of fear and defensive responses. The dorsomedial and ventromedial hypothalamic (respectively DMH and VMH) nuclei were considered to be essential for handling the threat and fearful situations. The blockade of GABAA receptors in the DMH and VMH nuclei by bicuculline induces augmented defensive behavioral responses which has been known as innate fear. Furthermore, the exposure to unconditioned or conditioned stressful stimuli can suppress the pain which universally known as stress-induced analgesia. Thus, induction of innate fear can produce the stress-induced analgesia by activating the descending inhibitory pain pathway. Therefore, the aim of this study was to investigate the possible involvement of the DMH and VMH nuclei in the elaboration of panic-like reactions and in the innate fear-induced antinociception.

Methods : In this study, male Wistar rats weighing 200–270 g (n=7 per group) were obtained from the animal facility of Baqiyatallah University of Medical Sciences. Animals were anaesthetized with 60 mg/kg ketamine and 7.5 mg/kg xylazine and fixed in a stereotaxic apparatus. The stainless steel 23-gauge guide cannulas equipped with a 30-gauge stylet were unilaterally implanted in the right DMH/VMH nuclei. After recovery period, 40 ng/300 nl bicuculline was injected into the DMH/VMH nuclei and then the innate fear-induced behaviors were evaluated by open field test. To assess the innate fear induction, the following behaviors were studied over 10 min using a Sony Handycam camera: the crossings; the rearing (upright posture); the rapid defensive backward movements; the elaborated forward escape behavior; the defensive attention; the defensive immobility ('freezing') and the jumping oriented to the upper side of the arena. Once open field test was finished, 50 µl of 2.5% formalin was immediately injected subcutaneously (s.c.) into the plantar surface of left hind paw of rats. The formalin-induced flinching, flexing and licking behavior was recorded for 60 min. In this experiment, the formalin-evoked behaviors were divided into two phases including the first phase (0–7 min) and the second phase (16–60 min) separated with a relative inactivity interval. At the end of the tests, animals were killed and their brains were removed and examined for the correct cannula implantation in the DMH/VMH nuclei.

Results : These results demonstrated that the intra-DMH/VMH injection of bicuculline significantly increased the frequency and duration of defensive attention, the frequency and duration of defensive immobility ('freezing'), the frequency and duration of rearing (upright posture) and the frequency jumping behavior. These results approved the innate fear induction. The intra-DMH/VMH injection of bicuculline led to significant decrease in flinches (P < 0.001), ?exing (P < 0.001) and licking (P < 0.01) duration just during the first phase of the formalin test.

Conclusion : According to our results, it can be concluded that the inhibition of the GABAergic system of DMH/VMH nuclei can induce the innate fear. Consequently, the innate fear induction can led to stress-induced analgesia.

Keywords : DMH/VMH nuclei, Bicuculline, innate fear, Stress-induced analgesia.

Count: 26
Abstract ID: 396
subject: Emotion, Motivation
and Behavior: Neural Basis of Human Behavior
Presentation Type: Poster

Lateral hypothalamic peptide orexin is involved in morphine dependency in locus coeruleus neurons

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Background and Aim : Opioids are known as one of the most effective analgesic drugs but repeated exposure to them results in dependency. Various brain sites are involved in dependency including locus coeruleus (LC). Orexins are neuropeptides produced in neurons of the lateral hypothalamus, which contribute to morphine-induced dependency, project widely throughout the brain, especially LC. Orexins exert an excitatory effect on LC neurons through OXR1. Withdrawal syndrome is temporally accompanied by LC hyperactivity and blockade of LC neuronal activity attenuates opiate withdrawal symptoms. OXR1 antagonist also attenuate morphine withdrawal signs, thus, orexin peptides may participate in the LC neuronal hyperactivity that is associated with the expression of somatic withdrawal signs. Moreover chronic drugs of abuse influence the orexin system via changes in orexin neural activation and mRNA levels of orexin or its receptors. In this study we compared the expression of OXR1 in the LC of morphine dependent rats and in withdrawal state and also investigated the role of orexin in naloxone induced hyperactivity of LC neurons.

Methods : Male Wistar rats weighing 250-300 g were used in this study. To incite dependency, morphine was injected (10 mg/kg, i.p.) twice a day for 10 days. In the molecular level we used RT-PCR in order to measure the expression of orexin 1 receptor in LC neurons of healthy and dependent rats and in electrophysiologal view the LC neural activity was investigated using in vivo extracellular single unit recording. A selective OXR1 antagonist (SB-334867) was microinjected into the right cerebral ventricle (10 μg/10 μl. i.c.v.) while recording, immediately before naloxone injection

Results : In molecular level, RT-PCR showed that chronic administration of morphine caused an increase in expression of OXRs expression in LC and naloxone injection led this expression back to be normal. Morphine injection during 10 days led to the induction of morphine dependency in LC neurons which was observed as a significant increase following naloxone injection and central blockade of ORX1 by administration of ORX1 antagonist (SB-334867) before naloxone injection in morphine-dependent rat undermined increased activity in LC neurons

Conclusion : Our molecular and electrophysiological results will evaluate the interactions between orexin receptors and morphine dependency and also indicate that these receptors are involved in hyperactivity of LC neurons induced by naloxone in morphine dependency.

Keywords : Opioids; locus coeruleus (LC); Orexin; RT-PCR; single unit recording.

Count: 27
Abstract ID: 630
subject: Special topics: Art and Neuroscience
Presentation Type: Oral

Mind and Photography: Investigation of the works of Jeff Wall, Andreas Gursky and Thoma Struth from the perspective Ramachandran's seven laws of artistic experience

Submission Author: Romina Aghandeh

Romina Aghandeh[1]

1. University of Tehran

Background and Aim : The human mind has undoubtedly influenced all aspects of his life that have long been debated by scientists and philosophers of nature and how it has affected the world around us. Also examining the role of the mind and how it works and affects phenomena is a hot topic for contemporary scholars and philosophers.The photography media has a significant influence on the creation of effective photographs and artworks since the invention of the camera. On the other hand, today the photographic media finds and finds more importance than ever before for the creation of the work of art and its recognition as art.

Methods : In this research titled Mind and Photography: Investigation of the works of Jeff Wall, Andreas Gursky and Thoma Struth from the perspective Ramachandran's eight laws of artistic experience, we investigate the relationship between mind and photography and how the mind of the creator of the photograph and the artist affects the final photograph as an artwork by examining the presence of features which V.S. Ramachandran and William Hirstein put forth in an article entitled "The Science of Art – A Neurological Theory for Aesthetic Experience" (1999) in order to introduce the prerequisites of an artistic experience by Gillian Rose's method composition interpretation in 15 History-"Painting" photographs by Jeff Wall, Andreas Gursky, and Thomas Struth.

Results : The results of this study show that the photographer's mind will affect his or her works through the features mentioned in the article, both consciously and unconsciously. Also features of peak shift principle, perceptual grouping, isolation, contrast, symmetry, generic viewpoint, and visual metaphor are factors that can be documented as mediators to influence the artworks and photographs by the mind. In the studied samples, peak shift principle and perceptual grouping were found to have the highest rate of use in the works and the least of them was contrast. Picture for Women and The destroyed Room by Wall and Sao Paulo, Se by Gursky also had the highest percentage of attributes mentioned above.

Conclusion : The mind of photographer as artist influences his/her photographs and artworks, both consciously and unconsciously by using Ramachandran's laws to create the final work. Because when he/she use all or some of those features and they greeted by his/her audience after being presented, he/she unconsciously will get encourage to create and adhere to what he/she has created before by realizing his/her works were accepted by society; Although he/she is not very likely to be aware of what happened by the brain's neural mechanism and its effects on this process.

Keywords : Photography; Mind; Neuro-aesthetics; Jeff Wall; Andreas Gursky; Thomas Struth

Count: 28
Abstract ID: 167
subject: Development: Neurodevelopmental Disorder (ADHD, Autism, Learning Disorders)
Presentation Type: Poster

The prevalence of learning disabilities in children with migraine: Meta-analysis

Submission Author: Alireza Aghaz

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Background and Aim : Migraine is a major dilemma and problem which affects public health and results in reduced quality of life. Learning disabilities seem to have a high prevalence among children with migraine. This study aimed to determine the prevalence of Learning disabilities in children with migraine.

Methods : We searched the international databases (PubMed, Science Direct, Scopus, Web of Science and Google Scholar) and the national databases (Magiran, Iran Medex, and Scientific Information Database). The standard error of the prevalence reported in each study was calculated assuming a binomial distribution. We used a random-effects model to combine the prevalence rates reported in the studies. I-Squared was used for calculating heterogeneity among the studies. We conducted the meta-analysis using the metan application of Stata statistical software.

Results : Six studies were identified with a total of 2412 subjects. Heterogeneity between studies was (I2 = 85. 1%). Based on the results of the random effect method, the pooled prevalence of learning disabilities in children with migraine was 34 % (95%CI: 23% to 45 %). And the overall prevalence of learning disabilities among boys was 38% (95%CI:22.3% to 61.49%), while it was 33% (95%CI: 24% to 43%) among girls.

Conclusion : Learning disability is a more common problem in children and adolescents who are referred for neurological assessment due to primary headaches than is described in the general pediatric population. There is a high association between headache diagnosis and school achievements.

Keywords : Migraine, Learning disabilities, Prevalence, Meta-Analysis

Count: 29
Abstract ID: 464
subject: Neurorehabilitation and Regeneration: Speech and Language Therapy
Presentation Type: Poster

The Prevalence of Dysphagia in the Elderly: A Systematic Review and Meta-Analysis

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Background and Aim : Dysphagia is an important problem that is believed to be more common in the older population. Better insight in the prevalence of dysphagia in the elderly people may improve its early detection and effective rehabilitation treatment. We presented a systematic review and meta-analysis to estimate the prevalence of dysphagia in general and subjective and objective method, in the elderly people.

Methods : The international databases (PubMed, Science Direct, Scopus, Web of Science and Google Scholar) and the national databases (Magiran, Iran Medex, and Scientific Information Database) were searched. The standard error of the prevalence reported in each study was calculated assuming a binomial distribution. We used a random-effects model to combine the prevalence rates reported in the studies. We conducted the meta-analysis using the metan application of Stata statistical software. Cross-sectional and prospective cohort studies were reviewed.

Results : Twelve articles entered the meta-analysis phase; the estimation of the general prevalence of dysphagia in the elderly people was 29.38% (95%CI:18.67-40.8) in all the 12 studies. Moreover, the estimate of the prevalence via the subjective (8 studies) and objective (4 studies) methods were 18.6% (95%CI:10.45-26.9) and 45.2% (95%CI:22.43-67.96), respectively.

Conclusion : This is proven that dysphagia is a more common problem in the elderly population. So should was programed for early diagnosis of dysphagia and in time treatment in the elderly population.

Keywords : Dysphagia; Prevalence; Aging; elderly; meta-analysis.

Count: 30
Abstract ID: 130
subject: Neuropsychiatry and Psychology: Other
Presentation Type: Poster

Neurologic Music Therapy: A Clinical Neuroscience Approach to Music Therapy

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Background and Aim : neurological music therapy (NMT) is a new approach to music therapy which is an evidence-based treatment model that uses standardized, research-based techniques to treat the brain using music and rhythm. NMT is based on the neuroscience of music perception, production, and cognition. These techniques are defined by (1) the diagnostic treatment goals and (2) the role of the music. NMT is standardized in terminology and application and is applied as a treatment which is adaptable to a patients need. Music can be play a role as a brain stimulation in the therapeutic protocol or it can be utilized as a feedback given by music therapist's musical instrument or a computer program during neurofeedback or biofeedback sessions.

Methods : This article is a review of published articles regarding Neurologic Music Therapy and its clinical applications.

Results : a raft of researches have concluded that music can access control processes in the brain related to control of movement, attention, speech production, learning and memory, which can retrain and recover functions in the injured or diseased brain. It is approved that Listening to music can reduce epileptiform discharges and enhances brain plasticity. There is evidence that incorporating music into a rehabilitation program fosters recovery of hand function, dexterity, spatial movement, cognitive function, mood, coordination, stride length and memory. Learning words as lyrics, melodic intonation therapy and singing can help the aphasic patient to recover faster. NMT also can help children with autism spectrum disorder (ASD) to develop the foundational Neurologic skills related to sensory development, motor planning and executive functioning skill needs so often seen in individuals with ASD and as a result It improve speech and language skills, socialization, attention, memory and sequencing through musical play much like floor time, or specially designed evidence-based interventions such as specialty composed music as a memory aid for social story scripts.

Conclusion : It have been demonstrated that music can influence brain by stimulating cognitive, affective and sensorimotor processes and it can effectively be used to rehabilitate and re-educate the brain. NMT is an inexpensive, noninvasive and enjoyable treatment which can help to reduce symptoms and enhance function of patients with neurological and mental disorders.

Keywords : neurologic music therapy, clinical neuroscience, music, music therapy

Count: 31
Abstract ID: 127
subject: Neural Injuries and Neurodegenerative Disorders: Neurotoxicity, Neuroprotection, Inflammation
Presentation Type: Oral

Sertoli Cells Avert Neuroinflammation-Induced Cell Death and Improve Motor Function and Striatal Atrophy in Rat Model of Huntington Disease

Submission Author: Hossein Ahmadi

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Background and Aim : Huntington's disease (HD) is a heritable disorder, genetically instigated by insertion mutation of huntingtin gene (Htt), linked with continuing cell loss and degeneration mostly in the striatum and neocortex (Bates et al. 2014; Leegwater-Kim and Cha 2004; MacDonald et al. 1993). Currently, cell therapy approaches in HD have essentially been focused on replenishing or shielding cells lost over the period of the disease (Clelland et al. 2008). Sertoli cells (SCs) as the nurturing cells are located within seminiferous tubules of the testis and provide an immunoprivileged milieu for the growing spermatogonia. SCs have been demonstrated to locally immunoprotect co-implanted cells (Shamekh et al. 2006; Korbutt et al. 1997; Sanberg et al. 1996; Suarez-Pinzon et al. 2000; Yang et al. 2002; Willing et al. 1999a), improve cell proliferation and neuronal induction (Shamekh et al. 2008; Hemendinger et al. 2005), and survive for prolonged periods of time once grafted (Dufour et al. 2008). Prior works have implemented isolated SCs for the remedy of diseases in animal models, namely diabetes and Parkinson's disease (PD) (Suarez-Pinzon et al. 2000; Willing et al. 1999a). Moreover, SCs are capable of secretion of plenty of immunoregulatory and trophic factors including Fas (CD95) ligand (FasL), transforming growth factors (TGF-α and TGF-β), interleukin 1α (IL-1α) and interleukin 6 (IL-6), platelet-derived growth factor (PDGF), and neurturin (NTN) (Piccirillo et al. 1998; Griswold 1993; Skinner 1993; Gnessi et al. 1995; French et al. 1996; Widenfalk et al. 1997; Cudicini et al. 1997; Sanberg et al. 1997b; O'Bryan et al. 2005). Regarding the central nervous system, SCs grafted into the brain and spinal cord could deliver compounds with trophic and anti-inflammatory effects on the neighboring environment.The current study was designed to investigate the in vitro and in vivo efficacy of primary rat SCs and their paracrine effect against oxidative stress with emphasis on HD.

Methods : SCs were isolated and immunophenotypically characterized by positive expression of GATA4. Besides, synthesis of neurotrophic factors of glial cell-derived neurotrophic factor and VEGF by SCs were proved. Next, PC12 cells were exposed to hydrogen peroxide in the presence of conditioned media (CM)

collected from SC (SC-CM) and cell viability and neuritogenesis were determined. Bilateral striatal implantation of SC in 3-nitropropionic acid (3-NP)-lesioned rat models was performed, and 1 month later, post-graft analysis was done

Results : According to our in vitro results, the CM of SC protected PC12 cells against oxidative stress and remarkably augmented cell viability and neurite outgrowth. Moreover, grafted SCs survived, exhibited decreases in both gliosis and inflammatory cytokine levels, and ameliorated motor coordination and muscle activity, together with an increase in striatal volume as well as in dendritic length of the striatum in HD rats

Conclusion : In conclusion, our results indicate that SCs provide a supportive environment, with potential therapeutic benefits aimed at HD.

Keywords : Transplantation ; Huntington; Striatum; Sertoli cells

Count: 32
Abstract ID: 184
subject: Neural Injuries and Neurodegenerative Disorders: Dementia
Presentation Type: Poster

Effects of Vanillic acid on hippocampal synaptic plasticity in male rats with Alzheimer's disease induced by β-amyloid

Submission Author: Nesa Ahmadi

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Background and Aim : Alzheimer's disease (AD) is a neurodegenerative disorder characterized by a progressive decline in cognitive function, due to the accumulation of beta-amyloid peptide (Aβ) in the extracellular space. Aβ stimulates the production of active oxygen species and thus leads to oxidative stress and cell death. Vanillic Acid (VA) has many properties such as suppressing apoptosis and removes the harmful effects of oxidative stress on synaptic plasticity. Therefore, in the present study, we examined the therapeutic effect of VA on Aβ-induced impairments in the hippocampal synaptic plasticity in AD model rats.

Methods : Our experiments were conducted on 40 male Wistar rats randomly assigned to 5 groups (n = 8): control, sham (intraventricular saline injections), AD (Aβ; intraventricular Aβ injections), VA treatment (50 mg/kg) and AD with VA treatment. Rats were injected with Aβ to induce AD, allowed to recover, and treated with VA for 4 weeks. The rats were then anesthetized with intraperitoneal injections of urethane and placed in a stereotaxic apparatus for surgery, electrode implantation, and field potential recording. In vivo electrophysiological recordings were then performed to measure population spike (PS) amplitude and excitatory postsynaptic potential (EPSP) slope in the hippocampal dentate gyrus. Long-term potentiation (LTP) was induced by high-frequency stimulation of the perforant pathway. Statistical significance was set at p≤0.05.

Results : Rats that received A? exhibited a significant decrease in their EPSP slope and PS amplitude as compared to the control group. In contrast, VA administration in the AD + VA rats reduced the increase in the EPSP slope and PS amplitude.

Conclusion : VA decreased the Aβ-induced synaptic plasticity impairments in AD rats. Therefore, these results suggest that VA, a natural antioxidant, can be therapeutic agent, against high risk factors for AD, such as oxidative stress.

Keywords : Vanillic acid, Alzheimer's disease, Rat, Synaptic plasticity, Long term potentiation.

Count: 33
Abstract ID: 387
subject: Neuropsychiatry and Psychology: Addiction (Drug, Alcohol, Internet, Food) and Gambling
Presentation Type: Oral

Repeated injections of morphine affect the gene expression of prodynorphin, mu-opioid and dopamine receptors in the prefrontal cortex in rat

Submission Author: Shamseddin Ahmadi

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Background and Aim : The prefrontal cortex is one of the main targets of the mesocorticolimbic dopaminergic system, which has an important role in reward related learning and addiction to the opioids. However, there are few studies examining the gene expression profile of the PFC under conditions of the repeated injections of morphine. We aimed to examine the expression of prodynorphin, mu-opioid receptors, and dopamine D1 and D5 receptors in the PFC after repeated administrations of morphine.

Methods : Two experimental male Wistar rats received a regimen of 8 days treatments of saline (1 ml/kg) or morphine (10 mg/kg) twice daily, and were examined for induction of morphine tolerance with a hotplate test on day 8 of the schedule. Then, the gene expressions of prodynorphin, mu-opioid receptor, and dopamine D1 and D5 receptors were evaluated by using a qPCR method. Student t-test was used to compare means of data. P<0.05 was used as the statistical significant level.

Results : The results of the hotplate test revealed that the repeated injections of morphine for 8 days induced morphine tolerance. The results of the gene expression indicated that the gene expression of prodynorphin, mu-opioid receptor, and dopamine D1 receptor but not dopamine D5 receptor were significantly increased in the PFC of the morphine tolerant group compared to the saline-treated group.

Conclusion : Morphine tolerance affects the gene expression of prodynorphin, mu-opioid receptors, and dopamine D1 receptors, which suggest that molecular mechanisms at the gene expression level in the PFC are involved in morphine addiction and tolerance.

Keywords : Morphine tolerance, Gene Expression, Mu-opioid receptor, Dopamine receptor, Prefrontal cortex

Count: 34
Abstract ID: 585
subject: Novel and Cutting-Edge Technologies: Brain Stimulation Methods   (ECT, rTMS, TDCS, DBS)
Presentation Type: Oral

Spatial memory recovery in Alzheimer's rat model by electromagnetic field exposure

Submission Author: Meysam Ahmadi zeidabadi

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Background and Aim : Although studies have shown a potential association between extremely low frequency electromagnetic fields (ELF-EMFs) exposure and Alzheimer's disease (AD), few studies have been conducted to investigate the effects of weak magnetic fields on brain functions such as cognitive functions in animal models. Therefore, this study aimed to investigate the effect of ELFEMF exposure (50 Hz, 10 mT) on spatial learning and memory changes in AD rats.

Methods : Amyloid-b (Ab) 1-42 was injected into lateral ventricle to establish an AD rat model. The rats were divided into six groups: Group I (control); Group II (surgical sham); Group III (AD) Alzheimer's rat model; Group IV (MF) rats exposed to ELF-MF for 14 consecutive days; Group V (Ab injection+M) rats exposed to magnetic field for 14 consecutive days from day 0 to 14 days after the Ab peptide injection; Group VI (AD+M) rats exposed to magnetic field for 14 consecutive days after 2 weeks of Ab peptide injection from 14th to 28th day . Morris water maze investigations were performed.

Results : AD rats showed a significant impairment in learning and memory compared to control rats. The results showed that ELF-MF improved the learning and memory impairments in Ab injection+M and AD+M groups.

Conclusion : Our results showed that application of ELF-MF not only has improving effect on different cognitive disorder signs of AD animals, but also disrupts the processes of AD rat model formation.

Keywords : Alzheimer's disease; learning and memory; extremely-lowfrequency electromagnetic fields (ELF-EMFs)

Count: 35
Abstract ID: 620
subject: Motor Systems
and Movement Disorders: Movement Disorders (Parkinson, Huntington's, ALS, Ataxia, edication-induced Movement Disorders)
Presentation Type: Poster

Medical therapy adherence and compliance in patients with Parkinson disease: a cross sectional study

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Background and Aim : Parkinson's disease (PD) is one of chronic progressive neurodegenerative diseases, also known as the only neurodegenerative disease with effective treatment. Effective control of disease progression through appropriate adherence to treatment has been significantly effective in reducing costs and increasing satisfaction of patients. Low compliance increases the risk of chronic diseases, the need for hospitalization and other health care or services, and imposes costs on individuals and the health system. The 8 item Morisky questionnaire has been translated into Persian and has been used to assess compliance of patients to drug therapy in previous studies. The aim of the study was assessing compliance in PD patients using Morisky scale.

Methods : Study cases were chosen among patients referring to neurology clinic of a tertiary medical center using convenient sampling method. The interview was performed after informed consent was obtained verbally from the patients. Data including demographic characteristics, duration of disease and prescribed medication was obtained using 8item Morisky questionnaire. We used SPSS version 23 for data analysis and determining variables affecting compliance.

Results : Data of 31 patients was analyzed. 58.1 % of them were men. 51 % were 56-75 years old. 61.3 % of participants had low educational level. 61.3 % have suffering Parkinson's disease for 1-6 years. Less than30 % of participants mentioned they miss taking the medication for various reason, feel bad about taking pills every day and giving up the prescribed drugs when they feel better. 89.7 % of them never or rarely forget taking all their pills. More than 80 percent of participants had proper compliance. More women mentioned desirable attitude toward medication adherence. Lower education did not negatively affect compliance. Prolonged disease and old age was related to less enthusiasm over recommended treatment.

Conclusion : Patient compliance and adherence to treatment affect disease control and long term complications. Being aware of this association and ensuring proper compliance of patients can lead physicians to a practice of better quality. Interventions for increasing treatment adherence and compliance mostly might be beneficial for elderly and low educated patients with PD.

Keywords : Parkinson disease; Adherence; Compliance; Morisky questionnaire

Count: 36
Abstract ID: 54
subject: Neurorehabilitation and Regeneration: Other
Presentation Type: Poster

Effect of lactate administration and physical exercise training on hippocampal neurogenesis in adult male rats

Submission Author: Zahra Akbari

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Background and Aim : Physical exercise has been known to promote cognitive function and neurogenesis in adult rat brain. Although precise underlying mechanisms are still unknown, systemic exercise-induced signals proposed to be involved. Recently, lactate has been considered as a signaling molecule within the brain tissue. We aimed to investigate the effect of exogenous lactate administration as a potential exercise mimetic on hippocampal neurogenesis.

Methods : Ault male Wistar rats were subjected to two weeks (5days/wk) of moderate-intensity exercise training consisted of treadmill running (15m/min, 60min/day) or daily injection of sodium-L-lactate (2gr/kg, IP). Sedentary animals used as the control group. Immunohistochemistry for doublecortin (DCX- a marker of developing immature neurons) and 5-bromo-2'-deoxyuridine (BrdU- a marker of proliferation) was performed to evaluate hippocampal neurogenesis.

Results : Immunohistochemical analysis revealed that compared to the sedentary control animals, treadmill exercise training increases remarkably the number of BrdU- and DCX-positive cells in dentate gyrus of hippocampus. Administration of exogenous lactate increases immunoreactivity to DCX in compare to control sedentary group; however, BrdU immunoreativity remained unaffected in lactate group.

Conclusion : Our results highlighted the possible role of systemic lactate as a mediator of exercise training effect on hippocampal neurogenesis. Future experimental investigation using lactate receptor blockade are warranted.

Keywords : Lactate, Physical exercise, Neurogenesis, Hippocampus

Count: 37
Abstract ID: 617
subject: Neurorehabilitation and Regeneration: Occupational Therapy
Presentation Type: Poster

Prosopagnosia: Introduction and review on evaluation methods, therapies and recent researches

Submission Author: ZEINAB AKBARI

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Background and Aim : The face has a complex, three dimensional structure with some degree of motion.all faces are similar in some ways and this poses a challenge for the perception system. The human brain has a great ability to recognize faces, however some people are not able to recognize the face and they recognize other features like the sound of people. This type of perceptual disorder is called prosopagnosia. According to studies, prosopagnosia caused by damage to the right hemisphere, especialiy the posterior part. And the affected ares include ventral occipitotemporal,fusiform cortex and the anterior temporal cortex. Prosopagnosia can limit peoples lives and craet stressfull condition in their social and work environment. This manuscript intends to review the diagnostic,therapeutic methods and articles of the last ten years about this disorder.

Methods : Search engines google scholar, pubmed and proquest were used. Articles are selected among which published from 2010 up to now.

Results : For the purpose of the study, the keywords of the cognitive impairment and prosopagnosia were searched individually or in combination with the vocabulary of treatment, rehabilitation, occupational therapy and psychology.

Conclusion : Understanding the symptoms of prosopagnosia and its evaluation methods enables therapists for early diagnosis, not only to avoid inappropriate labeling but also to inform the patient and those around him and initiate interventions as soon as possible. Using formal and informal test to diagnose Disorder and then providing adaptive and remedial therapies can reduce stress and increase the ability of sufferers.

Keywords : prosopagnosia,evaluation,neuroanatomy,therapeutic,rehabilitation

Count: 38
Abstract ID: 217
subject: Special topics: Converging Technologies   (NBIC: Nano-Biotech-Information-Cognitive), euroscience and Nanotechnology, Neuroscience and Biotechnology, Neural Tissue Engineering
Presentation Type: Poster

Extremely low frequency electromagnetic field increase cytotoxicity of temozolomide in glioma cells but not in primary cortical astrocytes

Submission Author: Zeinab Akbarnejad

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Background and Aim : Glioblastoma multiforme (GBM) are the most common primary neoplasm tumors arising within the central nervous system (CNS) and are usually incurable. Despite all the current treatments (radiotherapy, neurosurgical resection, and chemotherapy), the patient survival remains poor. Temozolomide (TMZ) is an alkylating agent that has been widely used in the treatment of GBM; however, resistance to this drug is very common. Researches have shown that Extremely low frequency electromagnetic field (ELF-EMF) has effects on cancer cells and drug action. Many authors have shown the synergistic effects of ELF-EMF in combination with chemotherapeutic agents for cancer. The aim of this study was to evaluate ELF-EMF and the temozolomide (TMZ) effect in cell viability, apoptosis in u87 human glioma cells, as well as in primary culture of cortical astrocytes viability.

Methods : U87 glioma cells and primary cortical astrocytes were cultured. After 24h, the cells were treated with TMZ for 120 and144 hours. Viability analysis was performed through reduction MTT assay. Apoptosis occurrence was evaluated through Propidium iodide (PI) and Annexin V staining.

Results : TMZ (100 µM) treatment did not change astrocytic viability. In U87 cells, TMZ 100 µM reduced cell viability. TMZ and ELF-EMF association did not effect in cell viability in primary astrosyte but the co-treatment reduced viability at 120 and 144h in U87 cells. ELF-EMF, TMZ and both association increased apoptosis

Conclusion : In this way, our results show the ELF-EMF cytotoxic effect in glioma cells but not in astrocytes, suggesting that glioma cells are more susceptive to ELF-EMF toxicity than astrocytes. Even, the ELF-EMF plus TMZ effect in cell death may indicate these drugs association as a new potential therapeutic option in glioma treatments

Keywords : Electromagnetic field; Temozolomide; glioblastoma;primary cortical astrocytes

Count: 39
Abstract ID: 297
subject: Development: Neurogenesis and Gliogenesis
Presentation Type: Oral

Dscam Switches Slit Repulsion To Mild Attraction Via Robo Receptors

Submission Author: Maryam Alavi

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Background and Aim : Axon guidance is a critical part of neural development, the process that generates and shapes the nervous system, from the earliest stages of embryogenesis to the last years of life. Axons navigate to reach their correct targets via different axon guidance cues, such as Netrins and Slits. The axonal growth cone contains receptors that distinguish these guidance molecules and translates them into attractive or repulsive responses. Slit repels axons from the CNS midline by binding to the Robo (Roundabout) receptor. Netrin acts as an attractant through fra/DCC/Unc-40 and Dscam (Down syndrome cell adhesion molecule) receptors. However, genetic evidence shows that Dscam also responds to other ligand(s).

Methods : In vivo, slit-FL and slit-N transgenes have differential effects on motor neuron innervation of muslces that are mediated by Dscam. Overexpression of slit-FL and slit-N at the CNS midline in a robo mutant background leads to an increase in axon attraction to the midline. We interpret this result as evidence that Slit has an attractive as well as a repulsive function. To test the hypothesis that Dscam can act as an attractive receptor for Slit, we employed a range of slit transgenes to analyze attractive functions of slit in axon guidance. Our data argues that Slit needs to be processed to act as an axonal attractant in vivo. We examined the consequence of removing the Robo binding domain (LRR2) from Slit in vivo, hoping to observe the attractive function masked by Slit's repulsive activity. Instead, the transgene appears only to inhibit Dscam activity, supporting a model that Dscam requires Robo as a co-receptor.

Results : We have identified Slit as an additional ligand for Dscam using both cell overlay and immunoprecipitation assays. Our results show that the Dscam only binds to the Slit N-terminal fragment (Slit-N), in a domain distinct from the Robo binding site. I have demonstrated that Robo preferentially binds full length Slit (Slit-FL), but in the presence of Dscam binds Slit-N. We believe that this Slit-N dependent Dscam-Robo complex modifies Robo signaling.

Conclusion : Our data shows that Dscam binds to proteolytically processed Slit and converts repulsion to mild attraction in the presence of Robo receptors. Our work also indicates that, as seen for other ligands, Slit can act as both an attractant and repellent via distinct receptors, and indicates how the complexity of the nervous system can arise through a relatively small number of ligands.

Keywords : Central Nervous System; Chemoattractant axon guidance; pioneer axons; Axon regeneration

Count: 40
Abstract ID: 446
subject: Cognition: Working Memory
Presentation Type: Poster

Investigation of "Origanum Vulgare L." leaf extract on ethanol-induced impairment of working memory on male rat

Submission Author: Maryam Aliabadi

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Background and Aim : The aim of this study was to investigate the effects of different doses of hydroalcoholic extract of Origanum vulgare L. leaf on ethanol-induced impairment of working memory on male rat. The hippocampus plays a central role in the learning and memory processes.

Methods : In this study, 56 male Wistar rats were divided into 8 groups of 7. Rats were treated with 100, 200, 300 mg/kg doses of the plant extract, ethanol, and saline for 20 consecutive days. After completing the treatment period and undergoing food deprivation and training period, the number of working memory and reference memory errors was calculated using radial arm maze test based on DSWD protocol.

Results : Observations showed that the ethanol group had the highest number of working and reference memory errors, whereas this number decreased in the rat treated with ethanol and the plant extract. Rat treated with Origanum vulgare L. extract (300mg/kg) and saline showed the lowest number of errors. The results indicate that ethanol affects the hippocampus by increasing oxidative stress causing impairment of working and reference memory. Ethanol also damages hippocampal pyramidal cells.

Conclusion : The results of this study showed that extract of Origanum vulgare with its antioxidant effect improves working and reference memory impairment.

Keywords : Origanum vulgare L., Ethanol, Hippocampus, Working memory, Rat

Count: 41
Abstract ID: 504
subject: Epilepsy, Neural Excitability, Synapses, and Glia: Seizure and Epileptic Disorders
Presentation Type: Poster

Psychiatric Comorbidities in Epileptic Patients: The Role of Age, Gender and Duration of Epilepsy in North of Iran

Submission Author: Shayan Alijanpour

Shayan Alijanpour[1]

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Background and Aim : Psychiatric disorders in epileptic patients have important role on the clinical approach and therapeutic options that often neglected and treated poorly. The present study aimed to determine the role of psychiatric comorbidity in epileptic patients of Babol, north of Iran.

Methods : This descriptive-analytical study was performed in 2017 with a simple random sampling method on patients with epilepsy who admitted to the neurology department of Ayatollah Rouhani hospital of Babol. The demographic checklist and SCL90 questionnaire were used. The Chi-square, T-test, Mann-Whitney, Pearson correlation coefficient and test-retest were used in SPSS V18 and $P<0.05$ was considered as statistically significant.

Results : Of the 150 patients examined, 88 (58.7%) were female and 63(42%) had epilepsy more than 10 years. The most common psychiatric disorder among epileptic patients was depression in 68 (45.3%) and anxiety in 65 (43.3%) patients. Also, the lowest prevalence was related to paranoid ideation and psychotic disorders. There was a significant relationship between age with somatic disorders ($P=0.02$) and phobia ($P=0.01$).

Conclusion : Anxiety and depression were the most common symptoms in epileptic patients. With increasing age, the frequency of somatic disorders and phobias was significantly increased.

Keywords : Comorbidity, Epilepsy, Seizure, Psychiatry, Anxiety

Count: 42
Abstract ID: 505
subject: Epilepsy, Neural Excitability, Synapses, and Glia: Seizure and Epileptic Disorders
Presentation Type: Oral

Epilepsy and Associated Factors in Elderly People of Amirkola, North of Iran(The Amirkola Health and Ageing Project)

Submission Author: Shayan Alijanpour

Shayan Alijanpour[1]

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Background and Aim : Epilepsy is a common neurological condition with severe personal, familial and societal impact. Little is known about the associated factor with epilepsy in the elderly in North of Iran. Therefore, the goal of this study was to determine the prevalence of epilepsy and associated factors in Amirkola elderly patients.

Methods : This cross-sectional study, is a part of a comprehensive and cohort research of "Amirkola Health and Ageing Project". The Mini Mental State Examination (MMSE) used for Cognitive impairment, Geriatric Depression Scale (GDS) for psychiatric diseases and Physical Activity Scale for Elderly (PASE) questioner for physical activity. All data were analyzed using chi-square test and logistic regression in SPSS v23 software.

Results : The prevalence of epilepsy was 35 from 1482 participants (24/1000). The significant association between Parkinson's Disease (OR=6.25, 95%CI=1.35-28.4, p= 0.001), falls (OR= 3.81, 95%CI=1.62-8.97, p=0.001), depression (p=0.001), hyperphosphatemia (p=0.039) and hypokalaemia (p= 0.031) concluded with epilepsy. Past history of stroke (6 % versus 2%, OR= 2.8, 95%CI, 0.97-8.27, p=0.07).and increased serum level of triglyceride (OR= 1.96, 95%CI= 0.99-3.88,p=0.06) and low density lipoprotein (LDL) (p = 0. 45) were seen in epileptic client in compare to not epileptics clients.

Conclusion : Parkinson's Disease, frequency of fall and depression were the associated factor in epileptic patients and correlation of past history of stroke, increased serum level of triglyceride and LDL with epilepsy were seen. Associated factors required to screening, diagnosis and treatment.

Keywords : elderly, epilepsy, Parkinson disease, Iran

Count: 43
Abstract ID: 651
subject: Motor Systems
and Movement Disorders: Movement Disorders (Parkinson, Huntington's, ALS, Ataxia, edication-induced Movement Disorders)
Presentation Type: Poster

Non-Motor Symptoms in Patients with Parkinson's disease in Babol, North of Iran

Submission Author: Shayan Alijanpour

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Background and Aim : Non-motor symptoms(NMS) are common in Parkinson's disease. It can be predominant as the disease advances, thereby constituting a major source of disease burden for patients. Current study was conducted to determine the prevalence of these symptoms in the north of Iran.
Methods : This cross-sectional study was performed on 109 patients with Parkinson's disease in Ayatollah Rouhani Hospital in Babol, North of Iran, during 2017-2018. NMS were obtained from a NMS standard questionnaire containing 30 questions plus the clinical and demographic information in a separate checklist of patients. NMS were then classified into nine distinct categories. The association of NMS with clinical and demographic variables was evaluated by the SPSS software version 23. In all cases, the significance level of the tests was less than 0.05.
Results : The mean age of the patients was 70.59 ± 9.69 years (46-97 years) and 61 (56%) were male. The duration of the disease was 5.61 ± 4.89 years. NMS associated with sleep / fatigue with the prevalence of 76.1% were the most prevalent symptoms. NMS related to mood / cognition with frequency of 65.1%, cardiovascular with 51.4% and miscellaneous with 51.4% frequency were the most commonly reported symptoms in patients. Severity of the disease was significantly correlated with the symptoms of the cardiovascular, attention / memory and GI tract (P=0.001). Age and education of the patients with cardiovascular symptoms and attention / memory had a significant relationship (P<0.05). Occupation and marriage of the patients were significant with attention/memory symptoms (P<0.05).
Conclusion : The sleep-related symptoms and fatigue were the most common NMSs in Parkinson's patients. Also, the severity of the disease and ageing were statistically significant with the prevalence of the NMS in patients. Therefore, consideration should be given to older patients suffering from more severe Parkinson's disease.
Keywords : Parkinson's disease, non-motor symptoms, severity of disease, duration of disease, Priority sign

Count: 44
Abstract ID: 328
subject: Neuropsychiatry and Psychology: Cognitive Disorders
Presentation Type: Oral

Adapted MMSE and TYM cognitive tests: how much powerful in screening for Alzheimer's disease in Iranian people.

Submission Author: Azam Alinaghipour

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Background and Aim : Alzheimer's disease (AD) is a major global health priority and providing an efficient way for early diagnosis of people developing dementia is important. The Mini-Mental State Examination (MMSE, total score = 30) and Test Your Memory (TYM, total score = 50) are widely used as screening tests for cognitive function.

Methods : In the present study 174 subjects including healthy people (CON group) and those having Alzheimer's disease (AD group) were introduced to MMSE and TYM cognitive tests adjusted to Iranian population. Sensitivities and specificities with optimal cut-off scores, area under curve (AUC), positive predictive value (PPV) and negative predictive value (NPV) were measured for both tests.

Results : The MMSE scores of the CON and AD groups were 23.77 ± 0.327 and 10.88 ± 0.762, respectively. The TYM scores were 44.32 ± 0.389 and 14.37 ± 1.368 in the CON and AD participants, respectively. Findings in the MMSE test were: AUC = 0.962, optimal cut-off score = 18.5, sensitivity = 0.90 and specificity = 0.96. Values in the TYM test were: AUC = 0.991, optimal cut-off score = 31, sensitivity = 0.90 and specificity = 1. We found no correlation between the cognitive performance and age in the CON group but a positive correlation in the AD patients. On the other hand, t-test analysis indicated that achievement of the test scores are significantly sex dependent, with more scores attained by the females.

Conclusion : Taken together, in regard to correct classification rate (CCR); the TYM test seems to be more appropriate for cognitive screening in our study. However, considering an analogous AUC, both tests are comparable and have high sensitivity and specificity for discriminating between people with and without AD.

Keywords : Alzheimer's disease; MMSE; TYM; dementia

Oral & Poster Presentations

8th Basic and Clinical Neuroscience Congress
December 18-20, 2019
Razi Hall, Tehran, Iran

Iran University of Medical Sciences

Iranian Neuroscience Society

Count: 45
Abstract ID: 263
subject: Neuropsychiatry and Psychology: Evidence-Based Psychology
Presentation Type: Poster

The Effectiveness of Self-help Skills Training Program to Children with Intellectual Disability on Mental Health of their Mothers.

Submission Author: Zahra Alinejad

Zahra Alinejad[1], Mahdi Davaee Ph.D.[2], Leila Kashani Vahid Ph.D.[3]

1. ISLAMIC AZAD UNIVERSITY SCIENCE AND RESEARCH BRANCH
2. Thesis Advisor
3. Consulting Advisor

Background and Aim : The aim of this research was to study the effects of self-help skills training program on social skills of children with intellectual disability on mental health of their mothers. The papulation of this research were children with intellectual disability and their mothers in Tehran, who were referred to rehabilitation centers. The sample consisted of 20 trainable children with intellectual disability and their mothers, who were selected and assigned randomly into the experimental and control groups. The experimental group experienced a 20 self-help skills training sessions for 30 minutes

Methods : The instruments of this research were Symptom Check List SCL– 90 (Droghatt, Rickels, & Rock, 1976) which was used in the pre-test and post-test stages. The obtained data was analyzed using Analysis of Covariance

Results : The research findings showed that training program of self-help skills was effective for improving mental health of mothers of children with intellectual disability.

Conclusion : The research findings showed that training program of self-help skills was effective for improving mental health of mothers of children with intellectual disability.

Keywords : self-help training, mental health, children with intellectual disability.

Count: 46
Abstract ID: 137
subject: Neural Injuries and Neurodegenerative Disorders: Traumatic Brain Injury
Presentation Type: Poster

The Nobiletin neuroprotective effects on the neurological scores, blood brain barrier permeability and brain edema after severe traumatic brain injury in male rat: A behavioral, Biochemical study

Submission Author: Vahid Alivirdiloo

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Background and Aim : Traumatic brain injury (TBI) is one of the major causes of mortality and neurological disability. TBI has been classified into primary injury and secondary injury, and the latter plays a crucial role in the clinical outcome of patients with TBI. Nobiletin is a flavonoid that present in the peels of citrus fruits. Nobiletin possesses several bioactive properties activities as antioxidant, anti-inflammatory, neuroprotective, and anti-proliferative properties. Therefore, in this study, we investigated the effects of neuroprotective Nobiletin after severe traumatic brain injury in male rats

Methods : The male Albino wistar rats received different doses of nobiletin (25, 50, 100 mg/kg, i.p.). All animals were intubated before surgery. In the TBI groups except sham and intact control groups, diffuse TBI was induced by Marmarou method using a TBI induction device. The severe TBI was induced using a weight 450 gr. The neurologic scores (VCS) and brain water content, the beam-walk –balance task (WB) and BBB integrity (Evans blue) were recorded for D1, D2 and D3 after TBI day. At the end of the third day, from cisterna magna deep anaesthetized animals CSF was collected fixed in Liquid nitrogen for analysis IL-1β and IL-10 with Elisa assay.

Results : Our results showed a significant reduction in brain water content , blood brain barrier permeability and beam balance, and a significant increase in VCS and beam walk of treatment groups as dose response manner in compared to vehicle and TBI control groups (P<0.001). Nobiletin in two dose (25 and 50 mg/kg) improved neurology, biochemical disorder but in 100 mg/kg dose results did not significant in compare with TBI-saline control groups (P>0.05).

Conclusion : These findings showed that nobiletin may implicate a critical role in promoting inflammation and aggravating damage after TBI. Post TBI administration nobiletin revealed significant improvement in biochemical and neurological outcomes in experimental TBI. The underlying mechanism(s) was not determined and needs further investigation

Keywords : Nobiletin, TBI, neuroprotection, anti-inflammation, rat

Count: 47
Abstract ID: 163
subject: Computational Neuroscience: Modeling and Simulation
Presentation Type: Oral

Effect of proximity to high-voltage fields: results of the neural network model and experimental model with macaques

Submission Author: Hamed Aliyari

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Background and Aim : An important biological hazard that is caused by the placement of power transmission lines in the vicinity of cities and villages is the computation of the magnetic and electric fields around these lines. Therefore, the present research objective was to study the effect of high-voltage fields on the effect of the neural network model on the brain and to compare the results of this model with the results of behavioral and biological analyses of primates

Methods : In this research, two adult male macaques were selected for the experiments. Prior to inclusion in the research, the primates were exposed to behavioral tests, hormonal assays (melatonin and cortisol), and MRI-assisted brain anatomy analyses using special kits. The monkey in the experimental group was exposed to a 3 kV/m high-voltage field for 4 h a day for a month, after applying electric field simulations. In addition, the behavioral elements of the primates in the experimental and control groups were analyzed during the treatment. Computation models were used in this research, and the results were compared to experimental data.

Results : during the treatment. Computation models were used in this research, and the results were compared to experimental data. Behavioral elements manifested in the form of changes such as reduced activity, isolation, reduced appetite, and sleep disorders during applying electric field simulations of the monkey that was exposed to the high-voltage field

Conclusion : Based on the results of the simulation model and the variations of the behavioral, hormonal, and anatomical elements, the decrease in the activity of the brain cortex, sleep disorders, and isolation were indicative of depression in the monkey exposed to the high-voltage field.

Keywords : High-voltage field · Depression · Melatonin · MRI · Cortisol · Spiking neural network model · Monkey

Count: 48
Abstract ID: 260
subject: Cognition: Executive Function (Decision Making, Reasoning, Problem Solving)
Presentation Type: Poster

A review on the effects of subliminal messages on mental aspects of human life

Submission Author: Bi Bi Marzieh Amadi

Bi Bi Marzieh Amadi [1]

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Background and Aim : The aim of the present review article is to investigate the effects of subliminal messages on the mind. Subliminal instructional messages are aural, symbolic, and textual messages. People cannot perceive nor reply to stimuli via usual ourticular, visual, and audiovisual physiological pathways. Even the action mechanisms of subliminal messages differ from ordinary visual and auditory messages. The ordinary visual system functions by higher/complex cognitive control mechanisms in comparison with the mechanisms of subliminal messages. However, either the consciences or unconscious perception are recognized through attentional sensitization The subliminal messages affects people's minds and behaviors "An unconscious signal may be received for as little as 500 microseconds . Masked stimuli become visible when presented for longer than a few 10s of milliseconds. So far, many studies have focused on the effects of subliminal messages on human behavior and how it can be detected/recognized. . In this review we investigate the effects of subliminal messages such as action, behavior, motivation, and other functions of the mind. Despite the ongoing studies on the effects of subliminal messages, there are still some doubts about subliminal messages that require clarifications. We also still need more precise tools that could help detect and generate unconscious messages.

Methods : Different research strategies (subliminal messages and effects, effect subliminal message and subliminal message) were used to surf google scholar, scopuse, science direct and PubMed databases from 1957 to 2018 year. Inclusion Criteria were available full-text and abstract English language. The article was repeated in different data bases, not releated the topic according to their title and abstracts were excluded.

Results : 115 article were found according to our exclusion criteria, 25 articles were selected for this review.

Conclusion : Subliminal messages have significant effects on the human minds. Therefore it hase the potential to change people's decision making in their different situations of their life. In conclusion subliminal messages can be used in education, cultural and economic issues. Also, it has the potential to control individual's mind.

Keywords : subliminal message, decision making, econemic, mind

Count: 49

Abstract ID: 444

subject: Novel and Cutting-Edge Technologies: Drug Discovery and Neuropharmacology

Presentation Type: Poster

Involvement of endocannabinoid system, inflammation and apoptosis in diabetes induced liver injury: role of 5-HT3 receptor antagonist

Submission Author: Farzaneh Amini

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Background and Aim : Confident relationships between diabetes and liver damage have previously been established. This study was designed to evaluate hepatic inflammation, apoptosis and endocannabinoid system alterations in diabetes with or without tropisetron treatment.

Methods : Rats were assigned to 5 equal groups; Control, Tropisetron, Diabetes, Tropisetron+Diabetes, and Glibenclamide+Diabetes (n=7 each group). Rats treated with tropisetron (3mg/kg) and glibenclamide (1mg/kg) for two weeks after type 1 diabetes induction.

Results : Inflammatory cytokines Tumor necrosis factor alpha and Interleukin 6 (TNF-? and IL-6), apoptotic cells and fatty acid amide hydrolase (FAAH) enzyme expression increased, while the expression of Cannabinoid Receptor 1 (CB1) reduced in the diabetic liver compared to control. Treatment with tropisetron reversed the inflammatory markers, apoptotic index and endocannabinoid system components. These effects were equipotent with glibenclamide, indicating that tropisetron can protect liver tissue against diabetic disturbances.

Conclusion : These findings strongly support the idea that diabetes-induced liver abnormality is mediated by inflammatory reactions, apoptosis, and endocannabinoid system, and that these effects can be alleviated by using tropisetron as an antioxidant and anti-inflammatory agent.

Keywords : Diabetes, liver Injury, 5HT3 receptor, endocannabinoid system, inflammation, apoptosis, metabolic diseases

Iran University of Medical Sciences

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Count: 50
Abstract ID: 447
subject: Emotion, Motivation and Behavior: Biological Rhythm and Sleep
Presentation Type: Poster

The impact of sleep deprivation on sexual behaviors and FAAH expression in the prefrontal cortex of male rats

Submission Author: Mohammad Amini

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Background and Aim : Sleep deprivation (SD) causes alterations in the function of the endocannabinoid (EC) system and also alters sexual behavior. Controversial data about the effects of SD on sexual response are provided. Fatty acid amide hydrolase (FAAH), the enzymes involved in the degradation of EC system play an important role in the function of the EC system.

Methods : Sleep deprivation (SD) causes alterations in the function of the endocannabinoid (EC) system and also alters sexual behavior. Controversial data about the effects of SD on sexual response are provided. Fatty acid amide hydrolase (FAAH), the enzymes involved in the degradation of EC system play an important role in the function of the EC system.

Results : Sexual behaviors were reduced by both types of RSD and TSD. The deleterious effects of 24h RSD were more severe compared with 6h of TSD. Serum testosterone concentration was significantly higher after TSD but not RSD compared to the normal sleep (NS) group. FAAH expression in the PFC was significantly reduced after both RSD and TSD compared to the NS group.

Conclusion : Given that the function of the EC system has been previously shown to change different behaviors such as sexual activity, our results could suggest that behavioral effects of both types of SD on sexual behavior may partially result from activation of this signaling pathway by the reduction of FAAH in the PFC.

Keywords : Sleep deprivation, sexual behaviors, FAAH, prefrontal cortex, EC system

Count: 51
Abstract ID: 545
subject: Cognition: Learning and Memory
Presentation Type: Poster

Study the effects of sesame oil on high-fat diet induced memory impairment and anxiety in male rats using behavioral models

Submission Author: Parsa Amiri

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Background and Aim : Consumption of high-fat diets is a pervasive threat to most communities that can affect the learning capacity of the brain, resulting in memory impairment and anxiety through oxidative stress and inflammation. As a potent antioxidant, similar to vitamin E and vitamin C, sesame oil (SO) has potential antioxidant properties, which can eliminate free radicals. In this study, the effect of SO on high-fat diet-induced memory impairment and anxiety in male Wistar rats was investigated.

Methods : 80 Adult male Wistar rats, weighing from 200 g to 250 g, were divided into 8 groups (n=10 rats/group): 1- Control group, which was fed a standard diet (SD). 2- High-fat diet (HFD) group. 3- SD+0.5 ml/kg daily administration of SO. 4- SD+1 daily administration SO. 5- SD+2 ml/kg daily administration of SO. 6- HFD+0.5 ml/kg daily administration of SO. 7- HFD+1 ml/kg daily administration SO. 8- HFD+2 ml/kg daily administration of SO. SO was administered orally through gavage once a day. The experimental groups received their respective diets for 3 months. Finally, behavioral studies were undertaken, and associated oxidative stress was measured.

Results : The passive avoidance learning test determined that STLr in the S-D+0.5 ml/kg SO and S-D+1 ml/kg SO groups increased significantly compared to the control group. The novel object test showed no significant difference between the experimental groups. The analysis of the time spent in the target quadrant (probe) of the morris water maze test revealed no significant difference between groups within the test day. The results of the Barnes test showed that the elapsed time to find the target hole has increased in the HFD group compared to the control group. In the elevated plus-maze test, the time spent in the open arms increased in the SD+0.5 ml/kg SO group compared to the control group. The oxidative stress test showed no significant difference in the malondialdehyde (MDA) levels; however, the total oxidant status (TOS), total antioxidant capacity (TAC), and THIOL levels were significant. TOS and TAC levels in the HFD group were higher and lower than the control group, respectively. TOS levels in the HFD+0.5 ml/kg SO, HFD+1 ml/kg SO, and HFD+2 ml/kg SO groups were lower than the HFD group. TAC levels in the S-D+2 ml/kg SO group was higher than the S-D+0.5 ml/kg SO group. In both SD+SO groups and HFD groups, thiol levels were decreased compared to the control group.

Conclusion : The data suggest that SO could enhance memory, while HFD disrupts learning. Also, SO could reduce the anxiety in the SD groups compare to the control group. Although HFD induces oxidative stress through TOS elevation and TAC reduction, SO could attenuate these adverse effects significantly.

Positive effects of SO on memory and anxiety, probably result from high antioxidant properties and free radical scavenging.

Keywords : Memory; Learning; anxiety; Oxidative stress; Sesame oil; High-fat diet; Rat

Count: 52
Abstract ID: 395
subject: Development: Neurogenesis and Gliogenesis
Presentation Type: Poster

Hanging drop culture enhances differentiation of human adipose-derived stem cells into anterior neuroectodermal cells using small molecules

Submission Author: Noushin Amirpour

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Background and Aim : Inspired by in vivo developmental process, several studies were conducted to design a protocol for differentiating of mesenchymal stem cells into neural cells in vitro. Human adipose-derived stem cells (hADSCs)as mesenchymal stem cells are a promising source for this purpose.

Methods : At current study, we applied a defined neural induction medium by using small molecules for direct differentiation of hADSCs into anterior neuroectodermal cells. Anterior neuroectodermal differentiation of hADSCs was performed by hanging drop and monolayer protocols. At these methods, three small molecules were used to suppress the BMP, Nodal, and Wnt signaling pathways in order to obtain anterior neuroectodermal (eye field) cells from hADSCs. After two and three weeks of induction, the differentiated cells with neural morphology expressed anterior neuroectodermal markers such as OTX2, SIX3, -TUB III and PAX6.

Results : The protein expression of such markers was confirmed by real time, RT-PCR and immunocytochemistry methods According to our data, it seems that the hanging drop method is a proper approach for neuroectodermal induction of hADSCs.

Conclusion : Considering wide availability and immunosuppressive properties of hADSCs, these cells may open a way for autologous cell therapy of neurodegenerative disorders.

Keywords : Hanging drop, hADSCs, Neuroectodermal cells, Differentiation

Count: 53
Abstract ID: 193
subject: Emotion, Motivation
and Behavior: Reward and the Brain
Presentation Type: Poster

Microinjections of GABA(B) receptor antagonist into the lateral habenula suppress the acquisition and expression of conditioned place preference induced by morphine in rats

Submission Author: ELAHE AMOHASHEMI

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Background and Aim : The habenula divided into lateral and medial regions. The lateral habenula (LHb) plays an important role in the reward circuit. LHb neurons are predominantly glutamatergic and convey negative reward information to the ventral tegmental area (VTA) dopaminergic neurons through an intermediary structure, GABAergic rostromedial tegmental nucleus (RMTg). In the recent study, effects of bilateral injection of GABAB receptor antagonist into the LHb on the acquisition and expression of morphine-induced conditioned place preference(CPP) in male rats have been studied

Methods : In this study using adult male Wistar rats as subjects and were divided into groups (n = 6). We investigated the influence of microinjection of GABAB receptor antagonist, phaclofen (0.5–2 μg/rat) into the LHb with ineffective and effective dose of morphine (0.5 and 5 mg/kg, respectively) on acquisition and expression of CPP induced by morphine in male rats.

Results : Subcutaneous injection of different doses of morphine sulphate (0.5–7.5mg/kg) induced a dose-dependent CPP. Using a 3-day schedule of conditioning, we found that microinjection of phaclofen (0.5–2 μg/rat) into the LHb decreased the acquisition and expression of CPP induced by morphine that this indicates defects in the learning and memory formation with a significant place aversion.

Conclusion : Our data indicated that the GABAB receptors of the LHb may play an active role in the acquisition and expression of morphine-induced CPP

Keywords : morphine,cpp,phaclofen,lateral habenula,VTA

Count: 54
Abstract ID: 439
subject: Emotion, Motivation and Behavior: Stress and the Brain (Stress-modulated Pathways, Stress and Cognition, Stress Related Disorders)
Presentation Type: Poster

Protective effects of Zataria multiflora against anxiety and depression behaviors induced by lipopolysaccharide in rats

Submission Author: Zohreh Arab

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Background and Aim : Stressors have an important role in sickness behaviors. We checked the effect of Zataria multiflora (ZM) extract against lipopolysaccharide (LPS)-induced anxiety and depression behaviors in rats.

Methods : Rats were distributed in the following groups (n=10): Control, LPS (1 mg/kg), LPS-ZM50, LPS-ZM100 and LPS-ZM200. LPS was syringed intraperitoneally (ip) 2 hr before performing behavioral tests. LPS-ZM groups were treated with 50, 100 and 200 mg/kg (ip) of ZM extract 30 min before LPS administration. Open field (OF), elevated plus maze (EPM) and forced swimming (FS) tests were done. White blood cell (WBC) was counted in all groups.

Results : In OF, pretreatment with ZM extract augmented the number of lines crossed and traveled distance in central and peripheral areas. The rats treated with ZM extract spent more time in the central zone and less time in the peripheral area compared to the LPS group. In EPM, the number of entries into the open and closed arms and stop time in the open arms in LPS-ZM groups were higher than the LPS group. The stop time in the closed arms of ZMLPS groups was less than the LPS group. In FS test, swimming and climbing time in groups treated with ZM extract was more than the LPS group while their immobility time was less. WBC count in the LPS-ZM100 and LPS-ZM200 was lower than that of the LPS group.

Conclusion : Based on the results, pretreatment with ZM extract restituted anxiety and depression caused by LPS in rats. This effect of ZM was associated with amelioration of LPS-promoted inflammation.

Keywords : Zataria multiflora, Lipopolysaccharide, Anxiety, Depression

Count: 55
Abstract ID: 658
subject: Neuropsychiatry and Psychology: Other
Presentation Type: Poster

Survey Of Mental Health In Nurses Working In Public Hospitals In Tehran

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Background and Aim : Introduction: Mental health disorders are a common problem among health care workers, especially nurses, and can cause many problems. This study was conducted to investigate the mental health of nurses.

Methods : Methods: In this study, validated scientific articles indexed in ISI, PubMed, Scopus, Sid, Magiran databases were searched using keywords (Hospital, Nurses, Mental Health). The time range from 2012 to 2018 was considered for selecting articles. The articles were found in about 123 articles, of which about 68 were entered into the study and then 42 the articles were reviewed for title, abstract and full text.

Results : Results: The mean age of the nurses was 33.90 ± 7.29 years. 85.1% were married, 68.1% were female and 59.6% were employed in public hospitals in Tehran. 30.2% of nursing staff had mental health and 69.8% had mental health problems. Concerning the mental health of nurses and their dimensions, the findings of this study showed that physical dimension had the highest mean (13.35 with standard deviation of 4.94) and depression had the lowest mean (9.27 with standard deviation of 3.67).

Conclusion : Conclusion: The results showed that a considerable amount of nurses do not have good mental health, especially those in psychiatric ward and those with overtime, had less mental health. Female nurses were also more at risk of mental disorders than male nurses. Therefore, further studies are recommended to investigate the factors affecting the mental health of nurses and the necessary measures for prevention and treatment of mental disorders in nurses.

Keywords : Hospital, Nurses, Mental Health

Count: 56
Abstract ID: 203
subject: Neural Injuries and Neurodegenerative Disorders: Dementia
Presentation Type: Poster

Whether Coenzyme Q10 modulates cognitive function, synaptic plasticity, learning, and memory impairment in elderly rats that received intracerebroventricular Aβ (Special attention to aging)

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Background and Aim : Alzheimer's disease (AD) is the most common cause of dementia and a great socioeconomic burden in the aging society. Considering that the primary risk factor for AD is old age, the prevalence of AD is increasing because of an increase in aging populations globally. Although the exact pathophysiology is still unknown, Molecular mechanisms of AD are converging on the notion mitochondrial dysfunction, oxidative stress, neuroinflammation, and accumulation of amyloid β (Aβ). Cognitive and memory deficits are common in older adults, interestingly; the concentration of Coenzyme Q10 (CoQ10) is decreased in the brain of aging animals. Therefore, the aim of the present study was to investigate the possible effects of CoQ10 on cognitive function, synaptic plasticity, learning, and memory in aged rats.

Methods : In this study, 40 aged male Wistar rats (360–450 g, 24–36 months old) were assigned to four groups (n=10 rats/group): control group(saline), Aβ group; intraventricular Aβ injection, Q10 group; Q10 via oral gavage and Q10+Aβ group. Q10 was administered via oral gavage, once a day, for 4 weeks before the Aβ injection. The cognitive function, and learning memory of rats were evaluated using novel object recognition (NOR), Morris water maze and passive avoidance tests. Also in this study, in vivo electrophysiological recordings were performed to quantify the excitatory postsynaptic potential (EPSP) slope and population spike (PS) amplitude in the hippocampal dentate gyrus. Long-term potentiation (LTP) was created by a high-frequency stimulation of the perforant pathway. LTP, a widely researched model of synaptic plasticity, which occurs during learning and memory, in rat model of AD.

Results : The discrimination index of the NOR test in the Aβ groups receiving CoQ10 (Q10+Aβ) was significantly higher than that in the control group. In addition, the step through latency was significantly longer and the time spent in the dark compartment was significantly shorter in the Aβ groups receiving CoQ10 (Q10+Aβ) than in the Aβ group. Also Following LTP induction, the EPSP slope and PS amplitude were significantly diminished in Aβ-injected rats, compared with Q10 and control rats. Q10 treatment of Aβ-injected rats significantly attenuated these decreases, suggesting that Q10 reduces the effects of Aβ on LTP.

Conclusion : The present findings suggested that CoQ10 supplementation treatment can improve, cognitive function, learning and memory, and hippocampal synaptic plasticity deficits induced by Aβ in older subjects via its up-regulating mitochondrial function, antioxidant, and anti-inflammatory activity. Thus CoQ10 supplementation has the potential to inhibit the progression of neurodegeneration, leading to a better quality of life for humans suffering with AD.

Keywords : Alzheimer's disease; aging; Coenzyme Q10; Long-term potentiation; learning and memory

Count: 57
Abstract ID: 371
subject: Neuropsychiatry and Psychology: Schizophrenia
Presentation Type: Poster

Molecular changes of IL-6 gene in patients with schizophrenia compared to healthy control: results from ARAS cohort

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Background and Aim : Etiology of Schizophrenia is multifactorial. Numerous investigators suggest a probable role for immune system in the pathogenesis. The aim of this study was to compare the gene expression of interleukin-6 (IL-6) in patients with first episode schizophrenia and healthy controls.

Methods : this study was a part of Azeri recent onset/acute phase psychosis survey (ARAS). 40 patients with recent onset schizophrenia and 40 healthy controls were recruited. After a structures psychiatric interview, groups were matched in terms of gender and age. From the peripheral blood, T-cells were first isolated and then total RNA was extracted. After cDNA synthesis using different primers, expression rate of the interleukin-6 gene was calculated.

Results : The mean age of the patients was 29.7 years, all had Azeri Turkish ethnicity, 67.5% were male. IL-6 gene expression was significantly increased in patients with schizophrenia compared to controls ($p = 0.032$)

Conclusion : This is the firs report from patients with Azeri ethnicity. This study adds evidence for a possible correlation between schizophrenia and immune response that could be either autoimmune or viral reactivation mechanism. Cytokines are suggested as potential biomarkers for disease activity.

Keywords : psychosis, immune system, interleukins

Count: 58
Abstract ID: 28
subject: Epilepsy, Neural Excitability, Synapses, and Glia: Seizure and Epileptic Disorders
Presentation Type: Poster

Assessing Treatment Fidelity within an Epilepsy Randomized Controlled Trial: Seizure First Aid Training for People with Epilepsy Who Visit Emergency Departments.

Submission Author: Seyed ehsan Asadi

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Background and Aim : To measure fidelity with which a group seizure first aid training intervention was delivered within a pilot randomized controlled trial underway in the Iran for adults with epilepsy who visit emergency departments (ED) and informal carers. Estimates of its effects, including on ED use, will be produced by the trial. Whilst hardly ever reported for trials of epilepsy interventions-only one publication on this topic exists-this study provides the information on treatment fidelity necessary to allow the trial's estimates to be accurately interpreted. This rare worked example of how fidelity can be assessed could also provide guidance sought by neurology trialists on how to assess fidelity.

Methods : 75 patients who had visited ED on ≥2 occasions in prior year were recruited for the trial; 26 were randomized to the intervention. 7 intervention courses were delivered for them by one facilitator. Using audio recordings, treatment "adherence" and "competence" were assessed. Adherence was assessed by a checklist of the items comprising the intervention. Using computer software, competence was measured by calculating facilitator speech during the intervention (didacticism). Interrater reliability was evaluated by two independent raters assessing each course using the measures and their ratings being compared.

Results : The fidelity measures were found to be reliable. For the adherence instrument, raters agreed 97% of the time, PABAK-OS kappa 0.92. For didacticism, raters' scores had an intraclass coefficient of 0.95. In terms of treatment fidelity, not only were courses found to have been delivered with excellent adherence (89% of its items were fully delivered) but also as intended they were highly interactive, with the facilitator speaking for, on average, 57% of course time.

Conclusion : The fidelity measures used were reliable and showed that the intervention was delivered as attended. Therefore, any estimates of intervention effect will not be influenced by poor implementation fidelity

Keywords : Treatment Fidelity; Epilepsy; Emergency Departments; Seizure

Count: 59
Abstract ID: 30
subject: Neural Injuries and Neurodegenerative Disorders: Dementia
Presentation Type: Poster

TIME to reduce agitation in persons with dementia in nursing homes. A process evaluation of a complex intervention.

Submission Author: Seyed ehsan Asadi

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Background and Aim : The Targeted Intervention Interdisciplinary Model for Evaluation and Treatment of Neuropsychiatric Symptoms (TIME) has recently in a three-month cluster randomised controlled trial demonstrated reduction in agitation in nursing home residents with dementia. To ease replication and future implementation, and to clarify possible causal mechanisms, we performed a process evaluation of the intervention based on the RE-AIM framework (Reach, Effectiveness, Adoption, Implementation, Maintenance).

Methods : An exploratory and a quasi-experimental design with mixed methods were used. The RE-AIM dimensions were explored by questionnaires to 900 staff members and 100 leading ward nurses in both the intervention nursing homes (INH) and the control nursing homes (CNH), before the start of the trial (baseline), and six and 12 months later. These questionnaires assessed data regarding the reach, effectiveness (staff level) and adoption dimensions. To assess implementation, we used a checklist for performance of the main components in TIME and analysed the minutes from 90 case conferences in the INH. To explore adoption and maintenance, five focus group interviews with 40 participants from the staff in the INH were conducted three to 6 months after the end of the trial.

Results : On average 72% (SD 25) of the staff in each ward in the INH attended the training sessions. Effectiveness at staff level: There were no between-group differences throughout the study period for attitudes towards dementia, perceived competence or perception of mastery and social interaction. Adoption: 18 of the 20 INH completed the intervention.77% or more of the components of TIME were performed for 93% of the included residents. Maintenance: Most of the nursing homes used TIME three to 6 months after the end of the trial. An easy to grasp model and an engaged leadership facilitated the intervention and maintenance.

Conclusion : A high degree of reach, adoption, implementation and maintenance contributed to the effectiveness of TIME at resident level. One other causal assumption of the effectiveness of TIME is the development in the staff of a new, shared and situated knowledge about each individual resident, not reflected by measurements in general knowledge and attitudes.

Keywords : Case conferences; Complex interventions; Dementia; Implementation; Neuropsychiatric symptoms; Non-pharmacological interventions; Process evaluation; RE-AIM

Count: 60
Abstract ID: 29
subject: Neurorehabilitation and Regeneration: Physiotherapy
Presentation Type: Poster

ParkProTrain: an individualized, tablet-based physiotherapy training programme aimed at improving quality of life and participation restrictions in PD patients - a study protocol for a quasi-randomized

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Background and Aim : Parkinson's disease (PD) is one of the most common neurodegenerative diseases. Patients suffer from a variety of motor and non-motor symptoms that severely affect their daily lives and quality of life. In many cases, a three-week inpatient Parkinson's complex treatment (MKP) can improve the overall condition and quality of life of patients in a short time. In the outpatient sector, however, there is often a lack of human resources and structures necessary for the interdisciplinary treatment of the disease. To support PD patients in continuing the physical exercises they learned from the MKP on a regular basis, a tablet-based training programme will be developed in which exercises can be adjusted to the patient's abilities. This programme is expected to increase quality of life and social participation, as well as delay the progression of the impairment.

Methods : a) Quasi-randomized, prospective longitudinal study (sequential study design). The intervention group receives a tablet-based training programme during and for 9 months after the MKP, and the control group receives treatment as usual. The evaluation is carried out by means of a written survey at three points in time (the beginning and end of the MKP and after 9 months). b) Qualitative analysis of interviews and focus groups in terms of feasibility and acceptance. c) Formative evaluation of the app and the administration panel. d) Evaluation of the implementation of the training programme by analysing the planned and performed physical activities, as well as evaluation of the phone calls between physiotherapists and patients.

Results : The tablet-based training programme can ensure continuous and long-term support for PD patients. They learn different self-management strategies during and after their MKP and are empowered to assume responsibility for carrying out regular physical activity on their own.

Conclusion : Because common app stores have no scientifically evaluated apps for PD patients in the persian language, the app can fill this gap and help PD patients receive high-quality care in the implementation of physically activating exercises regardless of their place of residence. In addition, the user-centred development of the app ensures that the app meets the specific needs of PD patients

Keywords : App; Exercise; Parkinson's disease; Participation; Physiotherapy; Quality of life; Tablet; Telemedicine

Count: 61
Abstract ID: 281
subject: Neuropsychiatry and Psychology: Mood Disorders
Presentation Type: Oral

Beta Adrenoceptor Polymorphism and Clinical Response to Fluoxetine in Major Depressive Patients

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Background and Aim : Pharmacogenetic has a proven role in the treatment of different illnesses as a patient with special genotype can have a better response to a specific drug. On the other hand, genetic factors contribute substantially to the likelihood of developing major depressive disorder (MDD). The importance of adrenergic system elements in cognition and behavior, and their involvement in etiology of depression imply that adrenergic receptors beta gene polymorphism(s) might also have an association with drug response, thus the aim of this study is evaluating the relationship between β1AR gene polymorphisms [ADRB1(G1165C)] and drug response.

Methods : Among different antidepressants, we focused on fluoxetine as it is prescribed frequently in Iran and it belongs to one of the most efficient antidepressant categories with a minimum side effect. The presence of MDD was reconfirmed at study entry using DSM-V criteria. One hundred and one newly diagnosed patients were treated with fluoxetine for 6 weeks. Response to treatment was defined as a 50% decrease in Hamilton Rating Scale for Depression (HRSD). Genotyping of adrenergic system genes polymorphism was performed by PCR-RFLP method.

Results : 57 patients (58.4%), were responders to fluoxetine (baseline HDRS: 26.1±10.2; HDRS after week 6: 11.1±7.5) and 44 patients (41.6%), were non-responders (baseline HDRS:26.3±9.5; HDRS after week 6: 21.9±9.5). Demographic data of patients are demonstrated in Table 2. Table 3 shows the genotype and allele frequencies of patients receiving fluoxetine based on a 50% score reduction. The frequencies of all Patients carrying different genotypes have been calculated. Statistical analysis of responsive and non-responsive genotypes demonstrated that there is no significant relationship between β1AR polymorphism and the patient's response to fluoxetine (P=0.905; OR=0.714; 95%CI=0.095-5.159).

Conclusion : Our results demonstrated that there is no significant relationship between β1AR polymorphism and the patient's response to fluoxetine.

Keywords : major depressive disorders; adrenergic system; fluoxetine; genetic polymorphism; pharmacogenetic

Count: 62
Abstract ID: 334
subject: Neural Injuries and Neurodegenerative Disorders: Other
Presentation Type: Poster

A case report of eagle syndrome in a patient affected by multiple sclerosis

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Background and Aim : Eagle syndrome is a rare condition which is caused either by ossification in styloid process or classification of stylohyoid ligament or stylomandibular ligament with an unknown mechanism .Its prevalence rate is estimated to be 4%, and more common in women. The length of a normal styloid process is within 2 to 3 cm. However, different criteria regarding the length of styloid process is used for the diagnosis. The syndrome is characterized by neuralgic pain in throat and neck radiating into ears, dysphagia, headache, sensation of foreign body and voice changes .It has been demonstrated that the symptoms are caused by compression of nearby structures such as glossopharyngeal nerves, external and internal carotid arteries, cranial nerves and hypoglossal nerves. Here we present a 31-year-old woman with history of Multiple sclerosis (MS) who was diagnosed with eagle syndrome.

Methods : A thirty-one years old woman with a medical history of multiple sclerosis (MS) referred to otolaryngologist with constant pain in throat and ears. The pain exacerbated with yawning and opening mouth. The patient was taking a daily dose of fingolimod (0.5mg) and Vitamin D (2000IU). Prior to this, in the first evaluation by a general physician, the patient was diagnosed with ear and throat infection. Despite the treatment with antibiotics, the pain persisted for more than two months. In the initial evaluation by an otolaryngologist, the patient described the pain as being sharp. She did not mention any history of trauma or tonsillectomy. The intraoral palpation of tonsillar fossa revealed palpable styloids. In order to rule out neuropathies, computed tomography (CT) scan and radiology were carried out. In Town X-ray view, the bone density of mandible was within the normal limit, a sequel of chronic fracture within left mandible ramus was seen

Results : The levels of Ca, vitamin D, Mg, and P were all within the normal range in the presented case. The patient did not remember any traumatic incidences. Nevertheless, a sequel of chronic fracture within left mandible ramus was seen in patient's radiology. In an investigation by Kim and colleagues, mechanical stress was the main reason of HSP70 and HO-1 activation. These factors can result in up-regulation of osteogenesis and bone formation.Increase in oxidative stress can induce HO-1 expression. Additionally, it has been demonstrated that HO-1 and Hsp70 have elevated levels in blood sample and CSF of MS patients

Conclusion : Eagle syndrome is known as elongation of styloid process. During years, several theories have been put forward as the main etiology behind this syndrome. Inflammation following previous

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trauma, calcification in presence or absence of mineral imbalance or congenital reasons has been considered as the main culprits of this syndrome. Here, we presented a case who was suffering from bilateral elongation of styloids and MS. We speculated that activation of certain stress factors, cytokines and immune cells during the disease course of MS and a previous fracture in mandible ramus can be taken into account as the probable reasons for the development of this syndrome. However, more investigations need to be done to strengthen this theory.

Keywords : Styloid process, Eagle syndrome, Classification, Ossification,Multiple Sclerosis

Count: 63
Abstract ID: 458
subject: Neural Injuries and Neurodegenerative Disorders: Other
Presentation Type: Poster

Cytotoxicity of gold nanoparticles and retinoic acid macromolecules

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Background and Aim : Gold nanoparticles (AuNPs) have been suggested as helpful medical vehicles in the field of regenerative medicine due to their unique optical properties. The current study examined the directly conjugation ability of retinoic acid (RA) with AuNPs, effects of AuNPs-RA complex on cell viability of human adipose derived stem cell (hADSCs).

Methods : At first, AuNPs synthesized and the size and morphology of the NPs was evaluated by transmission electron microscopy (TEM), Field emission scanning electron microscopy (FE-SEM) and energy-dispersive X-ray spectroscopy (EDS). Conjugation of RA with AuNPs was confirmed by Fourier-transform infrared (FTIR) analysis. Then, loading efficiency of RA in AuNPs-RA complex were determined with ultraviolet-visible spectrophotometry (UV-Vis). In order to determine a non-cytotoxic RA and AuNPs concentration range, cell viability (MTT) assay was performed 24, 48 and 72h post exposure to different concentration of RA, AuNPs and AuNPs-RA complex.

Results : The TEM and FE-SEM assessment revealed that the synthetized AuNPs were spherical in shape with an average diameter of 36.5 nm. Infrared spectroscopy was performed to identify different functional groups in RA, AuNPs and AuNPs-RA complex solutions. Conjugation efficiency of RA in AuNPs was analysed with UV-Vis absorption spectroscopy and the optimal concentration of RA for prepared AuNPs-RA complex was 0.14 ?M. In MTT assay, an RA concentration of 66 µM caused a 50% inhibition of cell viability and AuNPs were not cytotoxic for concentrations below 5 µg/ml.

Conclusion : These data, confirmed the directly conjugation ability of retinoic acid (RA) with AuNPs.

Keywords : Human adipose derived stem cells, Retinoic acid, Gold nanoparticles, Cell viability.

Count: 64
Abstract ID: 403
subject: Neural Injuries and Neurodegenerative Disorders: Ischemia, Stroke, and Neurovascular Disorders
Presentation Type: Poster

Changes of Neurogenesis Markers in Corpus Callosum Induced by Paracrine Effect of Human Embryonic Stem Cell-Derived Mesenchymal Stem Cells in Ischemic Rat

Submission Author: Afsaneh Asgari Taei

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Background and Aim : Mesenchymal stem cells (MSCs) are important candidates for stem cell therapy for neurological disorders. Recent studies have showed that the use of stem cells conditioned medium (CM) are an alternative for regenerative cellular therapy, in large part through production of several molecules including cytokines, chemokines, growth factors, extracellular matrix proteins. The purpose of the present study was to assess the effect of the CM of human embryonic stem cell-derived MSCs on neurogenesis in ischemic stroke model rats.

Methods : In male Wistar rats, ischemic stroke was induced by 90-min right middle cerebral artery occlusion (MCAO). The concentrated CM from human MSCs or DMEM (5μl) respectively were infused through a brain guide cannula into the left lateral ventricle of treatment and control animals three times at 1, 24 and 48 hours after MCAO induction. Furthermore, the MSC-CM was administered a single dose, one hour after reperfusion in another treatment group. The expression of nestin, Ki-67, and doublecortin (DCX) proteins in corpus callosum region were assessed by immunolabeling at 7 days after MCAO.

Results : Our results indicated that following ischemic stroke, levels of neurogenesis markers increased in the corpus callosum. The number of nestin-, ki67-, DCX-positive neuroblasts in the corpus callosum significantly increased by CM treatments. It seems the immunopositive cells migrate from the neurogenic niche, subventricular zone (SVZ) of the lateral ventricles, toward the peri-infarct areas along the corpus callosum.

Conclusion : Our data suggest that CM of human embryonic stem cell-derived MSCs contribute to neuroprotection following cerebral ischemia insult by promoting neurogenesis.

Keywords : Mesenchymal stem cells; conditioned medium; neurogenesis; ischemic stroke

Count: 65
Abstract ID: 443
subject: Neural Injuries and Neurodegenerative Disorders: Neurodegenerative Disorders
Presentation Type: Poster

Activation and recruitment of the endogenous neural stem cells for management of the multiple sclerosis. A view point in the field of regenerative medicine

Submission Author: Shabnam Asghari

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Background and Aim : Multiple sclerosis (MS) as a persistent neuroinflammatory disturbance of the central nervous system which leads to severe neuropathological altrations and irreversible functional deficits. Neurodegeneration results from the devastation of myelin sheaths and following axonal demyelination which is mediated by the immune system reaction including T lymphocytes autoreactivation. Common MS therapies, including immune system agents, are designed to reduce the recurrence of the disease. However, these factors are usually not sufficient to treat throghly chronic neurological disability. A promising prospect for future therapeutic of MS is replacing damaged oligodendrocytes and neurons. Importantly, activation and recruitment of resident oligodendroglial precursor cells oligodendrocytes can generate new myelin sheaths partly. However, this recovery process is limited and fails with the progress of MS, much concern has advanced consideration the progress of remyelination-promoting tactics and the existence of other cell types, which can also provide the amendment of myelin sheaths. There is a minimum of two neurogenic niches in the adult brain which has long-lived adult neural stem cells (NSCs). Many studies have begun to elucidate NSCs in pathological conditions and have revealed their potential in myelin repair activity. Here we'll discuss the role of neural stem cells in the repair of MS lesions and underlying mechanisms.

Methods : here we review the papers about neural stem cell and multiple sclerosis

Results : Here we'll discuss the role of neural stem cells in the repair of MS lesions and underlying mechanisms

Conclusion : Here we'll discuss the role of neural stem cells in the repair of MS lesions and underlying mechanisms

Keywords : neural stem cell; multiple sclerosis; treatment

Count: 66
Abstract ID: 440
subject: Epilepsy, Neural Excitability, Synapses, and Glia: Seizure and Epileptic Disorders
Presentation Type: Poster

Neural stem cells in epilepsy treatment

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Background and Aim : Epilepsy is a weakening and infirming disease that influences approximately 50 millions of people worldwide with the highest prevalence in low-income countries. The epilepsies are a group of neurological disorders that are characterized by spontabeous recurrent seizures. The loss of neuronal cells or extreme electrical discharge in neural cells following injury results in recurrent seizure attacks. The treatment of temporal lobe epilepsy (TLE) caused by hippocampal sclerosis is one of the major challenges in the field of regenerative medicine. In recent years, stem cell-based therapy as the novel therapeutic approach has been highlighted to manage, alleviate and even to stop the seizure attacks and hyperexcitability. Up to now, different stem cells have been applied to alleviate and rescue the cognitive deficits and neuropathological alterations in TLE using in -vitro and in-vivo assays. Considering the discovery of the neural stem cells in the mammalian brain, the hope has been raised in the TLE treatment. Seme areas in mammalian brain by the existence and activation of neural stem/progenitor cells (NSCs) to produce new neurons, have the partial self repair capacity. However, there is still no evidence that extensive spontaneous replacement of dead neurons by newly formed neurons leads to functional recovery in the damaged brain. Here we will discuss the effect of epilepsy on behavior of endogenous NSCs and reversely the potential of endogenous NSCs in epilepsy treatment and gifted NSCs which isolated from different parts of the brain and embryonic stem cell to stop the seizure attacks and epilepsy treatment.

Methods : We will review the papers about neural stem cell fate in epilepsy.

Results : Stem cell therapy specially NSCs seems like a promising approach for treatment of epilepsy in the future.

Conclusion : Stem cell therapy specially NSCs seems like a promising approach for treatment of epilepsy in the future.

Keywords : neural stem cell; epilepsy; treatment

Count: 67
Abstract ID: 119
subject: Neural Injuries and Neurodegenerative Disorders: Neurodegenerative Disorders
Presentation Type: Oral

New genetic type of Pure Hereditary Spastic Paraplegia

Submission Author: Mehrdad Asghari Estiar

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Background and Aim : Hereditary spastic paraplegia (HSP) is a heterogenous group of monogenic neurodegenerative diseases. Of 80 identified genes/loci, each gene mutations cause a distinct type of HSP. Genetic and clinical overlap have been reported between HSP and other neurological diseases, yet over 50% of HSP patients remain genetically unknown.

Methods : A total of 696 HSP patients from 431 families were recruited in the study. To identify novel genes involved in HSP, we performed whole exome sequencing (WES) for 383 HSP patients who were genetically undiagnosed. In addition, 251 unrelated healthy individuals went through WES as controls. Multiple databases and tools were applied to evaluate the effect of mutations.

Results : Two unrelated patients, who presented pure HSP with normal brain and spine MRI, with very rare compound heterozygous SPTAN1 mutations were identified; one harbored the c.2572G>T p.(Ala858Ser) and c.4283C>G p.(Ala1428Gly) mutations, and the second also harbored the c.2572G>T p.(Ala858Ser) mutation, and an additional mutation, c.6990G>C p.(Met2330Ile). Validation and further segregation of the suspected pathogenic variants were performed using Sanger sequencing. SPTAN1 gene was highly intolerant for functional variants (in the top 0.31% of intolerant genes) with much lower observed versus expected number of loss-of-function variants (8 vs. 142.7, $p<5\times10-15$). All three mutations were predicted to be deleterious by CADD and MutationTaster, and were located in highly conserved amino acids with all GERP++ scores > 4.7. Protein–protein interaction network using STRING revealed that SPTAN1 protein closely interacts with other HSP-related proteins (CAPN1, L1CAM, ENTPD1). SWISS-MODEL was used to generate homology models of human spectrin repeats and validated the effect of these variants on SPTAN1 function and structure. We have found previously described mouse, zebrafish and rat animal models of SPTAN1 disruption, all consistently showing axonal degeneration, fitting the pathological features of HSP.

Conclusion : Our results suggest that SPTAN1 may cause autosomal recessive pure HSP, and that it should be included in genetic screening panels for genetically undiagnosed HSP patients.

Keywords : SPTAN1; Hereditary Spastic Paraplegia; Neurodegerative Disease, Exome Sequencing

Count: 68
Abstract ID: 296
subject: Novel and Cutting-Edge Technologies: Molecular, Biochemical, and Genetic Techniques & Gene . Therapy
Presentation Type: Poster

Clinical and genetic analysis of ATP13A2 in hereditary spastic paraplegia

Submission Author: Mehrdad Asghari Estiar

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Background and Aim : Hereditary spastic paraplegia (HSP) is an umbrella name for a group of heterogenous neurodegenerative disorders characterized by lower limb spasticity and weakness, with or without additional symptoms. Mutations in ATP13A2, which are known to cause a form of atypical parkinsonism called Kufor-Rakeb syndrome (KRS), were recently suggested to also cause HSP in five families (SPG78).

Methods : Whole-exome sequencing was done in CanHSP, a Canada-wide network for HSP which includes 696 patients.

Results : We identified three additional patients from three different families with homozygous ATP13A2 mutations, representing 0.4% of all HSP patients and 0.7% of all HSP families. Spastic paraplegia was the most predominant feature in all three patients. The three patients presented with psychiatric symptoms which have been reported in only one SPG78 patient prior to the current study. One of the patients has developed seizure, spinocerebellar ataxia and dysmetria which have not been reported in SPG78. Of the three identified mutations, c.2126G>C (p.[Arg709Thr]) is novel, c.2158G>T (p.[Gly720Trp]) has not been reported in ATP13A2-related diseases, and c.2473_2474insAAdelC (p.[Leu825Asnfs*32]) has been previously reported to cause KRS but not HSP. Structural analysis of the missense mutations suggested a disruptive effect, and enrichment analysis suggested specific pathways potentially involved in HSP.

Conclusion : Our study highlights the clinical variability of SPG78, and suggests that in HSP patients with psychiatric symptoms, ATP13A2 mutations should be suspected, especially if they also have extrapyramidal symptoms. Additional studies are required to understand why there is such large phenotypic variability, even among carriers of the same mutation.

Keywords : HSP; SPG78; ATP13A2; Parkinsonism; Neurodegeneration

Count: 69
Abstract ID: 232
subject: Neuropsychiatry and Psychology: Mood Disorders
Presentation Type: Poster

Effect of Repetitive Transcranial Magnetic Stimulation (rTMS) by bilateral protocol on depression severity in patients with Depressive Disorder

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Background and Aim : Depression is one of the most prevalent psychiatric disorders and there are a lot of antidepressants which can decrease the symptoms of depression, but some of patients are resistant to medication. Neuro imaging studies have demonstrated that low function of left dorsolateral prefrontal cortex (LDLPFC) and high function of right dorsolateral prefrontal cortex (RDLPFC) have correlation with depression. Repetitive transcranial magnetic stimulation (rTMS) is a novel, safe and non invasive therapeutic tool for neuropsychiatric disorders such as depression. Thus the purpose of the present study was to investigate the effect of bilateral protocol on severity of depression in depressive disorder.

Methods : The participants were 24 patients with depressive disorder aged 25-45 years who were randomly selected from clients referred to Asayesh Neurotherapy Center. they were divided into 2 groups, one with left DLPFC stimulation (20Hz, 5s, 1400 pulses and 85% of MT) and right DLPFC inhibition(1Hz, 10s, 700 pulses and 110% of MT), and one control group. In all subjects, depression severity was assessed by Beck Depression Inventory. Intervention was performed in 10 sessions during two weeks and then post-test was done.

Results : Data were analyzed by SPSS software using paired t-test and univariate analysis of covariance. The results showed that there was a significant decrement in the depression severity in experimental group compared to the control group. By Within group analysis significant decrement in experimental group was observed too.

Conclusion : To sum up, bilateral DLPFC rTMS was effectively associated with antidepressant treatment during 10 sessions. Nevertheless, more controlled studies will be necessary to specify the long lasting effects of rTMS.

Keywords : Repetitive Transcranial Magnetic Stimulation (rTMS); DLPFC; Depression severity; Depressive Disorder

Count: 70
Abstract ID: 234
subject: Cognition: Executive Function (Decision Making, Reasoning, Problem Solving)
Presentation Type: Poster

Effect of Repetitive Transcranial Magnetic Stimulation on response inhibition by bilateral protocol in patients with Depressive Disorder

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Background and Aim : Depression is one of the most prevalent psychiatric disorders and repetitive transcranial magnetic stimulation (rTMS) is a novel, safe and non invasive therapeutic tool for neuropsychiatric disorders such as depression but efficiency of this intervention on cognitive functions such as response inhibition of depressed patients is not clear. Neuro imaging studies have demonstrated that low function of left dorsolateral prefrontal cortex (LDLPFC) and high function of right dorsolateral prefrontal cortex (RDLPFC) have correlation with depression. Thus the purpose of the present study was to investigate the effect of bilateral protocol on response inhibition in depressive disorder.

Methods : The participants were 12 patients with depressive disorder aged 25-45 years who were randomly selected from clients referred to Asayesh Neurotherapy Center. The experimental protocol was stimulation of left DLPFC (20Hz, 5s, 1400 pulses and 85% of MT) and inhibition of right DLPFC (1Hz, 10s, 700 pulses and 110% of MT. In all subjects, response inhibition was assessed by Go-No Task .Intervention was performed in 10 sessions during two weeks and then post-test was done.

Results : Data were analyzed by SPSS software using paired t-test. The results showed the significant increment in number of correct responses in response inhibition after 10 sessions .no significant differences in reaction time was observed.

Conclusion : To sum up, bilateral DLPFC rTMS was effectively associated with increment in number of correct responses in response inhibition functions during 10 sessions. Nevertheless, more controlled studies will be necessary to specify the long lasting effects of rTMS

Keywords : Repetitive Transcranial Magnetic Stimulation (rTMS); DLPFC; Response inhibition; Depressive Disorder

Count: 71
Abstract ID: 311
subject: Neurorehabilitation and Regeneration: Physiotherapy
Presentation Type: Poster

Smart portable device to inhibit palmoplantar hyperhidrosis

Submission Author: Alireza Asgharpour Masouleh

Alireza Asgharpour Masouleh[1], Afsaneh Dadarkhah[2]

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Background and Aim : Hyperhidrosis is the severe sweating without any clear cause of the occurrence. Infections, medications or neurological diseases may be responsible for excessive sweating and this disorder can lead to various individual and social complications such as emotional problems and inability to use metallic or electronic devices. In this study, we have manufactured a smart portable DC iontophoresis device to transfer ions through the skin and as a result, blocking sweating glands. This smart device has distinct characteristics such as Bluetooth connection, USB port, PC and Android software and small size to treat hyperhidrosis more convenient for patients.

Methods : This device consists of a smart power supply unit, aluminum electrodes, water reservoirs, connecting wires and a carrying case. The smart power supply has the major role to provide sufficient output current with accurate resolution (1mA) and voltage range from 5 to 55 volts for the treatment. With its smart menu, which include restricting output values, programmable treatment sessions and color display, the device can provide more safety and convenience for patients. PC and Android software of the device can monitor whole treatment process and effective factors such as output voltage, output current and power. Furthermore, we are able to schedule treatment in this program with different time intervals to increase the tolerance of patients through treatment and save data for 10 patients. There are two Aluminum electrodes to transfer ions from power supply unit into skin through water in the reservoirs

Results : With respect to various skin electrical resistance, this device can regulate voltage range from 5 to 55 volts to treat hyperhidrosis patients with various skin electrical resistance. In addition, with increasing the output voltage, the resistance of skin declines and it may lead to more efficient treatment. Electrical current is the most important factor of treatment and efficient current for treatment ranges from 10 to 20 mA. The software of the device may facilitate study healing process and also determine the role of different electric current types on the treatment. The Bluetooth connection and full color screen of this device can facilitate using of this device and light weight and user friendly menu of this device may make treatment accessible in any place and without presence of medical staffs.

Conclusion : This is a noninvasive drug delivery system and can eliminate use of invasive hyperhidrosis treatment methods such as Botulinum toxin injection and surgery. In the future studies we can apply different ionized drugs to water reservoirs to evaluate the role of ionized drugs on the efficiency of this device. We are also able to use of this device to deliver drugs to treat other disease which need noninvasive drug delivery methods.

Keywords : Hyperhidrosis; Direct current; Iontophoresis

Count: 72
Abstract ID: 542
subject: Neuropsychiatry and Psychology: Disorders of Neurobehavior
Presentation Type: Poster

The Effectiveness of Positive Therapy on Anxiety Reduction in Patients with Multiple Sclerosis

Submission Author: Hoda Ashjari

Hoda Ashjari [1]

1. MA in clinical psychology

Background and Aim : Multiple Sclerosis (MS) is a chronic disease of the central nervous system demyelination characterized by impaired nerve conduction and manifested by a variety of clinical symptoms. The aim of this study was to evaluate the effectiveness of positive therapy on reducing anxiety in patients with multiple sclerosis.

Methods : The research design was quasi-experimental with pretest-posttest with experimental and control group. Statistical population included patients with multiple sclerosis referred to Abadan hospital in 2018. 32 of them were selected by convenience sampling and divided into experimental and control groups.The instruments used in this study were Beck Anxiety Test. Subjects in the experimental group received one 90-60 minutes of positive treatment for 6 sessions each week and the control group did not receive any special intervention.

Results : The mean score of anxiety in patients with multiple sclerosis decreased in the post-test compared to the pre-test.

Conclusion : The results showed that positive therapeutic efficacy has an effect on reducing anxiety in patients with multiple sclerosis.

Keywords : Positive Therapy, Reducing Anxiety in Patients with Multiple Sclerosis.

Count: 73
Abstract ID: 310
subject: Cognition: Executive Function (Decision Making, Reasoning, Problem Solving)
Presentation Type: Poster

Creative Interpersonal Problem Solving Training Program and General Health of Gifted Students in University of Tehran

Submission Author: Moslem Ashna

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2. Assistant Proffessor, Azad University, Science and Research Branch
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4. Assistant Proffessor, Azad University, Science and Research Branch

Background and Aim : The purpose of this study was to evaluate effectiveness of creative interpersonal training on mental health of the gifted university students

Methods : The design of the study was quasi-experimental with pretest-posttest and control group. The students' giftedness was screened by their professors' candidacy and Tehran Stanford-Binet test of intelligence (Afrooz & Hooman, 1996) and were randomly assigned as experimental and control groups The experiment group participated in the interpersonal creative problem solving program, and the control group did not receive any treatment. GHQ (General Health Questionnaire, Goldberg, 1979) was used to evaluate psychological health of the participants. The obtained data were analyzed using Analysis of the Covariance.

Results : The findings showed significant differences ($p<0/01$) between the experimental and the control group in general health. The effect size was 0.436 for psychology health.

Conclusion : At the end, applying creative interpersonal problem solving program for improving general health in gifted students was discussed. Further discussions as well as suggestions for future research are presented.

Keywords : Interpersonal creative problem solving training, general health, gifted university students

Count: 74
Abstract ID: 286
subject: Neural Injuries and Neurodegenerative Disorders: Neurotoxicity, Neuroprotection, Inflammation
Presentation Type: Poster

Evaluation of antiparkinsonism effects of total extract of fruits and aerial parts of Sambucus ebulus Lin 6-OH dpamine model of Parkinson in neuroblastoma cell culture

Submission Author: Ramin Ataee

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Background and Aim : Parkinson's disease is the second most common neurodegenerative disorder which affecting the senile population with manifestation of motor disability and cognitive impairment.Sambucus ebulus is a plant with traditional uses which might confer neuroprotective effects most probably according to its anti-oxidative stress activity but there are no studies around its role in Parkinson diseases so far. Hence, this study has aimed to investigate the neuroprotective effect of total extract of fruits and aerial parts of Sambucus ebulus in a neurotoxin-induced model of Parkinson.

Methods : In vitro model of Parkinson disease has generated by exposing SH-SY5Y neuroblastoma cells to neurotoxin: 6-hydroxydopamine (6-OHDA) 100μM/well.Total extract of fruits and aerial parts of Sambucus ebulus extracted by tow solvents of methanol and ethyl- acetate by maceration method. Cytotprotective effect of methanol and ethyl acetate extracts in five concentrations on cell viability by using MTT assay. Apoptotic assay was done with route of Annexin V-propidium iodide method by flow-cytometry

Results : According to MTT assay analysis,both methanol and ethyl acetate extracts have shown protective effect against 6-OHDA induced cytotoxicity in SH-SY5Y neuroblastoma cells especially at concentrations of 30 and 60 µg/ml $P<0.05$ but apoptetic analysis has shown at IC50 Conct, only methanolic extract of the heeb had anti-apoptic effect $P<0.05$.

Conclusion : We can introduce aerial parts of sumbacus ebulus extract as a cytoprotective co-trearment in Parkinson disease but compelementary studies especially in in vivo and clinical trials are necessary.

Keywords : Sambucus ebulus, Apoptosis, SH-SY5Y, 6-OHDA, Neurodegenerative disorder, Parkinson's disease, Neuroprotection

Count: 75
Abstract ID: 287
subject: Neuropsychiatry and Psychology: Mood Disorders
Presentation Type: Poster

Plasma Micro-RNA and depression,diognosis and treatment

Submission Author: Ramin Ataee

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Background and Aim : Major depression is common psychiatric disorder. The diagnosis of depression is an important subject and depends on subjective complaints, and the quality of the heterogeneous disorder. Recently some biomarkers have been diagnosed which can determine the early diagnosis and progress of treatments of depression patients .Previous research has shown that microRNAs are dysregulated in bipolar disorder and schizophrenia .this review discuss about micro-RNAs which involve in depression.

Methods : For this aim we have searched through journals DATA bases and PubMed,Elseviers,Web of Sciences and google scholars sites by considering more than 40 articles which discussed around this option and reached to nice results.

Results : The most important findings were documents about down-regulation of miR-320a and the up-regulation of miR-451a.Two studies have shown the importance ofmiR-320 family as a plasma marker in autism and major depression. Also 8 microRNAs were down-regulated in plasma of autism patients, including miR-320a . Also MiR-101-3p, miR-106-5p, miR-423-5p, and miR-93-5p upregulated in the plasma of depressed patients .Also it was found that these two statistically Significant microRNAs were related to genes: GRIN2A, DISC1, and SLC17A7 .GRIN2A, and DISC1 have been shown to be predicted targets for miR-320a (mirdb.org). Aslo it was demonstrated that glutamatergic genes -including GRIN2A- were unregulated in individuals who experienced suicide during a depressive period. Besides, mice studies revealed that knock-out of GRIN2A indicates an antidepressant response-like behavior . Recent data also suggest that GRIN2A up-regulation is related to depression, and the knock-out of GRIN2A is related to an antidepressant response-like behavior.

Conclusion : MiR-320a is down regulation and miR-451a is upregulation in major depression are in most consider. In particular, accumulating data provide evidence that the miR-320 family is dysregulated in major depression. In addition, miR-451a could serve as a candidate biomarker for depression based on the acting mechanism of ketamine. Studies targeting miR-451a levels before and after treatment could be helpful .Also genes: GRIN2A, DISC1, and SLC17A7 have been shown to be related with miR-320a .In future role of micro-RNA as diagnostic and progressive markers would be in major consider of Depression control and curing managements

Keywords : Depression,Micro-RNA,Authism,Bi-Polar disorder,Diagnosis,Treatment

Count: 76
Abstract ID: 146
subject: Motor Systems and Movement Disorders: Motor Neurons and Muscle
Presentation Type: Oral

Curcumin has Neuroprotection Effect on Homocysteine Rat Model of Parkinson

Submission Author: Amin Ataie

Amin Ataie[1]

1. babol university of medical science

Background and Aim : Parkinson's disease (PD) is a progressive neurological disorder which is emanated by dopaminergic death cell and depletion. Curcumin as a nontoxic matter has antioxidant, anti-inflammatory, and antiproliferative activities, and it involves antioxidant property same to vitamins C and E. In this study, we investigated the neuroprotective properties of the natural polyphenolic antioxidant compound, curcumin, against homocysteine (Hcy) neurotoxicity

Methods : Curcumin (50 mg/kg) was injected intraperitoneally (i.p.) once daily for a period of 10 days beginning 5 days prior to Hcy (2 μmol/μl) intracerebroventricular (i.c.v.) injection in rats. The studies included immunohistological and locomotor activity tests.

Results : These results suggest that homocysteine intracerebroventricular administration (2 μmol/μl i.c.v.) may induce changes in rat brain, and subsequently

Conclusion : polyphenol treatment curcumin 50 mg/kg (i.p.) was capable in improving locomotor function in insulted animal by protecting the nervous system against homocysteine toxicity.

Keywords : Curcumin . Homocysteine . Intracerebroventricular . Rat . Locomotor activity . Stress oxidative

Count: 77
Abstract ID: 145
subject: Cognition: Learning and Memory
Presentation Type: Poster

Investigation of the therapeutic effect of nicotine and its metabolite on the brain

Submission Author: Amin Ataie

Amin Ataie[1]

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Background and Aim : nicotine is a stimulant and potent parasympathomimetic alkaloid that is extracted from tobacco . Nicotine acts as a receptor agonist at most nicotinic acetylcholine receptors (nAChRs) .Except at two nicotinic receptor subunits (nAChRα9 and nAChRα10) where it acts as a receptor antagonist

Methods : Nicotine constitutes approximately 0.6–3.0% of the dry weight of tobacco. Usually consistent concentrations of nicotine varying from 2–7 μg/kg are found in the edible family Solanaceae, such as potatoes, tomatoes, and eggplant

Results : Nicotine is highly addictive. It is one of the most commonly abused drugs. An average cigarette yields about 2 mg of absorbed nicotine; high amounts can be more harmful. Nicotine addiction involves drug-reinforced behavior, compulsive use, and relapse following abstinence. Nicotine dependence involves tolerance, sensitization, physical dependence, and psychological dependence

Conclusion : Nicotine induces both behavioral stimulation and anxiety in animals. Research into nicotine's most predominant metabolite, cotinine, suggests that some of nicotine's psychoactive effects are mediated by cotinine.Cotinine has been shown to be psychoactive in humans and animals, facilitating memory, cognition, administrative function, and emotional responding. Furthermore, recent research shows that cotinine acts as an antidepressant .Nicotine activates nicotinic receptors (particularly α4β2 nicotinic receptors) on neurons that innervate the ventral tegmental area and within the mesolimbic pathway where it cause the release of dopamine

Keywords : cotinine. nicotine. memory.acetylcholin receptor. memory.

Count: 78
Abstract ID: 279
subject: Neural Injuries and Neurodegenerative Disorders: Other
Presentation Type: Oral

Cytotoxic and Apoptogenic Effects of Resveratrol on the Glioblastoma Cell Line

Submission Author: Hesam adin Atashi

Hesam adin Atashi[1]

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Background and Aim : Objective: Glioblastoma (GBM) is the most prevalent and aggressive primary cerebral tumor.Unfortunately, the median survival time is 15 months despite maximum treatment because the tumor is resistant to most therapeutic modalities. There are several studies indicating the chemopreventive and chemotherapeutic activity of Resveratrol as an anthocyanin component. Therefore, this study aimed to illustrate the cytotoxic and apoptogenic effects of Resveratrol in the U87 cell line (human GBM cell line).

Methods : Methods: Cytotoxic activity was evaluated using an MTT assay after treatment with Resveratrol at different concentrations in the U87 cell line. Cisplatin was used as a positive control for 24 and 48 h. In addition, the percentage of apoptotic cells was determined using an Annexin V/PI assay and the expression of bax, bcl2, and p53 genes was assessed using real-time PCR.

Results : Results: Treatment of U87 cells with 40 μg/mL of Resveratrol resulted in 32% apoptotic cells after 24 h. To further confirm that Resveratrol treatment induced apoptosis in U87 cells, the RNA expression of bax, bcl2, and p53 genes was investigated after treatment. Real-time PCR indicated that the expression of bax and p53 increased, whereas the expression of bcl2 decreased.

Conclusion : Conclusions: Resveratrol had an apoptogenic effect in the GBM cell line. This study may provide new information regarding the therapeutic effects of Resveratrol in GBM that could ultimately lead to the production of new drugs.

Keywords : Keywords: Glioblastoma; U87 Cells; Cisplatin; Resveratrol; Apoptosis

Count: 79
Abstract ID: 280
subject: Neural Injuries and Neurodegenerative Disorders: Ischemia, Stroke, and Neurovascular Disorders
Presentation Type: Oral

Effect of Different Doses and Times of FK506 on Different Areas of the Hippocampus in the Rat Model of Transient Global Cerebral Ischemia-Reperfusion

Submission Author: Hesam adin Atashi

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Background and Aim : Stroke is a major worldwide problem that is leading to a high mortality rate in humans. Ischemia, as the most common type of stroke, is characterized by tissue damage that can occur due to insufficient blood flow to the brain even for a brief duration, leading to the release of inflammatory factors, cytokines, and free radicals. In this study, we investigated the effective dose and injection time of FK506 as an immunophilin ligand for providing a suitable effect on cells of CA2, CA3, and dentate gyrus of the hippocampus.

Methods : In this in vivo study, a total of 48 male Wistar rats were divided into nine groups. The ischemia model was induced by the ligation of bilateral common carotid arteries. The doses of FK506 (3, 6, and 10 mg/kg) were administered intravenously (IV) at the beginning of reperfusion, followed by repeated injections (10 mg/kg) at 6, 24, 48, and 72 hours after ischemia, respectively. Brains were removed and prepared for Nissl staining and the TdT-mediated dUTP Nick End Labeling method.

Results : Data showed that global ischemia did not decrease the number of viable pyramidal cells in CA2 and CA3 regions, but significant differences were observed in the number of viable granular cells and apoptotic bodies in the dentate gyrus between the control and ischemia groups. Repeated doses of 6 mg/kg of FK506 at an interval of 48 hours were deemed to be the suitable dose and best time of injection.

Conclusion : It seems that FK506 can ameliorate the extent of apoptosis and may be a good candidate for the treatment of ischemia-induced brain damage.

Keywords : FK506 ; Cerebral Ischemia ; Hippocampus

Count: 80
Abstract ID: 268
subject: Emotion, Motivation and Behavior: Stress and the Brain (Stress-modulated Pathways, Stress and Cognition, Stress Related Disorders)
Presentation Type: Oral

Chilling and Blurring of Negative Memories: A Quasi Experimental Study

Submission Author: Fatemeh Azar

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Background and Aim : This study is based on the Memory Process Theory and examined whether interventions during encoding and retrieval phases, could reduce physiological (heart rate and blood pressure) and subjective (vividness and emotionality) responses to negative memories.

Methods : 95 non-clinical participants (age 20-30) were randomly assigned to three groups including: control (n=30), expanding attentional span (EAS) (n=33) and working memory interference (WMI) (n=32). Before watching a 5-minute movie clip eliciting negative emotion, participants in EAS condition were asked to highly allocate attention to peripheral aspects of the main event, since they might be asked about the details later. After watching the movie, participants were asked to select the most traumatic scene of the movie to be recorded by examiner. Participants returned to the lab after 24 h for retrieval phase when they were presented with the previously selected traumatic scenes. They were asked to remember the movie while their eyes were closed and rated the vividness and emotionality of the mental images. While all the groups were engaging in retrieving memories, the WMI group was asked to perform a visuospatial memory task (making shapes with matches). Following the filler task, all the participants were re-asked to remember the movie while rating the vividness and emotionality. They were also asked to rate the Self-Assessment Manikin (SAM) scale. Heart rate and blood pressure were also recorded. Data were analyzed using t-test and ANCOVA.

Results : Our results indicate no difference in terms of physiological responses between groups, while in terms of subjective responses, the EAS group reported significantly lower emotional dominance (F=4.93, P=0.03) compared to the other two groups. Moreover in terms of memory vividness, the WMI group achieved significantly lower score than the other two groups (F=5.33, P=0.02).

Conclusion : The present study revealed the importance of attention direction and working memory interference in decreasing subjective response towards memories which trigger negative emotions.

Keywords : Negative memories; Emotional response; Expanding attention; Working memory interference

Count: 81
Abstract ID: 484
subject: Emotion, Motivation and Behavior: Behavioral Pharmacology
Presentation Type: Poster

The Injection Effects of Loratadine and Steroid Hormones into Hippocampus on Motor Skill Learning and Balance in the Rats

Submission Author: Zahra Azardar

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Background and Aim : Study of the effect of histamine antagonist, showed that the antihistamines have a different effect on balance and locomotor activity. Loratadine is a long acting antihistamine, that is H1 histamine receptor antagonist and used to treat allergies. This new second-generation antihistamine selectively worked on peripheral H1-receptor sites and passes a very little bit of the blood brain barrier. Therefore, this study aimed to investigate the effects of direct injection of Loratadine on hippocampus function and for a wider study, steroid hormones beside the Loratadine were used and their interaction on the balance and motor skill learning, was investigated.

Methods : Twenty-five mature wistar rats weighing 250±25g were randomly divided into the 5 following groups (n=5 rats/group): Control, the groups received Loratadine (CLAR), Loratadine plus Estradiol (CLAR+E2)(2µl+1µl), Loratadine plus Progesterone (CLAR+P2) (2µl+1µl) and Loratadine plus Estradiol and Progesterone (CLAR+E2+P4). Before surgery, the rats motion balance and motor skill was examined with the rotarod set. The rotarod test is a performance test based on a rotating rod with forced motor activity being applied, usually by a rodent. Some of the functions of the test include evaluating balance, grip strength and motor coordination of the subjects; especially in testing the effect of experimental drugs. The test measures parameters such as riding time (seconds) or endurance. Animals in the control groups did not receive any drug. Rats in the drug groups were anesthetized with intra-peritoneal injection and bilateral cannulas were implanted 0.2 mm above hippocampus, by stereotaxic apparatus. A week after the surgery, the drugs were injected into the groups through cannulas. To check the learning and memory criteria, at the end of injection, balance and motor skill learning were assessed by rotarod test again (1,3 and 24 hours after the injection). One-way analyses of variance (ANOVA) followed by Tukey's post hoc test, were used for analysis of the data.

Results : The collected information from pharmaceuticals showed that intra-hippocampus administration injection of Loratadine, significantly (p<0.001) reduced rotarod test. Also, 3 and 24h after the injection of Loratadine plus Progesterone, the results of the rotarod test in this group are significantly(p<0.01) higher than CLAR+E2+P4. and Loratadine plus E2 (CLAR+E2) drug groups. The comparison of the rotarod test of each group suggests that the motor balance index in the control group has significantly(p<0.01) increased in the 3 and 24 hours after injection. The rotarod test of drug groups with respect to the pre - injection drug rotarod test showed a significant decrease at the level (p<0.001).

Conclusion : It seems that the injection of Loratadine in hippocampus can decrease motor skill learning and balance. There is an interaction between Loratadine and progesterone hormone in the balance and motion learning at the hippocampus. However, the use of estrogen hormone with Loratadine has no noticeable effect on motion learning and balance.

Keywords : Loratadine, Steroid Hormones, Memory, Rotarod, Balance, Motion Skill Learning

Count: 82
Abstract ID: 393
subject: Neural Injuries and Neurodegenerative Disorders: Ischemia, Stroke, and Neurovascular Disorders
Presentation Type: Oral

Modulation of Neuroinflammation process by Melatonin in ischemic stroke: with emphasis on reperfusion phase

Submission Author: Fereshteh Azedi Tehrani

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Background and Aim : Even today, ischemic stroke is a major cause of death and disabilities because of its high incidence, limited treatments and poor understanding of the pathophysiology of ischemia/reperfusion, neuroinflammation and secondary injuries following ischemic stroke. The function of microglia as a part of the immune system of the brain following ischemic stroke can be destructive or protective. Recent surveys indicate that melatonin, a strong antioxidant agent, has receptors on microglial cells and can regulate them to protective form; yet, more findings are required for better understanding of this mechanism, particularly in the reperfusion phase.

Methods : In this study, we initially aimed to evaluate the therapeutic efficacy of melatonin intra-arterially and to clarify the underlying mechanisms. After that by using an in vitro approach, we evaluated the protective effects of melatonin on microglial cells following the hypoxia condition.

Results : Our results proved that a single dose of melatonin at the beginning of reperfusion phase improved structural and behavioral outcomes. Melatonin increased NeuN and decreased GFAP, Iba1 and active caspase-3 at protein level. Furthermore, melatonin elevated BDNF, MAP2, HSPA1A and reduced VEGF at mRNA level. We also showed that melatonin receptor 1B highly expressed in microglial cells after 3 h hypoxia. Besides, melatonin increased the ratio of TREM2/iNOS as a marker of the most protective form of microglia (M2).

Conclusion : In summary, our data suggest that melatonin has the possibility to serve as targeting microglial action for preventing neuroinflammation and secondary injury of reperfusion phase after ischemic stroke.

Keywords : Neuroinflammation, Microglial cell, Melatonin, Ischemic stroke, Reperfusion phase

Count: 83
Abstract ID: 218
subject: Cognition: Other
Presentation Type: Poster

Evaluation of convergent and divergent thinking in multiple sclerosis patients

Submission Author: Mahdieh Azin

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Background and Aim : : Creativity is the ability to generate behaviours that are novel, useful, and efficient. Previous studies showed that there is a positive significant relationship between creativity and positive affection as well as intrinsic motivation. There was also a negative correlation between creativity and negative affection. Multiple sclerosis (MS), a frequent neurological disease which mostly occurs in early to middle adulthood. Cognitive impairment caused by MS affects up to 60% of individuals and occurs independent of physical decline. The cognitive deficits in MS patients can increase due to the prevalence of anxiety or depression in MS patients. Cognitive impairment and mood disorder can adversely affect creativity. The aim of this study was to evaluate two domains of creativity (convergent and divergent) as well as influencing factors such as affection and motivation in multiple sclerosis patients.

Methods : 40 relapse remitting MS patients from the Specialty Patient Clinic and 34 healthy subjects in Rafsanjan /Iran were selected through convenience sampling. They were tested individually in one session, in which they took four paper-and-pencil-type tests (RAT, AUT, Watson Affection and Amabile Motivation). In Mednick's Remote Associates Test (RAT) which evaluates divergent thinking with 30 items, three words are presented and the participant is required to identify the fourth word that connects these three seemingly unrelated words. The answer for each item can be associated with the words of the triad in various ways, such as synonymy, formation of a compound word, or semantic association. In the Guilford's Alternative Uses Test (AUT), which is related to divergent thinking task, participants were asked to list as many possible uses for brick. Scoring comprised of three components: Originality: Each response is compared to the total amount of responses from all of the participants. Responses that were given by only 5% of the group counted as unusual (1 point) and responses given by only 1% count as unique (2 points). Fluency: The total of all responses. Flexibility: The number of different categories used. Watson's 20-item questionnaire for Assessment of Positive and Negative Affection and Amabile's 5-item intrinsic motivation questionnaire were also filled out by the participants.

Results : Of the 74 participants, 40 (54.1%) were MS patients and 34 (45.9%) were healthy. There was a significant difference between the two groups of healthy subjects and MS patients in terms of motivational score ($p < 0.001$), positive affection score ($p = 0.001$), negative affection score ($p = 0.003$), fluency of AUT ($p = 0.001$), flexibility of AUT ($p = 0.002$), RAT score ($p = 0.005$). But there was no significant difference in the originality score ($p = 0.975$) between the healthy subjects and MS patients.

Conclusion : The results showed that in MS patients divergent and convergent thinking decreased. Because of motivation and positive affclion loss and negative affection increase in MS patients, and their influence on creativity, such an outcome was expected. Also, the presence of plaque in the frontal lobe,

depression, and reduced information processing speed can be other possible mechanisms of creativity decline that should be investigated in future studies.

Keywords : Multiple sclerosis, convergent thinking, divergent thinking, Creativity

Count: 84
Abstract ID: 151
subject: Emotion, Motivation and Behavior: Reward and the Brain
Presentation Type: Oral

Involvement of orexin-1 receptor antagonist within the nucleus accumbens, in the effect of forced swim stress on the reinstatement of morphine seeking behaviors

Submission Author: Ronak Azizbeigi

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Background and Aim : The high rate of relapse to drug use following drug administration and exposure to stress in addicted individuals is a major clinical problem in drug abuse and addiction treatment. Nevertheless, the mechanisms underlying drug relapse are not completely known. Orexinergic system is involved in primary rewards; the neural circuit of the ventral tegmental area (VTA), nucleus accumbens (NAc), prefrontal cortex and amygdala represents overlapping elements mediating the rewarding effects of drugs and stressful experiences. The NAc integrates reward-related information from the VTA. Also, it has been indicated that orexinergic system activates the mesolimbic dopamine projecting neurons to the NAc and promotes the development of reward in rodents. Therefore, the aim of this study was to determine the effect of administration of orexin-1 receptor (OX1R) antagonist, into the NAc on the drug-priming and Forced-Swim Stress (FSS)-induced reinstatement of morphine CPP.

Methods : In the current study, the conditioned place preference (CPP) paradigm was used to determine the role of orexin 1 receptors (OX1R) in the NAc in forced swim stress (FSS), as physical stress, and/or priming-induced reinstatement of morphine. The CPP was induced by injecting morphine (5mg/kg, SC for 3 days) and lasted for eight free-morphine days; the reinstatement was induced by administration of effective priming dose of morphine (1mg/kg; sc). The extinguished rats received intra-NAc injection of SB334867 as OX1R antagonist before effective priming dose injection of morphine (1mg/kg; sc). In others, the extinguished rats were given intra-NAc injection of SB334867 and then, they underwent FSS before injection of ineffective priming dose of morphine (0.5mg/kg; sc).

Results : Our results showed that intra accumbal administration of SB334867 could inhibit morphine priming-and FSS-induced reinstatement of extinguished morphine-seeking in the rats.

Conclusion : It seems that OX1R in the NAc may be involved in reward and could play an important role in the effect of stress on reinstatement of morphine-seeking behaviors in this area.

Keywords : Reward, stress, orexin system, nucleus accumbens, forced swim stress, conditioned place preference

Count: 85
Abstract ID: 138
subject: Cognition: Attention
Presentation Type: Poster

Effects of Bilingualism on Executive Attention: A review article

Submission Author: Jamileh Azizbeigiboukani

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Background and Aim : Bilingualism affects attention abilities. Executive attention as a type of attention network has a significant role in conflict resolution in bilinguals. Various studies have shown various results depending on Age of Acquisition (AoA) of participants and tasks which are used. In this review article, we are going to investigate this difference between results to prepare a clear outcome.

Methods : A review study related to the influences of bilingualism on executive attention was undertaken. We prepared this article by searching in databases namely: Science Direct, Scopus, Google Scholar, Pub Med. The search terms were used such as bilingualism, bilingual, executive attention, and executive control of attention. Finally, 10 studies had intended our information.

Results : Five studies have shown an association between levels of bilingualism or an age of acquisition with domains of executive attention. Two studies have not indicated any effects of bilingualism on executive control of attention. Besides, the results were mentioned in the study's Yang and Lust were different depended the task used.

Conclusion : Bilingualism has impacts on cognitive abilities including executive attention and their components such as inhibitory control and switching. Early bilingualism have notable effects on performances of participants in cognitive tasks like Attention network task (ANT), Simon, etc. Hence, early childhood bilingual children or adults have more proficiency in these tasks.

Keywords : Executive Attention, Executive Control of Attention, Bilingualism, Bilingual

Oral & Poster Presentations

8th Basic and Clinical Neuroscience Congress
December 18-20, 2019
Razi Hall, Tehran, Iran

Iran University of Medical Sciences

Iranian Neuroscience Society

Count: 86
Abstract ID: 319
subject: Neuropsychiatry and Psychology: Other
Presentation Type: Poster

Comparsion of distress tolerance, emotion regulation and perceived stress in MS patients and normal population

Submission Author: Alireza Azizi

Alireza Azizi[1]

1. assistant professor of Babol university of medical sciences

Background and Aim : Several studies have argued the difficulty in emotional regulation, low distress tolerance and perceived stress as multiple sclerosis traits. In this research, these variables are studied in Iranian culture.

Methods : The present study was a comparative study and Statistical population in this study includes all MS patients in the Iran's Multiple Sclerosis Center during the period of April & May in 2018 and their fellows that among Them ,120 people , 60 patients & 60 fellows were selected in the available sample method and completed the Difficulty in Emotion Regulation, Distress Tolerance Scale and Percived Stress Scale. Data were analyzed by SPSS24 softwares. Levine and Kolmogorov–Smirnov and T-test were used to analyze the research data.

Results : distress tolerance of MS patients was significantly lower than one in healthy subjects ($t=12.45$, $p>0.01$). The lack of acceptance of emotional responses ($F=11.23$, $p>0.01$), difficulties in participation in goal-directed behaviors ($F=17.46$, $p>0.01$), impulse control problems ($F=14.20$, $p>0.01$), lack of emotional awareness ($F=8.96$, $p>0.01$), difficulties in using emotional regulation strategies ($F=12.90$, $p>0.01$) and lack of emotional clarity in MS patients ($F=8.01$, $p>0.01$) were significantly higher than healthy subjects. Therefore, people with MS have difficulty in regulating of their emotions compared to healthy people. Perceived stress of MS patients was significantly more than the perceived stress of healthy people ($t=15.81$, $p>0.01$).

Conclusion : low distress tolerance, difficulty in emotional regulation and perceived stress are characteristic features of multiple sclerosis, and it is necessary to work on these features.

Keywords : multiple sclerosis, Distress Tolerance, Difficulties in Emotion Regulation, Percived Stress

Count: 87

Abstract ID: 448

subject: Special topics: Converging Technologies   (NBIC: Nano-Biotech-Information-Cognitive), euroscience and Nanotechnology, Neuroscience and Biotechnology, Neural Tissue Engineering

Presentation Type: Oral

Antioxidant and neurotrophic effects of silibinin extracted from Silybum marianum on olfactory ensheathing cells (OECs) in rat pups: An invitro study

Submission Author: Monireh Azizi

Monireh Azizi[1], Saiedeh Rashidi[2], Nasser Abbasi[3], Khairollah Assadolahi[4]

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Background and Aim : The olfactory nerve is the only cranial nerve that is renewed for the lifespan due to the presence of olfactory ensheathing cells (OECs). These cells secrete neurotrophic factors, such as NGF, BDNF to facilitate nerve regeneration, so transplantation of OECs has a high therapeutic potential for neurodegenerative diseases. Silibinin, active ingredient of the silybum marianum, has antioxidant, neurotrophic, and neuroprotective properties. Therefore, in this study, we investigated the antioxidant, neurotrophic effects of Silibinin on OECs extracted from rat pups.

Methods : The amount of silibinin in the extract Was evaluated by HPLC. OECs were extracted and cultured from the olfactory mucosal lamina propria of eight-day-old rat pups. Different concentrations of 1, 5, 10, 25, 50, 75, 100 and 125 μM silibinin were added to OECs cultures and its toxic and protective doses were determined by MTT assay. Protective and toxic concentrations of silibinin were then added to plates containing cultured cells and ROS and nitric oxide (NO) levels were measured by fluorimetric and griess methods, respectively. At the end, expression of NGF and BDNF proteins in OECs was also assessed by Western blotting.

Results : According to the HPLC method, the amount of silibinin in the concentration of 1.50 silymarin was 79.787 μg / ml. MTT assay showed that silibinin inhibited OEC cell growth in a dose- and time-dependent manner. Also, protective concentrations of silibinin decreased NO, ROS production and increased expression of BDNF and NGF neuroprotective proteins in cultured OECs.

Conclusion : The results of the present study confirm the antioxidant and neuroprotective properties of silibinin in the OECs in the invitro condition. Therefore, it seems that this substance can be used as a neuroprotective enhancer in the treatment of various neurodegenerative diseases.

Keywords : Neurological disorders; oxidative stress; olfactory ensheathing cells; neurotrophic factors; silibinin

Count: 88
Abstract ID: 59
subject: Epilepsy, Neural Excitability, Synapses, and Glia: Seizure and Epileptic Disorders
Presentation Type: Poster

The anxiolytic and antidepressant effect of Stachys lavandulifolia in the pentylenetetrazol kindled rat

Submission Author: Vahid Azizi

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Background and Aim : Epilepsy is the most common chronic neurological disorder disease, and its effect on behavioral statuses like anxiety and depression. In this study, the medicinal plant Stachys lavandulifolia, was used to evaluate its effect on anxiety and depression caused by PTZ in the rat.

Methods : Twenty-four rats were randomly allocated to 4 groups: control negative under treatment with PTZ (sub-threshold dose 35 mg/kg for one month), control positive under treatment with Phenobarbital (PB-30 mg/kg), and two PTZ groups under treatment with S. lavandulifolia extract (SLE-25, and -50 mg/kg). For anxiety parameters, the elevated plus maze (EPM) was used. The forced swim tests (FST) was employed to assess the antidepressant potential. Data were analyzed using SPSS.

Results : SLE administered at the doses of 25, and 50 mg/kg, ip reduced immobility time in the FST exerting antidepressant-like activity. In the EPM test, SLE at the same doses, produced the anxiolytic-like effect.

Conclusion : Our results showed that SLE could prevent anxiety and depression in the PTZ-kindled rats.

Keywords : Stachys lavandulifolia; Epilepsy; Anxiety; Depression; Elevated plus maze

Count: 89
Abstract ID: 410
subject: Neural Injuries and Neurodegenerative Disorders: Neurotoxicity, Neuroprotection, Inflammation
Presentation Type: Poster

Effect of thymol on amyloid β25-35-mediated PC12 cells death by activating protein kinase C and inhibiting oxidative stress

Submission Author: Zahra Azizi

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Background and Aim : Despite more than a century of intensive research on AD, few effective treatment options have been developed. Nowadays, several medicinal plants and their constituents have been suggested as possible treatments for AD. In this study, the neuroprotective effect of thymol against Aβ25-35-induced cytotoxicity was evaluated, and the potential mechanisms were determined. In this regards, we investigated whether thymol could inhibit cytotoxicity and oxidative damage caused by Aβ through antioxidant activity and stimulation of protein kinase C (PKC).

Methods : PC12 Cells were pretreated with Aβ25-35 for 2 h followed by being incubated with thymol for additional 48 h. Cell viability was measured by MTT method. Flurospectrophotometer was employed to observe intracellular reactive oxygen species (ROS) production. PKC activity was analyzed using ELISA.

Results : Our results indicated that, thymol could protect PC12 cells against Aβ25-35-induced cytotoxicity. Furthermore, the results demonstrated that, Aβ25-35 induces intracellular ROS production, while thymol could reverse this effect. Moreover, thymol could elevate PKC activity similar to Bryostatin-1. So, we mainly reported two points: first, thymol could reduce ROS levels in Aβ-treated PC12 cells, and second it might act as a PKC activator.

Conclusion : This study provided the evidence regarding the protective effect of thymol against Aβ25–35-induced cytotoxicity in PC12 cells. Also, the results suggested that, neuroprotective effects of this compound against Aβ25-35 might be through attenuating oxidative damage and increasing the activity of PKC as a memory-related protein. Thus, thymol was found to have therapeutic potential in preventing or modulating AD.

Keywords : Alzheimer's disease (AD); amyloid β (Aβ); thymol; reactive oxygen species (ROS); protein kinase C (PKC); PC12 cells.

Count: 90
Abstract ID: 79
subject: Development: Other
Presentation Type: Poster

Evaluation of X-ray equivalent dose measurement in the radiology department of state and semi-governmental centers of Sistan and Baluchestan province (1397)

Submission Author: Sahar Azri mofrad

Sahar Azri mofrad[1], Zeynab Yazdi Sotoodeh[2], , Reyhabeh Abbasi Moghadam[3]

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2. Faculty of Technology, Department of Technology, Department of Paramedicine, Zahedan University of Medical Sciences, Iran
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Background and Aim : Radiation from natural rays such as cosmic and radio beams such as radiofrequency can cause harmful effects on humans and other living organisms. This study was designed to measure the relative distribution of the particle size distribution in the waiting room Radiology of public and semi-governmental centers in Sistan and Baluchestan province (1397).

Methods : This descriptive-analytic study was conducted on waiting rooms of 20 sections of Radiography and CTscan in governmental and semi-governmental centers of the province in 1397. Selectable samples were easy and affordable. A dosimeter has been used to study the Gayer Müller dosimeter of the American company LND712, an alpha, beta, gamma and X-ray diagnostic measurement system. The dose rate was in the range of 0.0001 to 1100 microsurts per hour and with a precision of 10% ± 15% and an equivalent dose rate in mSv. Dosimeters were performed at different points in the waiting room of the radiological centers, taking into account variables such as the highest Lat lumbar conditions, the dot dosimeters, the start and end of the dose record, the distance from the waiting room, and the control and control. Data were analyzed using SPSS software and Kruskal-Wallis test and t-test Independent..

Results : : Imam Khomeini Khash Hospital with a dose of 3.275 mc / h, doses above the standard level, and Ali Asghar Hospital with a dosage of 0.019 mc / hr had the lowest dose rate (P <0.001). Also, the average of the leakage doses of the back door The CTscan room was 1,935 microsites per hour. (P <0.018) at a distance of one meter from the control room and the waiting room for all of the imaging sections studied, the leakage doses were at the radiation exposure level.

Conclusion : The average dose of leakage doses behind the door of the waiting room for radiography compared with CTscan in the province with little difference. This significant difference in the dose rate is related to factors such as the life of the imaging apparatus, the time taken to construct imaging rooms, and the degree of utilization of materials used in the walls of the imaging chambers

Keywords : : Radiographic Devices, Equivalent Dose, Radiology Exit Hall, Conservation

Count: 91
Abstract ID: 357
subject: Development: Aging
Presentation Type: Poster

Persuasive discourse in aging

Submission Author: Zahra Babaei

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Background and Aim : Elderly is often described by changes in cognitive functions which affect the receptive and expressive capabilities of the language. Since language plays a significant role in human life for establishing social interactions, and also because speech-language pathologists make important contributions in maintaining and promoting communication of the senior, and regarding the fact that the awareness of discourse features in the older people can lead to improvement of speech treatment disorders in the elderly, it seems that it is necessary to examine the language of the older people.

Methods : This is a cross-sectional descriptive-analytic study. In this study, a persuasive discourse of 92 adults ranged between 19 to 75 year olds which were divided into four age groups (19-24, 25-39, 40-60, 60-75 years) have been examined. Initially, each subject filled out the written consent form for participation in the research and personal information. Then cognitive assessment was performed using MMSE screening test and finally, the ability of persuasive discourses were evaluated. The Kolmogorov-Smirnov test was used to verify the normality of the data. Kruskal-Wallis test was used for coherence and cohesion that did not have normal distribution. Data analysis was performed using SPSS software.

Results : There is a significant statistical difference between the coherence in the elderly group and each of the other three groups in persuasive discourse ($p < 0.05$), but there was no significant difference in the cohesion variable between the elderly and the first age group.

Conclusion : The results of this study showed that the ability related to discourse, especially the coherence, is influenced by age and especially aging. For this reason, speech-language pathologists need to pay special attention to the underlying linguistic and cognitive needs of these age groups and incorporate them into their clinical plans.

Keywords : aging, discourse, persuasive

Count: 92
Abstract ID: 295
subject: Neural Injuries and Neurodegenerative Disorders: Dementia
Presentation Type: Poster

Obstructive sleep apnea may increase the risk of Alzheimer's disease

Submission Author: Fatemeh Babaie

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Background and Aim : Amyloid-β 1–40 (Aβ 1–40) and amyloid-β 1–42 (Aβ 1–42) are the proteins known to be involved in the pathogenesis of Alzheimer's disease (AD)–the most common cause of dementia in the elderly. Hypoxia is suspected to be one of conditions associated with Aβ plasma level increase. A common reason of hypoxia is obstructive sleep apnea (OSA), characterized by recurrent episodes of apnea. The aim of the study was to evaluate plasma Aβ 1–40 and Aβ 1–42 concentrations in patients with OSA.

Methods : Patients with suspected OSA (n = 112) underwent polygraphic examinations Patients with confirmed OSA (n = 81) showed apnea/hypopnea index greater than or equal to 5. Mild and moderate form of the disease was defined when AHI was 5–30 (n = 38, OSA+), severe–when AHI was >30 (n = 43, OSA++). Individuals with AHI<5 (n = 31) served as control group (OSA-).

Results : Aβ 1–40 concentrations in OSA++ (191.1 pg/ml) group was significantly (p<0.05) higher compared with OSA- (76.9 pg/ml) and OSA+ (159.4 pg/ml) and correlated with selected parameters of hypoxemia severity. There were no differences in Aβ 1–42 concentration between the groups.

Conclusion : In patients with severe OSA Aβ 1–40 plasma concentrations are significantly higher compared with OSA- and OSA+ and seem to be related to hypoxia severity, which may indicate increased risk of AD development in this group of patients.

Keywords : obstructive sleep apnea; Amyloid-β; Alzheimer's disease

Count: 93
Abstract ID: 85
subject: Neurorehabilitation and Regeneration: Other
Presentation Type: Poster

Developmental supportive techniques to reduce intraventricular hemorrhage in preterm infants

Submission Author: Mohadese Babaie

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Background and Aim : Intra ventricular hemorrhage is a serious and common problem in premature and low birth weight infants due to factors such as respiratory distress, blood pressure changes, pneumothorax, and so on. It results in irreversible neurodevelopmental deficits that are associated with high mortality rates. However, in many cases it is preventable even before the infant is born. This study was performed to evaluate the Development supportive techniques available to reduce intra ventricular hemorrhage in preterm infants based on the results of studies.

Methods : In this review study, information was collected between 2005 and 2019 through a review of related literature and articles and a targeted search for information sources in English and Persian articles and databases. The keywords were neurodevelopment, premature infants, neonatal intensive care units, intra ventricular hemorrhage. Of the 68 articles found, 20 were eligible.

Results : Prevention of intra ventricular hemorrhage in preterm infants begins from fetal period with prenatal care to improve fetal weight gain, control of blood pressure and maternal blood glucose, treatment of pregnancy infections, stress reduction, rest and proper nutrition to prevent delivery early. The delivery process should be monitored to ensure that the infant is not hypoxic. After birth, care program continues with a medical approach with complementary therapies and developmental supportive techniques. These include tactile or massage therapy, use of neonatal positioning, reduction of environmental stimuli such as light and relaxation of the environment, and maintenance of natural temperature, with particular attention to the neonatal sleep cycle, especially REM, for neurodevelopment and vision, minimization Painful procedures, non-feeding sucking, Kangaroo mother care, monitoring and interpreting infant behavior, and training parents and developmental care programs. These methods ensure energy conservation for the proper brain development and physiological stability of the infant, minimize the stress and pain of the infant, minimize brain circulation and arterial oxygen saturation, and reduce intra ventricular hemorrhage.

Conclusion : Promoting neonatal neurodevelopment, as a treatment priority, is possible by preventing intra ventricular hemorrhage. This will be achieved if a neonatal-family-based care approach is planned along with ongoing follow-up from admission to the neonatal intensive care unit until after discharge. Therefore, an individualized developmental care and assessment program should be based on a comprehensive understanding of the infant's and family's circumstances (strengths, weaknesses, opportunities and threats) and that requires strong collaboration between the care team.

Keywords : Intra ventricular hemorrhag; Premature infant; Neurodevelopment

Count: 94
Abstract ID: 175
subject: Development: Evolution of Developmental Mechanisms
Presentation Type: Poster

Transcriptional and Epigenetic Changes of Brain Derived Neurotrophic Factor Following Prenatal Stress: A Systematic Review of Experimental Studies

Submission Author: Negin Badihian

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Background and Aim : Studies performed in recent years, emphasize the importance of gestational period in neuropsychological development. One of the genes that play important roles here and may undergo changes by prenatal stress (PNS) exposure, is the gene coding brain derived neurotrophic factor (BDNF). This systematic review aims to investigate transcriptional and epigenetic changes of BDNF in the brain caused by PNS in experimental studies.

Methods : Systematic search of PubMed, Scopus, Web of Science and Cochrane CENTRAL databases were performed based on the predefined protocol. The PRISMA statement was used for reporting the present study.

Results : Primary searches resulted in 2132 studies. Excluding unrelated studies, finally 43 studies were found to meet our inclusion criteria. Rats, mice and guinea pigs were used in 28, 14 and 1 studies, respectively. Most of the studies evaluated hippocampus or prefrontal cortex. Most of the experiments used prenatal restraint stress paradigm and investigated the changes only in male offspring. Most of the experiments induced stress almost during third trimester of pregnancy. Decreased or unchanged BDNF total mRNA and BDNF mature protein, with hypermethylation in the coding exons following PNS were the most reported findings. Day of the sacrifice varied significantly between studies.

Conclusion : PNS during critical periods of brain development can lead to long lasting persistent effects on different brain regions of the offspring. Hippocampus and PFC are the most vulnerable regions and could represent different transcriptional and epigenetics changes of BDNF gene following PNS. Further studies evaluating the importance of these findings in humans are essential.

Keywords : Brain Derived Neurotrophic Factor, Prenatal Stress, Brain, Experimental Studies, Systematic Review

Count: 95
Abstract ID: 12
subject: Neuropsychiatry and Psychology: Mood Disorders
Presentation Type: Poster

Chiari Malformation with Depression and Sever Psychosis; a case report

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Background and Aim : Introduction: We introduce a patient who has been evaluated for headache and some psychiatric symptoms from two years ago, and the diagnosis of type I chiari has been introduced to her. She has experienced episodes of depression and, after assessments, she has been advised to undergo decompression surgery. In the recent episode of the disease, severe symptoms of depression with psychotic feature were seen and the patient complained of headache in the occipital area and nausea. Along with these recent symptoms, the patient suffers from a long-standing obsessive-compulsive disorder from adolescence, which has been under proper medical control, along with a family history of obsessive-compulsive disorder in the patient's mother. The presence of neurological symptoms associated with anatomical cerebral malformation and accompanying severe psychiatric manifestations in the patient that some of them are with family history and some of them are without it, together with different therapeutic responses in this patient, are specific features of this introduction.

Methods : case: The patient is a 41-year-old woman with a history of treatment-resistant headaches over the past two years, who has had affective and psychotic symptoms in parts of this period. In the imaging survey, type 1 Chiari malformation is presented to the patient.In the recent period, the patient suffers from exacerbation of headache accompanied by nausea, depressed episode, auditory and visual hallucinations accompanied with suicidal and filicidal idea, and ultimately accompanied by medication, due to the severity of the symptoms undergoing electroconvulsive therapy. Also, after two years of unwillingness to undergo surgery, the patient admitted to the neurosurgeon to assess, and, if necessary, undergo surgery.

Results : As it seems, there may be a relationship between type 1 chiari and some psychiatric manifestations of this patient. Such demonstrations, due to such anatomical or functional association, give rise to an inadequate response to pharmaceutical therapy with periodic recurrence. other psychiatric events unrelated to this process generally depend on the type of response seen in the usual psychiatric disorders and the likelihood of having a family history and long-term control of symptoms is more. Also, in this article, we investigate the possible effect of chiari malformation on mood and psychosis manifestation, not only through the effect of compression on the brain stem, spinal cord or cervical spine, but also on the indirect side effects of this abnormality, by making changes in neurotransmitters. In addition, while referring to the functions of the cerebellum in non-motor function including cognitive and emotional domains, the likelihood of the effects of type I chiari malformation, on mood and psychotic disorders have been evaluated from this perspective.

Conclusion : It is necessary to pay attention to all diagnostic and therapeutic aspects of psychiatric disorders accompanied with neurological disorders. The use of imaging techniques at the right time, attention to therapeutic treatments, and considering surgical procedures according to the circumstances are essential in managing these conditions.

Keywords : Chiari Malformation,Depression, Sever Psychosis

Count: 96
Abstract ID: 283
subject: Epilepsy, Neural Excitability, Synapses, and Glia: Seizure and Epileptic Disorders
Presentation Type: Oral

The Effect of Probiotics Mixture on Learning and Spatial Memory in the kindeled Rats

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Background and Aim : Repeated seizure attacks lead to extensive neuronal damage and cognitive impairment such as memory loss and learning. Probiotics have been shown to reduce the frequency of seizures, resulting in extensive neuronal damage, and cognitive impairment such as memory loss and learning. Probiotics have reduced serum nitric oxide levels and improved memory and space learning The present study was designed to investigate the effect of probiotics on learning, memory and the antioxidant nitric oxide in epileptic rats.

Methods : In this experimental study, 40 male rats were randomly divided into five groups: control; kindeled by penthylenetetrazole (PTZ); kindeled and valproic acid administered (VPA); kindeled after probiotic treated (probiotic + PTZ), kindeled before probiotic treatment (PTZ + Probiotic). The animals were treated by a mixture of probiotic bacteria for 4 weeks. Chemical kindling was induced by intraperitoneal injection (35 mg / kg) of PTZ every 48 hours for 24 days. The learning and spatial memory were evaluated by Morris water maze. The serum nitric oxide was assayed by Miranda method. Data were analyzed by one-way ANOVA and LSD post-test.

Results : No variation was evident between the Control and PTZ group, in terms of memory, learning and serum levels of nitric oxide. Compared to the vehicle treated animals the probiotic supplemented groups improved the learning process ($P<0.001$) and spatial memory ($P<0.05$) in epileptic rats. The intervention also reduced serum nitric oxide levels ($P<0.05$).

Conclusion : Probiotic supplementation reduces the level of nitric oxide and improves the learning and memory process. Possible relationship between oxidative stressors and behavioral behavior needs to be further investigated.

Keywords : probiotics, spatial memory, chemical kindling, rat

Count: 97
Abstract ID: 537
subject: Neural Injuries and Neurodegenerative Disorders: Neurotoxicity, Neuroprotection, Inflammation
Presentation Type: Oral

Immunomodulatory effects of Silymarin in animal model of Multiple Sclerosis

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Background and Aim : Multiple sclerosis, an autoimmune disease, in result of nerve cells demyelination in the brain and spinal cord causes nerve dysfunction. On the other hand, Silibinin, the major pharmacologically active compound of silymarin of the Silybum marianum fruit extract, have an anti-inflammatory agent that could be suppress the inflammatory response of immune system. Therefore, we hypothesized that silymarin could be effective in the MS therapy and we tested its immunomodulatory effects in experimental animal model.

Methods : The study was performed on adult female Wistar rats (200-150 g). Multiple sclerosis disease was induced by intraperitoneal and intraperitoneal injection of poisonous toxin. In the pretreatment group, animals received intraperitoneally injection of silymarin (50 mg / kg) 17 days prior to intraspinal injection of venom (250 ng / 0.2cc / rat). In the treatment group, the animals were treated with silymarin (50 mg / kg) after 13 days of the intraperitoneally injection of toxin. The behavioral symptoms were scored on the basis of the paralysis of the tail and the limbs. At the end of the study, we evaluated inflammatory response and cytokine (IL17, TNF-α, IL-1β) production in CSF, serum samples, brain and spinal cord by spectrophotometry.

Results : The severity of the signs was significantly decreased in the pre-treatment and treatment group (from 27th to 30th) treated by 50 mg / kg Silymarin than the MS untreated group. Our results showed that the cumulative signs in treated and pretreated groups with 50 mg / kg silymarin were significantly lower than MS patient group. Our results showed that inflammatory cytokines in brain, serum samples, CSF and spinal cord were significantly different in pre-treatment and treatment groups than patient group.

Conclusion : There is little information about the effects of silymarin on behavioral disorders in MS patients. As a result, this study can be a strong point in the treatment of MS disease. We concluded that Silymarin significantly reduced the inflammation signs in MS. Also, herbal medicine silymarin, as an alternative treatment for MS patients modulate the immune system.

Keywords : Multiple Sclerosis, Silymarin, Animal

Count: 98
Abstract ID: 536
subject: Pain and Sensory Systems: Other
Presentation Type: Poster

Milnacipran attenuated carrageenan-induced hyperalgesia and inflammation in male rats; the involvement of MPO activity and oxidative stress

Submission Author: Shukoofe Bagheri

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Background and Aim : Many injuries caused pain and inflammation, which are one of the major challenges for physicians. Existing anti-inflammatory and analgesic drugs such as NSAIDs and opioids have many side effects. In this study, the analgesic and the anti-inflammatory effects of milnacipran were investigated on carrageenan-induced nociception and inflammation in male rats.

Methods : Pain and inflammation were induced by intraplantar injection of λ-carrageenan (1% v/v) in the right hind paw. Indomethacin (10 mg/kg: i.p) or milnacipran (10, 20 and 40 mg/kg: i.p) were administered half an hour before carrageenan injection. Analgesia was measured by Hot plate test, and inflammation was assessed by plethysmometer. Finally, the effect of carrageenan and milnacipran on lipid peroxidation, TNF-α, IL-1ß, IL-6, myeloperoxidase (MPO) activity, nitric oxide (NO) and total antioxidant capacity (TAC) status evaluated in the hind paw tissue.

Results : The results showed that carrageenan caused hyperalgesia and inflammation in the hind paw tissue. Milnacipran (20 and 40 mg/kg: i.p) significantly attenuated ($p<0/01$) inflammation percentage and significantly increased ($p<0.001$) nociception threshold. Also, milnacipran (20 and 40 mg/kg) significantly suppressed malondialdehyde (MDA), NO levels ($p<0.05$), MPO activity, TNF-α, IL-1ß and IL-6 ($p<0.001$) following carrageenan ijection. Additionally, milnacipran (10, 20 and 40 mg/kg) augmented TAC status subsequent to intraplantar injection of carrageenan in the hind paw tissue in a significant level ($p<0.05$).

Conclusion : In the present study, milnacipran showed anti-nociceptive and anti-inflammatory effects on carrageenan-induced hyperalgesia and inflammation. Milnacipran reduced inflammatory edema and increased the paw withdrawal threshold probably through suppression of MDA, NO, TNF-α, IL-1ß and IL-6 levels and MPO activity and increasing of TAC status in the hind paw tissue. Therefore, milnacipran holds important potential as an anti-inflammatory and anti-nociceptive drug. Although, there is need more clinical trial studies to prove this issue.

Keywords : Carrageenan, Milnacipran, Plethysmometer, Pain and Inflammation, Analgesia, Myeloperoxidase, Malondialdehyde, Rat.

Count: 99
Abstract ID: 50
subject: Neurorehabilitation and Regeneration: Physiotherapy
Presentation Type: Oral

Comparison of transcranial direct current stimulation of primary motor cortex and cerebellum on static balance in older adults

Submission Author: Hamzeh Baharlouei

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Background and Aim : Falling is a major problem in older adults. Transcranial direct current stimulation (tDCS) is a neuromodulation technique to improve balance in older people. The majority of previous studies assessed the effect of cerebellar and M1 tDCS but a less attention has been yet paid to compare the effect of stimulation of these two regions. The objective of this study was to compare the effectiveness of tDCS on cerebellum and M1 on balance in older adults.

Methods : In this cross over double-blinded sham-controlled design study, 32 healthy older adults assigned randomly in two groups of M1 and cerebellum tDCS. Each groups received active and sham stimulation in a cross over design with one week interval. Before and after of each session the mediolateral and anterioposterior postural sway was assessed by force plate in single and dual task conditions

Results : The Mixed ANOVA analysis showed that the main effect of time and interaction between time and stimulation condition (active or sham) is significant in both groups of M1 and cerebellum for total path length and mean velocity of center of pressure in both directions and both balance task conditions. There was no significant difference in efficacy of cerebellar and M1 stimulation in between group analysis.

Conclusion : Anodal tDCS of cerebellum and M1 could improve postural balance indices in healthy older adults and these two techniques have similar effects on static balance.

Keywords : transcranial direct current stimulation, Postural balance, older adults, cerebellum, M1

Count: 100
Abstract ID: 602
subject: Neural Injuries and Neurodegenerative Disorders: Demyelinating Disorders
Presentation Type: Poster

Nutritional management in patients with multiple sclerosis, A review of the last studies

Submission Author: Asma Bahreini

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Background and Aim : MS is a chronic disease that affects the central nervous system (CNS) is associated with neurologic side effects that can lead to malnutrition and dietary influences. Proper nutritional management in patients with MS can reduce complications and enhance speed of recovery. The purpose of this study was to review of nutritional management in patients with MS that is correct.

Methods : This study reviewed the articles in the databases ISI (web of knowledge) and PUBMED searches based on keywords nutrition, management, and multiple sclerosis has been carried out in the years 1990- October 2019.

Results : The effects of MS and nutritional management are as follows: Dysphagia and Swallowing Disorders: Nutrition Management of Dysphagia is multiple small meals, soft diet or pureed foods. - Depression and Anxiety: One of the major complications of MS is depression and anxiety that Omega-3 supplements containing EPA and DHA can be effective in treating depression. - Digestive System for modulating gastrointestinal motility sufficient intake of fiber, fluids and physical activity is recommended. Aerobic exercise is preferable. –neurological Bladder: Most MS patients due to adverse effects of multiple sclerosis on the bladder, do not get enough fluids.

Conclusion : Nutritional strategies are increasing fluid intake and fluid intake from various sources in waking up time. For improving of Urinary tract infections, consumption of blueberries (blueberry) can have significant impact.

Keywords : nutrition ; management ; multiple sclerosis

Count: 101
Abstract ID: 606
subject: Neural Injuries and Neurodegenerative Disorders: Demyelinating Disorders
Presentation Type: Oral

Comparison of fats/oils intake and disability in patients with MS and patients with NMOSD

Submission Author: Asma Bahreini

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Background and Aim : Multiple Sclerosis (MS) and Neuromyelitis Optica Spectrum Disorder (NMOSD) are two neurodegenerative, autoimmune and inflammatory diseases that involve central nervous system (CNS). Assessment of dietary intakes of fats is an approach that has been used to evaluate diet-disease and diet-disability association. The aim of this study was to investigate of fats/oils intake and disability in patients with MS and patients with NMOSD.

Methods : 126 patients with diagnosed MS (84 RRMS, 21 PPMS and 21 SPMS) and 68 patients with diagnosed NMOSD with MRI assessment of brain and spinal cord were recruited from multiple sclerosis clinic in Kashani Hospital of Isfahan University of Medical Sciences, Isfahan, Iran include from present case control study. A 168-item semi-quantitative food frequency questionnaire was used for assessment of dietary intakes of fatty acids. Medical history questionnaire, Expanded Disability Status Scale (EDSS) and Fatigue questionnaire record from all participants.

Results : Mean ± SD of EDSS, fatigue scale, and dietary intakes of saturated fatty acids (SFAs) in patients with MS were lower than NMOSD patients, but were not significant. Total fat, Mono Unsaturated fatty acids (MUFAs) and Poly Unsaturated Fatty Acids (PUFAs) intakes in MS patients were higher than patients with NMOSD without any significant differences. There was a negative significant correlation between dietary intakes of total fats (r=-0.975, p=0.025) and PUFAs (r=-0.986, p=0.014) with EDSS, total fats (r=-0.995, p=0.005) and MUFAs (r=-0.964, p=0.036) with fatigue Scale in patients with MS. In addition, there were negative significant correlation between dietary intakes of PUFAs (r=-1.054, p=0.001) with EDSS, total fats (r=-0.951, p=0.046) and PUFAs (r=-0.991, p=0.009) with fatigue Scale in patients with NMOSD. There were positive significant correlation between SFAs with EDSS (r=0.998, p=0.003) in patients with MS and positive significant correlation between SFAs with EDSS (r=1.125, p=<0.001) and fatigue scale (r=1.218, p=<0.001) in patients with NMOSD .

Conclusion : Our study demonstrated that there is a positive significant correlation between intakes of SFAs with EDSS in patients with MS and patients with NMOSD. In addition dietary intakes of PUFAs can decreases EDSS in all patients with MS or NMOSD and decreases fatigue scale in NMOSD patients. Dietary intakes of fats and types of fatty acids may impress on disability in MS and NMOSD Further studies with larger sample sizes and other population needed to prove this correlation.

Keywords : Multiple Sclerosis; Neuromyelitis Optica Spectrum Disorder; Diet ; Fatty Acids

Count: 102
Abstract ID: 455
subject: Neuropsychiatry and Psychology: Addiction (Drug, Alcohol, Internet, Food) and Gambling
Presentation Type: Poster

Role of impulsivity in addiction to common forms of tobacco addiction: is impulsiveness a risk factor?

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Background and Aim : Tobacco consumption, in different ways, is a global problem because chronic abuse of tobacco products may cause health problems, including cancer, lung diseases, and cardiovascular diseases. The main psychoactive compound in the tobacco leaves that leads to tobacco addiction is nicotine. Tobacco consumption in the form of smoking is more common than other forms because smoking is an efficient form of nicotine delivery to the brain. Previous research indicates that many environmental and genetic factors are involved in addiction. Among these factors is impulsivity that is a heritable trait. Impulsivity can be defined with some traits: to make risky decisions and the preference for instant rewards, so the impulsive persons tend to choose a low, but quick reward against larger and late rewards. Considering the role of impulsivity in different forms of behavioral and substance addictions, the present review conducted to summarize current knowledge about the role of impulsivity in tobacco smoking

Methods : The methods for collecting scientific information about the present question was searching the databases (ISI Web of science, PubMed, Google Scholar, and ScienceDirect) for the various combinations of the words, addiction, substance abuse, nicotine, tobacco and impulsivity.

Results : There are many studies showing a positive association between impulsivity and cigarette smoking; based on this evidence impulsiveness is a risk factor for tobacco addiction. For example, in populations of psychoactive disorders like ADHD and schizophrenia the individuals are more impulsive and smoke with a higher rate than the normal population individuals. Contrary to cigarette smoking, it seems that impulsivity has a negative association with the water-pipe smoking; the more impulsive persons, compared to the less impulsive ones, tend to use water-pipe to less extent.

Conclusion : impulsiveness differently affects the various forms of tobacco smoking.

Keywords : Impulsivity, Nicotine, Addiction

Count: 103
Abstract ID: 467
subject: Cognition: Working Memory
Presentation Type: Poster

The Effectiveness of Transcranial Direct Current Stimulation(tDCS) from the working memory and intelligibility in children with Learning Disorders

Submission Author: Rogayeh Bahri

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Background and Aim : The aim of this study was to determine the effect of transcranial direct current stimulation (tDCS) on executive functions in children with learning disabilities

Methods : The research method is a semi-experimental design with pretest-posttest design with control group. According to the research objective, this research is an applied research. In terms of collecting data, field research was used as a cross-sectional study. The statistical population consisted of all elementary students with learning disabilities who have been referred to Omid city learning center in Azarshahr city during the academic year of 1996-97. The sample consisted of 20 students of this society who were selected through targeted sampling and randomly assigned to the experimental group (10 persons) and the control group (10 persons). Research instruments consisted of tDCS device for providing electrical stimulation, active memory subscales and Wechsler's intelligence explanation for children, respectively, for evaluating active memory and word intelligibility variables and Wisconsin card sorting test to evaluate the cognitive flexibility variable. Data analysis was used for multivariate covariance analysis and paired t-analysis.

Results : The findings showed that tDCS stimulation was effective on digit working memory in children with learning disabilities, but they are not effective in understanding the language.

Conclusion : The acquisitive findings indicate that the protocol of tDCS applying incrases the network cortical excitability of brain regions that play an important role in executive functions. Therefor, it can be used as a nonpharmacological treatment in rehabilitation of children with special learning disorders.

Keywords : Direct Electric Brain Electric Stimulation, Working Memory, intelligibility, Learning Disorders.

Count: 104
Abstract ID: 176
subject: Neuropsychiatry and Psychology: PTSD
Presentation Type: Poster

Aloysia citrodora extract decreased hormonal signs of post-traumatic stress disorder (PTSD) induced by electric shock in rats

Submission Author: Zahra Bakhshandeh

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Background and Aim : Aloysia citrodora is a medicinal plant which has been has various used in traditional medicine. Traditionally, this medicinal plant has sedative and anti-anxiety, anti-stress and memory improvement effects and has been used to cure different diseases such as migraine, sleep disorders, and etc. The post-traumatic stress disorder (PTSD) is among the most important mental disorders of our century which causes great stress and several complications for the afflicted person. Nowadays, the definition of PTSD comprises not only those affected by the accident, but also those who have witnessed it. Therefore, in the current study, we aimed to investigate the effects of Aloysia citrodora extract on hormonal signs of PTSD caused by electric foot shock.

Methods : Male Wistar rats (250-300 g weight) were used in this study. The animals randomly received electric foot shock (0.1 mA) for 100 seconds over a period of 10 days. After returned to cages to repose for 21 days, the animals were put back into the stress box but received no stress. The animals received different doses of Aloysia citrodora extract (5, 10, 20 mg/kg) intraperitoneally 10 min before placing into the stress box (n = 7-9 rats/group). Control group received saline (1 mg/kg). Plasma corticosterone levels were assessed by ELISA kit in control and treated animals.

Results : One-way ANOVA showed that stress elevated plasma corticosterone level (129 nmol/L) concentration in the control animals. Intraperitoneal administration of the Aloysia citrodora extract reduced plasma corticosterone level (81 nmol/

Conclusion : These findings indicate that Aloysia citrodora extract can reduce hormonal signs of PTSD and can use as an agency for moderation of PTSD signs.

Keywords : Post-traumatic stress disorder (PTSD); Aloysia citrodora extract; Corticosterone

Count: 105
Abstract ID: 190
subject: Neuropsychiatry and Psychology: Addiction (Drug, Alcohol, Internet, Food) and Gambling
Presentation Type: Poster

Evaluating the role of cinnamon hydroalcoholic extract on morphine deprivation syndrome and subsequent depression in male mice

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Background and Aim : These days addiction is one of the fundamental problems of human societies. Duo to the side effects of chemical drugs on addiction, finding plants with similar properties can be helpful. Cinnamon is a medicinal plant posing various effects. Cinnamon contains chemicals components such as cinnamaldehyde. Previous research has suggested the antidepressant effects of cinnamon. Goal: In this study, we decide to investigate the anti-addictive effects of cinnamon and examine its effects on depression.

Methods : In this study, 21 male mice were divided into 3 groups: control, morphine and morphine + cinnamon. The morphine was administrated four-day period in order to induce addiction. The group also received intraperitoneal injection of cinnamon extract at doses 500 mg / kg of morphine each time. At the end of the procedure after injecting naloxone, morphine deprivation syndrome behaviors were assessed, and finally depression behaviors were examined.

Results : according to our result cinnamon extract improved morphine withdrawal behaviors in the extract receiving group. In addition, in this group depression was lower than the morphine group.

Conclusion : Cinnamon extract reduced morphine effects and subsequent morphine withdrawal behaviors due to its chemical components affecting the dopaminergic system. On the other hand, due to the sedative compounds in cinnamon extract, it has been able to reduce the effects of depression.

Keywords : Morphine, Cinnamon, Depression, Addiction

Count: 106
Abstract ID: 249
subject: Cognition: Executive Function (Decision Making, Reasoning, Problem Solving)
Presentation Type: Poster

Safety and efficacy of Memantine on cognitive profile of epileptic patients; A pilot, randomized, double-blinded, placebo-controlled clinical trial

Submission Author: Pargol Balali

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Background and Aim : The prevalence of cognitive impairment among epileptic patients is around 40%. Disturbances in cognitive domains, especially memory, can lead to forgetting medications and poor seizure control and no medication has been approved for treatment of this problem yet. In previous studies, Memantine, a noncompetitive N-Methyl-D-aspartate (NMDA) receptor antagonist, has been recommended as a new treatment for this issue. It can block the excitotoxicity pathway on hippocampus which can prevent hippocampal sclerosis, following seizures and memory dysfunction.

Methods : This was a pilot, randomized, double-blinded, placebo-controlled parallel group trial conducted in the Neurology Clinic of Imam Khomeini Hospital. Participants were randomly assigned to two groups to receive either Memantine or Placebo. They received 5mg of Memantine or placebo for the first eight weeks and 10 mg for the second eight weeks. Safety of this drug was our primary outcome. Also, subjects did several cognitive tests, MMSE (Mini-mental State Examination), MoCA (Montreal Cognitive Assessment) and FAB (Frontal Assessment Battery) during the first and last visit. Our secondary measures were obtained from comparing these two results.

Results : Sixty eligible patients have participated in the study and 37 of them continued the study to the end, as two were diagnosed with pseudo seizure, three patients had drug intolerance and the rest of the exclusions were due to lack of follow up or compliance. Our analysis demonstrates no significant change in MMSE and MoCA score after intervention in either groups (P-value>0.05), but a significant improvement in FAB score was seen after adjustment for age, baseline FAB and anti-epileptic drugs at the end of the 16th week (P-value=0.030).

Conclusion : Our data shows that Memantine is a safe and useful drug in the management of cognitive difficulties in patients with epilepsy. Our results revealed that Memantine is particularly effective in improving executive function in these patients.

Keywords : Epilepsy; Memantine; Cognition

Count: 107
Abstract ID: 243
subject: Emotion, Motivation
and Behavior: Motivation and Emotion
Presentation Type: Poster

Frequency oscillations bandpower from respiratory related evoked potential in emotional contexts

Submission Author: Sobhan Bamdad

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Background and Aim : A non-invasive method to study the cortical processing of respiratory sensations is respiratory related evoked potentials (RREP). RREP signal is averaged epochs which made by same and random occlusions in airway as events when EEG is recording. In this study RREP was extracted by paired occlusions (first occlusion= S1 and second occlusion= S2) in inspiratory phase. RREP like EEG is the result of activities and oscillations performed in different frequency bands (delta, theta, alpha, and beta). we tested the hypothesis that frequency bands power of RREP from S2 is smaller than RREP from S1 and emotional contexts have impact on frequency bands power.

Methods : 21 non-smoking healthy adults between 20 and 30 years were participated for this study and all subjects didn't have any history of neurological, respiratory or cardiovascular diseases based on self-report. The pulmonary function test (PFT) was performed by the spirometer. The subject was trained to breathe through a face mask that connected to a three-way tube connector and one way of this connector connect to an occlusion valve to make obstruction in respiration and the other one is connected to a differential pressure sensor which send respiratory pressure data as a channel of signal to biosignal recorder. Two occlusions (S1 and S2) of 150 millisecond were applied on every 4 randomly inspiratory phase by automatic respiratory apparatus and interval of S1 and S2 was 500 millisecond . The occlusion valve has a 30-millisecond constant delay after each order to activate of the solenoid valve to turn on. The subject wore a 15-channel EEG electrode cap that connected to EEG biosignal recorder (g.USBamp, g.tec Austria). EEG signal was sampled at 512 Hz. Data were analyzed using Matlab, pre-processing (using bandpass filter 1 to 30 Hz, reject signal by eye and baseline correction) by EEGlab toolbox and results were statistically analyzed in Graph-Pad Prism.

Results : Frequency bands power (Delta 0.5-4 Hz, Theta 4-8 Hz, Alpha 8-12 Hz, Beta 12-30 Hz, and all band frequency range 0.5-30 Hz) from S2_RREP is significantly smaller than S1_RREP in three emotional contexts. And there are some results between pleasant and unpleasant results which show significantly different.

Conclusion : Repetitive respiratory stimulation has fewer frequency bands power and also this stimulation has less information for the brain which supports previous other findings.

Keywords : respiratory related evoked potentials ; Frequency bandpower ; emotion context

Count: 108
Abstract ID: 216
subject: Neural Injuries and Neurodegenerative Disorders: Spinal Cord Injury
Presentation Type: Oral

Effect of Astaxanthin, Selenium and Electrical stimulation on expression of CatSper 1, 2 genes and proteins, sperm parameters and spinal cord repair in Rat's spinal cord injury model

Submission Author: Soheila Bani

Soheila Bani[1], Iraj Lotfinia[2], Parviz Shahabi [3], Jalal Abdolalizadeh[4], Abolfazl Barzegari[5], Amir Vahedi[6], Meysam Ghorbani[7]

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Background and Aim : Spinal cord injury often occurs in young men at the height of their reproductive health. Sperm ion channels play an important role in maintaining sperm physiology, motility and fertility. CatSper1,2 are a unique family of sperm cation channels, and play an important role in sperm motility and male fertility. The aim of this study was compares and evaluates the effects of selenium, astaxanthin and electrical stimulation on the expression of CatSper 1 , 2 genes and proteins in SCI rat model.
Methods : This study was an experimental study, performed on 60 male wistar rats.The first group was the control group who did not receive any intervention. The second group was the sham group who underwent laminectomy only. The third group was the spinal cord injury group, The fourth group consisted of astaxanthin-treated spinal cord injury, the fifth group received selenium-treated spinal cord injury, and the sixth group of spinal cord injury group was treated with electrical stimulation. Motor assessment (BBB) and sensory testing (Von Frey) were used to assess spinal cord repair. Sperm samples were examined for sperm parameters and expression levels of Catsper1 ,2 genes and proteins. All data were analyzed by one-way ANOVA and Tukey post hoc tests to compare multiple groups. Repeated measure ANOVA was used to compare within groups. P value <0.05 was considered significant.
Results : The relative intensity of CatSper 1,2 genes and proteins expression was significantly higher in the selenium-fed group than in the astaxanthin and electrical stimulation groups. Electrical stimulation had no effect on the expression of CatSper1,2 genes and proteins. Sperm parameters were improved in selenium group more than the astaxanthin and electrical stimulation group. There was a significant increase in BBB test scores, and a significant decrease in Von-Fery test scores in the intervention group with selenium compared to astaxanthin, and in the astaxanthin group compared to the electrical stimulation group. (p <0.001). The effect of electrical stimulation on motor test scores was more than sensory testing.
Conclusion : Given the superiority of selenium over astaxanthin and electrical stimulation in the expression of CatSper 1,2 genes and proteins, improvement of sperm parameters and spinal cord repair, it seems that the results of this study lead to identify selenium as an alternative method to help to reduce men's fertility disorders.
Keywords : astaxanthin, selenium, electrical stimulation, Catsper1, 2, sperm parameters, spinal cord repair

Oral & Poster Presentations

8th Basic and Clinical Neuroscience Congress
December 18-20, 2019
Razi Hall, Tehran, Iran

Iran University of Medical Sciences

Iranian Neuroscience Society

Count: 109
Abstract ID: 539
subject: Cognition: Cognitive Aging
Presentation Type: Poster

The Effectiveness of Mindfulness-Based Cognitive Therapy on the Psychological Well-Being of Women with Multiple Sclerosis

Submission Author: Pezhman Barimani

Pezhman Barimani[1], narges baghi[2], ziba saadati[3]

1. PhD candidate in clinical psychology
2. MA clinical psychology
3. MA General psychology

Background and Aim : The purpose of this study was to investigate the effectiveness of mindfulness-based cognitive therapy on the psychological well-being of women with multiple sclerosis.

Methods : The research design was quasi-experimental with pre-test and post-test with experimental and control group. The population consisted of patients with multiple sclerosis to Imam Khomeini hospital in Sari referred in the second half of 2018.Thirty-six of them were selected by convenience sampling and divided into experimental and control groups. The instrument used in this study was Reef Psychological Well-being Questionnaire.The experimental group received intervention for eight sessions (two sessions per week) and each session for two hours and the control group did not receive any intervention. After completing the course, both groups were re-evaluated (post-test). Data were analyzed using covariance statistical method.

Results : The mean score of psychological well-being of women with multiple sclerosis in post-test was higher than pre-test.

Conclusion : The results showed that the effectiveness of mindfulness-based cognitive therapy has an impact on the psychological well-being of women with multiple sclerosis.

Keywords : Mindfulness-Based Cognitive Therapy, Psychological Well-Being, Multiple Sclerosis.

Count: 110
Abstract ID: 33
subject: Neural Injuries and Neurodegenerative Disorders: Ischemia, Stroke, and Neurovascular Disorders
Presentation Type: Poster

Effect of Testosterone and Voluntary Exercise on Angiogenesis in the sciatic nerve of type 1diabetic castrated male rats

Submission Author: Sona Barkabi zanjani

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Background and Aim : Diabetes mellitus (DM) is one of the metabolic disease that increasing prevalence worldwide. DM lead to endothelial dysfunction and reduces angiogenesis in nervous disease and peripheral coronary heart disease. Angiogenesis plays a critical role in the formation of new blood vessels in physiological and pathological conditions. This study was aimed to evaluate the effects of testosterone and voluntary exercise on density of vessels in the sciatic nerve of castrated diabetic rats.

Methods : 48 male Wistar rats (weight: 250–300 g) were perfused with streptozotocin (50 mg/ kg) to cause type I diabetes. After 42 days of treatment with testosterone (2 mg/kg/day) and voluntary exercise, angiogenesis was determined in sciatic nerve by immunostaining for PECAM-1/CD31.

Results : Our results in this study demonstrated that in Dia-Cas-T-E group significantly ($p < 0.05$) elevated the number of MVD in the sciatic tissue of diabetic rats compared to the diabetic group. In addition, in the Dia-T-E group, 6-week exercise training ($p < 0.05$) significantly increased the number of MVD in the sciatic tissue of diabetic rats compared to the diabetic group.

Conclusion : Our findings suggest that testosterone therapy and exercise can promote angiogenesis in the sciatic nerve in rats.

Keywords : Angiogenesis, Diabetes, Sciatic nerve, Testosterone, Exercise

Count: 111
Abstract ID: 434
subject: Emotion, Motivation and Behavior: Behavioral Pharmacology
Presentation Type: Oral

Sex dependent alterations of resveratrol on social behaviors, nociceptive reactivity and anxiety-like behaviors in VPA-induced autistic-like model in rats

Submission Author: Hamideh Bashiri

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Background and Aim : Autism spectrum disorders (ASDs) is a complex, behaviorally defined disorder of the immature brain as a result of genetic and environmental risk factors, such as prenatal exposure to valproic acid (VPA). This syndrome has attached public attention by its high prevalence. A large body of evidence suggests that VPA may have a significant effect on pain threshold. Pain is defined as an unpleasant sensation which is implicated in virtually all human and animal diseases, and usually produced by physical, chemical, and biological stimuli, or some combination of these. According to neuro-protective effects, anti-inflammatory and antioxidant resveratrol (RSV), The present study was designed to clarify the effects of resveratrol (RSV) on social behavioral alterations, anxiety-like behaviors and nociceptive reactivity in valproic acid (VPA)-induced autistic-like model in rats.

Methods : Pregnant Wistar rats were randomly separated in five groups. Animals received saline, DMSO, VPA, RSV and RSV+VPA. VPA was administered (600mg/kg, i. p.) on embryonic day 12.5 and pretreatment by resveratrol (3.6 mg/kg, s. c.) was applied on E6.5 until E18.5. All offspring were weaned on postnatal day 21 and the experiments were done in male and female rats on day 60. Social interaction, elevated plus maze (EPM), open field, hot plate and tail-flick tests were set out to assess social deficits, anxiety-like behavior and pain threshold. SI (sociability index), SNI (Social novelty index) and Latency time were calculated as the standard indices of social behaviors and pain threshold, respectively.

Results : The results indicated that systemic intraperitoneal administration of VPA (600 mg/kg) significantly decreased SI and SNI in social interaction test (SIT), indicating the social impairments caused by VPA. RSV (3.6 mg/kg, s. c.) could reverse VPA-induced social deficits in male rats, but not in female group. VPA administration resulted in significant increase in latency time in the hot plate and tail flick tests in male rats, whereas had no such dramatic effect in females. RSV administration in combination with VPA non significantly decreased latency time compared to the valproic acid group in male rats. It is important to note that RSV by itself had no significant effect on SI, SNI and latency time in female and male rats. In addition, valproic acid administration increased anxiety-like behaviors, which could be improved at least in part by resveratrol

Conclusion : It can be concluded that valproic acid produces autistic-like behaviours and increases pain threshold in male rats which may be improved at least in part by resveratrol administration. Further studies, which better elucidate the molecular mechanisms involved in valproic acid and resveratrol-induced effects, will need to be undertaken.

Keywords : Valproic acid; Resveratrol; Autistic-like behavior; Anxiety-like behavior; Social interaction; Pain; Rat

Count: 112
Abstract ID: 587
subject: Computational Neuroscience: Computational Tools
Presentation Type: Poster

A Multi-stream convolutional neural network for fatigue detection using EEG signals

Submission Author: Hanieh Bazregarzadeh

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Background and Aim : Driver fatigue is becoming a serious problem resulting in an increase in the number of accidents. Therefore, it is vital to detect driver fatigue. The most common and effective method among all objective and subjective ones is to identify the fatigue status and operation of the brain based on EEG signals. Recently, the availability of large EEG datasets and advances in machine learning have both led to the development of deep learning architectures, particularly in analyzing EEG signals and understanding the information they may have for brain function. Automated and robust classification of these signals is an important step in making EEG application more practical.

Methods : The signal is recorded through a 32-channels electrode cap with 30 effective channels and two reference channels. The electrode locations are based on the international 10-20 system. This recording is done through a wireless device in a driving simulator from 12 healthy people into two states of fatigue and alert (https://figshare.com/articles/The_original_EEG_data_for_driver_fatigue_detection/5202739). The EEG signals in both conditions are sectioned to 1-second time-slices, and all fatigue detection process is evaluated on these time-slices. The main step of signal pre-processing is done through fully online and automated artifact removal for brain-computer interfacing (FORCe) Toolbox to remove eye-blink noise and also all other noises such as baselines. Then, the power spectral density feature of each channel of the signal is estimated by 4-order Autoregression (AR). Given the brain activity in the 1 to 40 Hz frequency band, this signal range is considered for further investigation. The human brain has five main lobes, including Frontal, Occipital, Central, Parietal, and Temporal. Each of these lobes contains specific information; Hence, the 5-stream middle fusion convolutional network is designed with five inputs that each input is extracted features from one of the lobes. Each input goes through three one-dimensional convolutional blocks. Then, the outputs of the convolutional layers are concatenated. Finally, the concatenated output is vectorized and classified using two fully connected layers. Meanwhile, a single stream deep convolutional network is designed to examine brain areas to compare the effect of each lobe on fatigue detection. The network consists of three convolutional layers and two fully connected layers, where the extracted features of the electrodes of each region are applied to the network, and the accuracy is calculated in that area. 80% of data has been selected randomly for training, and the evaluation is performed on the rest of the data.

Results : The average accuracy, sensitivity, and specificity were 93.49%, 95.90%, and 90.92%, respectively. The frontal area with accuracy, sensitivity, and specificity of 81.88%, 80.04%, and 83.61%, respectively, had the most impact on diagnosis.

Conclusion : This paper presents a new method for fatigue detection by EEG signals using a deep neural network. For comparison, the extracted features were classified with different proposed classifiers, and the results show that the accuracy and robustness of the proposed new system are higher than the machine learning approaches such as Support Vector Machine and K-Nearest-Neighborhood.

Keywords : Fatigue detection; EEG signals; CNN network; Deep learning

Count: 113
Abstract ID: 431
subject: Cognition: Learning and Memory
Presentation Type: Poster

PPAR-γ agonist pioglitazone improved synaptic plasticity, anxiety and depression-like behaviors in lipopolysaccharide injected rats

Submission Author: Farimah Beheshti

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Background and Aim : In present study the effects of PPAR-γ agonist pioglitazone on long term potentiation (LTP) and anxiety and depression-like behaviors in lipopolysaccharide (LPS) treated rats was investigated.

Methods : The rats were divided into five groups: (1) control, (2) LPS (1 mg/kg), (3-5) three doses including 10, 20 and 30 mg/kg pioglitazone before LPS. The rats were used in two sets of the experiments. For assessment of depression and anxiety like behaviors LPS was injected 120 min before elevated plus maze, open field, or forced swimming test. For LTP experiment, LPS was injected during 6 days and also 120 min before the experiment. In both experiments, pioglitazone or vehicle was injected 30 min before LPS.

Results : In open field, LPS increased the time and distance in the peripheral zone while, decreased these parameters in the central area. In elevated plus maze, LPS decreased the open arm time while increased the closed time. In forced swimming, LPS increased the immobility while, decreased the climbing time. Pretreatment by pioglitazone reversed the effects of LPS. The results of LTP experiment showed that the amplitude and 10-90% slope of field stimulation after synaptic potential (fEPSP) significantly decreased by LPS. Compared to the LPS, injection of 30 mg/ kg pioglitazone was followed by an increased level in fEPSP amplitude.

Conclusion : In conclusion, the results of current study indicated that pioglitazone had anti- anxiety and anti- depressant effect and improved LTP impairments induced by LPS in rats.

Keywords : Lipopolysaccharide; PPAR-γ agonist; Pioglitazone; Anxiety, Depression, Long term potentiation.

Count: 114
Abstract ID: 53
subject: Cognition: Learning and Memory
Presentation Type: Oral

D-Lys-3-GHRP-6 downregulates the hippocampal serotonin HT7 receptors

Submission Author: Siamak Beheshti

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Background and Aim : We have previously shown that antagonism of the ghrelin receptors in the rat brain impairs memory consolidation. However, the causal mechanisms are not well-known. It is known that ghrelin can influence serotonergic signaling in the brain. We aimed to evaluate the effect of i.c.v injection of a ghrelin receptor antagonist (D-Lys-3-GHRP-6) on the mRNA expression levels of the hippocampal serotonin HT7 receptors.

Methods : Fifteen adult male Wistar rats weighing 250 g were implanted with cannulas in their lateral ventricles. Three groups of animals (n=5) received D-Lys-3-GHRP-6 (0.5 and 5nM) or saline. Twenty-four hours thereafter, their hippocampus was removed. The serotonin HT7 receptor gene expression levels were measured using a real-time PCR method.

Results : One-way ANOVA indicated a significant decrease in the expression levels of serotonin HT7 receptors. The post-hoc comparison showed that D-Lys-3-GHRP-6 (5nM) downregulated the mRNA expression levels of the hippocampal serotonin HT7 receptors, compared to the control group.

Conclusion : It seems that part of the impairing effect of i.c.v injection of D-Lys-3-GHRP-6 on memory consolidation might be due to a decrease in the serotonin HT7 receptors in the hippocampus of rats.

Keywords : D-Lys-3-GHRP-6, Hippocampus, Serotonin HT7 receptor

Count: 115
Abstract ID: 462
subject: Cognition: Learning and Memory
Presentation Type: Poster

Down-regulation of the hippocampal connexin43 during inhibitory avoidance memory consolidation

Submission Author: Siamak Beheshti

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Background and Aim : Studies have shown that the intercellular communication via gap junction channels has a crucial role in the learning process. Amongst different types of connexins, connexin 43 (Cx43) is the most widely expressed and studied gap junction proteins in astrocytes. Both memory formation and memory deteriorating functions of astrocytes-located connexins have been documented. In this study, we measured the expression levels of Cx43 in the hippocampus of rats, during inhibitory avoidance memory consolidation.

Methods : Adult male Wistar rats weighing 250 g were used. Animals were trained with the inhibitory avoidance task. At different times post-training (1, 3 and 24 h), the rats were decapitated and their hippocampus was removed and freeze in liquid nitrogen, immediately. The control group did not receive any electric shock. The mRNA expression level of Cx43 was measured by the real-time PCR method.

Results : One-way ANOVA indicated a significant decrease in the expression levels of the hippocampal Cx43 during inhibitory avoidance memory consolidation. Post-hoc comparison showed that the expression levels of Cx43 decreased at 1 h post-training compared to the control group.

Conclusion : The results indicate that the intercellular communication between hippocampal astrocytes decrease via Cx43 made gap junctions during fear memory consolidation. The decreased expression of Cx43 might have a role in the inhibitory avoidance memory consolidation, which needs to be clarified.

Keywords : Astrocyte; Connexin43; Hippocampus; Inhibitory avoidance memory

Count: 116
Abstract ID: 452
subject: Special topics: Converging Technologies   (NBIC: Nano-Biotech-Information-Cognitive), euroscience and Nanotechnology, Neuroscience and Biotechnology, Neural Tissue Engineering
Presentation Type: Poster

The importance of Circular RNAs in early diagnosis and development of novel therapeutic approach in neurodegenerative disorders.

Submission Author: Hanieh Beyrampour Basmenj

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Background and Aim : Circular RNAs (circRNAs) are a class of long noncoding RNAs (ncRNAs) that are characterized by the presence of covalently linked ends and have been found in all life kingdoms. Here, we summarize classification, characteristics, biogenesis, and regulatory functions of circRNAs in Neurological Disorders. CircRNAs do not distribute equally in the neuronal sections in the brain, but mostly enriched in the synapses. These ncRNA can be used as potential clinical biomarkers in complex disorders of the central nervous system (CNS), which is supported by recent findings.

Methods : In this review we gathered data from Scopus, Embase, ¬Science Direct and NCBI databases. 53 papers were retrieved by limiting the search results to a specific time-frame. 10 papers were included in the review process, which meet our criteria.

Results : Investigation of regulatory role of circRNAs will shed novel light in gene expression mechanisms during development and disease conditions and may identify circRNAs as new biomarkers for neurodegenerative disorders.

Conclusion : Although circRNAs have potential value as non-invasive clinical biomarkers for CNS disorders, a considerable amount of future work remains to be invested. It is important to precisely identify with high sensitivity which circRNAs are specifically deregulated in disease conditions.

Keywords : Circular RNAs; Biomarkers; Neurodegenerative Disorders and Novel therapeutic approach

Count: 117
Abstract ID: 558
subject: Development: Neurodevelopmental Disorder (ADHD, Autism, Learning Disorders)
Presentation Type: Poster

The Function of Post Synaptic Density Proteins in Neuro-developmental Disorders

Submission Author: Samaneh Biglari

Samaneh Biglari[1]

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Background and Aim : Autism spectrum disorder (ASD) is a neuro-developmental disorder and is characterized by deficits in reciprocal social communication and stereotyped and repetitive behaviors. ASD is a common disorder with an estimated prevalence of 1/59. It is known that ASD is highly heterogeneous with various genetic factors contributing to its etiology. Different methods have investigated the genetic/molecular cause of the disorder and these investigations have implicated more than a hundred genes, but there is a fact that each gene or genomic alteration often accounts for less than 1% of the cases. Many of the genes associated with Autism Spectrum Disorder have duties in the development or functioning of neuronal circuits. For example, there are lots of repeatedly reported individuals with ASD who have a mutation in genes coding for synaptic cell adhesion molecules and scaffold proteins, such as neuroligins, neurexins, and SHANK proteins. These proteins are important because of the critical role of them in the formation and stabilization of synapses in the postsynaptic density (PSD). The PSD is a complex protein which localized at the postsynaptic plasma membrane of excitatory synapses. The PSD is essential for protein trafficking in neurons and synaptic plasticity.

Methods : The aim of the present study is to focus on the function of some synaptic proteins involved in autism spectrum disorder.

Results : The synapse has consequently emerged as a common target for the different genetic mutations that affect chromatin remodeling, synaptic translation, formation, and functioning. On the other hand, a large body of neurobiological studies indicate that synaptic dysfunctions occur in ASD: reduced neuronal length and shortened dendritic patterns are a few examples. Mutations in synaptic genes are responsible for the crucial part of the ASD phenotype.

Conclusion : As a result, understanding the mechanisms that regulate synaptic proteins function should make known the causes of ASD and could allocate a way to moderate the severity of the symptoms.

Keywords : Autism Spectrum Disorder (ASD); Postsynaptic Density (PSD); Synaptic Proteins Function

Count: 118
Abstract ID: 49
subject: Epilepsy, Neural Excitability, Synapses, and Glia: Seizure and Epileptic Disorders
Presentation Type: Poster

Role of 5-HT3 receptors Blockade in the entorhinal cortex on Stress and Anxiety in Elevated Plus maze Behavioral Test in the electerical amygdala kindled rat

Submission Author: Mohammad sadegh Bolandian

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Background and Aim : Epilepsy is a chronic neurological disorder characterized by frequent seizures. One of the important types of epilepsy from the clinical point of view is temporal lobe epilepsy, which is the most common topical epilepsy in adults that is resistant to commonly used treatments. Over the past two decades, there have been many advances in drug therapies for epilepsy and complications, but about one third of patients still have not responded to common medications. The aim of this study was to determine the role of 5-HT3 receptors Blockade in the entorhinal cortex on the Discrimination index in Elevated Plus maze in the electerical amygdala kindled rats.

Methods : Male Wistar rats (weighing 270–350 g) were used in this study. Animals were assigned to seven groups as control, sham, kindled, kindled + vehicle, kindled + Ramo. 1μg, kindled + Ramo. 10μg, kindled + Ramo. 100μg. In kindled + vehicle group, animals were injected with ramosetron vehicle and then received the kindling stimulations. In kindled + Ramo. 1 μg group, animals were injected with ramosetron 1μg / 0.5 μl (ICV) and then received the kindling stimulations 24 h after applying the vehicle injection. In kindled + Ramo. 10 μg group, animals were injected with ramosetron 10 μg / 0.5 μl (ICV) and then received the kindling stimulations 24 h after applying the vehicle injection. In kindled + Ramo. 100 μg group, animals were injected with ramosetron 100μg / 0.5 μl (ICV) and then received the kindling stimulations 24 h after applying the vehicle injection. At the end of each step, the Elevated Plus maze Behavioral Test was performed.

Results : Injection of high and moderate doses of 5-HT3 receptor antagonist following electerical amygdala kindled, reduced the time elapsed in the open arms and injected a moderate dose of 5-HT3 receptor antagonist decreased the number of entries into the open arms.

Conclusion : It was shown that the 5-HT3 receptor antagonist increases animal stress and anxiety.Previous studies have shown that the stressful function of 5-HT3 antagonists may be related to the cholecystokinin peptide (CCK). Increased central function of CCK in human and animal models leads to stress, anxiety,

fear and panic, and thus the ability of the 5-HT3 receptor to increase CCK release may be related to its behavioral change. The results of our studies confirm the results of our experiments. Another study also found that kindling encourages animals to enter the arm more often. A process that does not matter and does not matter but is consistent with other symptoms of increased stressful activity. This study is consistent with our experiments.

Keywords : Epilepsy, 5-HT3 Receptors, electrical kindling, Seizure, Amygdala, Entorhinal Cortex, Anxiety

Count: 119
Abstract ID: 500
subject: Emotion, Motivation and Behavior: Motivation and Emotion
Presentation Type: Oral

How emotional knowledge education could affect emotion recognition skills in preschoolers

Submission Author: Khatereh Borhani

Khatereh Borhani[1]

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Background and Aim : Emotional competence is a combination of emotional knowledge and emotional self-regulation skills. A remarkable body of research revealed that emotional competence develops through childhood.

Methods : This study aims to investigate the possible facilitatory role of an educational program (PART) on emotional competence. In a pretest-posttest paradigm, 49 children (mean age= 5.22, SD= 0.62 girls=23) participated in this study. With a random assignment, the experimental group received ten one-hour sessions of the PART for five weeks. We used the Affect Knowledge Test and the Preschool Self-Regulation Assessment as behavioral assessments.

Results : The experimental group's emotional knowledge (M=29, SD=2) and emotion regulation pretest scores (Pencil-tap: M= 77, SD= 24; Toy-wrap: M= 84, SD= 28) were significantly improved in comparison to the control group (M=27, SD= 3; Pencil-tap: M= 69, SD= 18; Toy-wrap: M= 77, SD= 29 respectively; all $p< .05$).

Conclusion : The study results suggest that PART has facilitatory effects on children's emotion-knowledge and emotion self-regulation.

Keywords : emotion regulation, emotion, preschooler

Iran University of Medical Sciences

Iranian Neuroscience Society

Count: 120
Abstract ID: 597
subject: Cognition: Working Memory
Presentation Type: Poster

The neuroscience of story: Theoretical proof of miller's law

Submission Author: Gooya Bozorgi

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Background and Aim : Stories are the inescapable frame of human existence. Stories constitute a fundamental part of our experience. They provide an essential platform for theories. Purpose of this article is to explore more the links between neuroscience, and Storytelling and Narrative.

Methods : To this end, the relationship between the miller's law and the function of numbers has been considered in some narratives. Based on observations by George Miller, that the number of objects an average person can hold in working memory is about seven.

Results : The findings of this study suggest that it provides a theoretical proof for miller's law and reinforces its justification.

Conclusion : The results show that storytelling and narrative grow and develop within the framework of cognitive and neurological rules and also, This is a new direction to pay attention to the neuroscience of the storytelling and Working Memory.

Keywords : Story; storytelling; narrative; the neuroscience of story; miller's law; memory

Count: 121
Abstract ID: 104
subject: Social Neuroscience: Other
Presentation Type: Poster

Evaluation of the effect of oxytocin on impulsivity and risky decision making with regard to the oxytocin receptor gene (OXTR)

Submission Author: Ali Bozorgmehr

Ali Bozorgmehr[1]

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Background and Aim : Impulsivity is considered as a hasty act or imprecise decision. Oxytocin reduces anxiety and conditioned fear. However, its effects, as well as its receptor variants, have not been investigated for impulsivity and risky decision making. The purpose of this study was to evaluate the effect of oxytocin on impulsivity and risky decision making in healthy young men with regard to different variants of the oxytocin receptor gene.

Methods : In this cross-sectional interventional study, 177 healthy young men aged between 20-36 years old were selected randomly and were randomly assigned to one of three groups: oxytocin, placebo, and control. All participants were evaluated by the go/no go test and the Iowa gambling task and 5 ml of blood were received from each of them, and using the PCR, a region of the oxytocin receptor gene was replicated. Finally, by examining single-nucleotide polymorphisms and haplotype analysis, two polymorphisms were finally identified as Tag SNPs and their association with the performance of individuals in each of the two tests was evaluated.

Results : The oxytocin group and the participants with GG genotype in the rs2254298 variant of the oxytocin receptor genes had a significantly lower commission error and a greater inhibition in the go/no go test compared to other participants. It was also found that oxytocin recipients and those with TT genotypes in the rs2254295 variant of the oxytocin receptor genes have higher raw and net scores as well as more beneficial selections in the Iowa gambling test than others.

Conclusion : The use of oxytocin can be accompanied by a reduction in impulsivity and risky decision making. On the other hand, various different variants of the oxytocin receptor gene can modulate the effect of oxytocin.

Keywords : oxytocin; oxytocin receptor gene; impulsivity; risky decision making

Count: 122
Abstract ID: 342
subject: Emotion, Motivation and Behavior: Behavioral Pharmacology
Presentation Type: Oral

The role of G-protein receptor 30(GPR30) in spatial learning and memory task in young female rats receiving marijuana

Submission Author: Mohadese Chahkandi

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Background and Aim : : sex-dependent differences in the abused drugs effects on mammalian behavior. There is an unknown effect of marijuana in neurological functions in people when taken in chronically. In the some study suggested that tolerant to the effect of chronic THC on performance behavior in female rats dependent to the present of ovarian hormones and the age of initiation use. The findings demonstrate that estradiol can exert its effects on cognitive performance via specific receptors.. Recently, a novel G-protein coupled receptor (GPR30) was described to mediating estrogen signaling in various cell lines.

Methods : : fifty-four rats were randomly allocated to 9 groups. The E2,G1 and G15(every 4 days) and marijuana(every day), either individual and combine, were given intraperitoneally for 21 days and Morris water maze (MWM) test were performed after end of the injections. All groups were compared to control and vehicle

Results : : In this study the role of GPR30 were investigated in spatial learning and memory task in female rats receiving marijuana. . The result of intra-peritoneal injection of estrogen and G1(GPR30 agonist) and G15 (GPR30antagonist),either individual and combine, showed that G1 alone significantly increase spatial learning however have no effect on memory. The result of intra-peritoneal injection of estrogen and E2 and G15(GPR30antagonist),either individual and combine, shown no effect on learning and memory. In addition, the results indicated that marijuana and marijuana plus G1 and marijuana plus G15 showed no effect.

Conclusion : marijuana and estrogen either individual in long term don't effect on spatial learning and memory task in young female rats, however, G1 alone has a non-specific positive effect on learning and memory.

Keywords : GPR30, spatial learning and memory, marijuana

Count: 123
Abstract ID: 13
subject: Cognition: Learning and Memory
Presentation Type: Poster

Fingolimod attenuates harmaline-induced passive avoidance memory and motor impairments in a rat model of essential tremor

Submission Author: Narjes Dahmardeh

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Background and Aim : Preclinical data suggest that Fingolimod (FTY), a sphingosine-1-phosphate receptor modulator, could be beneficial for treating common neurological disorders, including Parkinson's, MS and epilepsy.

Methods : In the current study, the effects of FTY on harmaline-induced motor and cognition impairments were studied in Male Wistar rats. Passive avoidance memory, exploratory, anxiety related behaviors, tremor, and motor function were assessed

Results : . The memory impairments observed in harmaline treated rats were reversed somewhat by administration of FTY720. The results showed that FTY could recover the step width, left and right step length, but failed to recuperate the mobility duration. FTY improved the time spent in the wire grip and rotarod

Conclusion : Results of our study shed light on the beneficial effects of FTY on cognition and motor function a model of essential tremor (ET) and suggest that sphingosine-1-phosphate receptor modulators have a potential neuroprotective profile for the treatment of ET.

Keywords : Essential tremor, Fingolimod, Memory, Motor function

Count: 124
Abstract ID: 210
subject: Neuropsychiatry and Psychology: Addiction (Drug, Alcohol, Internet, Food) and Gambling
Presentation Type: Poster

Nucleus Accumbens And Cognitive Mechanisms Of Addiction

Submission Author: Ehsan Dal minoufar

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1. -
2. Department of Cognitive Psychology, Faculty of Psychology and Education, Allameh Tabatabaei University, Tehran, Iran.

Background and Aim : Understanding the brain circuitry that underlies reward is critical to improve treatment for many common health issues, including obesity, depression, and addiction. The Nucleus Accumbens is a major site that mediating reward behavior, and it is thought to be directly involved in reinforcing and addictive behaviors in response to drug use. It is contained within the ventral striatum and part of the mesolimbic system and receives dopaminergic projections from the ventral tegmental area (VTA) in the brainstem. Release of dopamine in the nucleus accumbens is critical for enhancing the pleasure or positive reinforcement of both natural rewards such as food or sex, as well as substances of abuse such as alcohol and cocaine. this review seeks to summarize current understanding of drug-related behaviors to postulation that increased knowledge of the plasticity within the drug reward circuit will lead to new and improved treatments for addiction.

Methods : This article attempts to synthesize the existing literature on cognitive processes involved in the addiction reward system. For this purpose, articles published between 2013 and 2019 were selected manually and computerized using the sites Scopus, PubMed, Google Scholar and PsycINFO.

Results : The Nucleus Accumbens appears to play a central role in targeted behavior to determine addiction and addictive behavior, such as craving, stimuli-driven drug seeking, and a high propensity for relapse following abstinence. The Accumbens have a primary connective pattern similar to the dorsal striatum, whereby it receives dense dopaminergic input from the ventral mesencephalon and glutamatergic input from cortical, allocortical, and thalamic brain regions and sends GABAergic projections that do not leave the basal ganglia. The overall topography of cortical and allocortical input makes the NAc as the primary striatal portal for limbic and appetitive input, and is in critical position to regulate motivated behavior.

Conclusion : The results of this review article suggest that the reward system and the associated with other brain regions play an important role in the types of addiction. Further identification of the cognitive and non-cognitive factors involved in addiction can lead to newer strategies for treatment.

Keywords : Addiction, nucleus accumbens , addictive behavior. drug reward circuit

Count: 125
Abstract ID: 659
subject: Cognition: Working Memory
Presentation Type: Poster

Comparing the Effectiveness of Painting-Based Art Therapy with Music-Based Art Therapy on Improving Decentralization and Cognitive Function Disorders and Autonomic Nervous System in ADHD Children

Submission Author: Mona Danaeikousha

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Background and Aim : Developmental neuropsychiatric disorders (ADHD) are the most common neurobehavioral disorder of childhood which leads to impairment in educational, social and family life. The aim of this study was to compare the efficacy of painting based art therapy with art based therapy. The aim of this study was to investigate the effects of these therapies on autonomic nervous system activity in music on improvement of dysfunction and cognitive dysfunction (inhibitory control and selective attention in children with ADHD).

Methods : The research design was quasi-experimental with pre-test and post-test with control group and applied type. The statistical population was children referred to two clinics in Karaj, 15 of whom were randomly selected in three groups of 5 each. Were replaced. Experimental group 1 received art-based therapy, Experiment 2 received music-based therapy, and control group received no intervention. They were contacted to implement the research project and participated in the research project. At the beginning and end of the study, parents of all three groups completed the Rescue Cognitive Function Questionnaire (2013) and were used for Wechsler Intelligence Decentralization. In order to assess autonomic nervous system before and after treatment, heart rate was measured. . The number of treatment sessions was 10 sessions (twice a week for 30 minutes). Multivariate analysis of covariance was used to analyze the data with SPSS software.

Results : The results showed a significant difference between the effects of the two treatments on the variable scores of autonomic nervous system (heart rate) Art-based music therapy had more effect on autonomic nervous system (heart rate) than the art of painting-based therapy. Between the effects of the two treatments on the variable scores of decentralization, art-based therapy had a greater effect on the dysfunction disorder than the art-based therapy. These practices lead to improved child attention by increasing eye-hand coordination, increasing comprehension of detail and accuracy, increasing eye tracking and avoiding excessive eye movement. There were significant differences between the two treatments in the two mentioned variables with the control group. There was no significant difference between the two experimental groups in the cognitive function variable (inhibitory control and selective attention), but the results showed a significant difference between the effects of the two treatments on the cognitive function variable (inhibitory control and selective attention) compared to the control group.

Conclusion : Both treatments are effective for the cognitive function variable (inhibitory control and selective attention) and more effective for the painting disorder-centered dysfunction variable and more

Oral & Poster Presentations

8th Basic and Clinical Neuroscience Congress
December 18-20, 2019　　　　　　　Razi Hall, Tehran, Iran

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effective for the autonomic nervous system (heart rate) music-based therapy. So, in general, a combination of both therapies can be effective, and it is advisable to use both treatments for people with developmental neuropsychiatric disorders (ADHD) at the same time. In reducing the problems of decentralization, cognitive function (inhibitory control and selective attention) and autonomic nervous system (heart rate) Use the store with ADHD.

Keywords : Effectiveness of Paint-Based Art Therapy, Music-Based Art Therapy, Decentralized Impairment, Cognitive Function (Inhibitory Control and Selective Attention), Autonomic Nervous System (Pacemaker, Childr

Count: 126
Abstract ID: 592
subject: Motor Systems
and Movement Disorders: Movement Disorders (Parkinson, Huntington's, ALS, Ataxia, edication-induced Movement Disorders)
Presentation Type: Poster

The adipose-derived stem cells therapy by magnetic attraction in a rat model of Parkinson's disease

Submission Author: Marzieh Darvishi

Marzieh Darvishi [1]

1. 1Department of Anatomy, Faculty of Medicine, Ilam University of Medical Sciences, Ilam, Iran.

Background and Aim : Abstract Background: Stem cell therapies for neurodegenerative diseases such as spinal cord injury, stroke, and Parkinson's disease (PD) are intended to replace lost neuron. The major point of this treatment is to guide the migration of transplanted cells into the injury site. In this, study the homing of super paramagnetic iron oxide nanoparticles (SPIONs) labeled adipose-derived stem cells (ADSC) by an external magnetic (EM) field were investigated in a rat model of PD.

Methods : Material & method: ADSCs were obtained from perinephric regions and then ADSC markers were assessed by immunostaining with CD90, CD105, CD49d, and CD45. The SPION was coated using poly- L- lysine hydro bromide and labeled ADSC and then transfected by the GFP reporter gene. Rats with PD were divided into five groups: a intact group, a control group with PD (lesion with 6-HD injection), and three experimental groups: the PD/ADSC group (PD transplant with ADSCs labeled by BrdU), PD/ADSC/SPION group (PD transplant with ADSCs labeled with SPION and transfected by GFP); and the PD/ ADSC/ SPION/ EM group (PD transplant with ADSCs labeled with SPION and transfected by GFP induced with external magnet).

Results : Abstract Background: Stem cell therapies for neurodegenerative diseases such as spinal cord injury, stroke, and Parkinson's disease (PD) are intended to replace lost neuron. The major point of this treatment is to guide the migration of transplanted cells into the injury site. In this, study the homing of super paramagnetic iron oxide nanoparticles (SPIONs) labeled adipose-derived stem cells (ADSC) by an external magnetic (EM) field were investigated in a rat model of PD. Material & method: ADSCs were obtained from perinephric regions and then ADSC markers were assessed by immunostaining with CD90, CD105, CD49d, and CD45. The SPION was coated using poly- L- lysine hydro bromide and labeled ADSC and then transfected by the GFP reporter gene. Rats with PD were divided into five groups: a intact group, a control group with PD (lesion with 6-HD injection), and three experimental groups: the PD/ADSC group (PD transplant with ADSCs labeled by BrdU), PD/ADSC/SPION group (PD transplant with ADSCs labeled with SPION and transfected by GFP); and the PD/ ADSC/ SPION/ EM group (PD transplant with ADSCs labeled with SPION and transfected by GFP induced with external magnet). Result: ADSCs were immunoreactive to fat markers CD105 (89.4 ± 0.9), CD90 (88.93 ± 1.1), and CD49d (75.6 ± 0.6), with negative immunostaining at the hematopoietic stem cell marker (CD45: 1.9 ± 0.8). The highest number of GFP-positive cells was in the ADSC/SPION/EM group (59.7 ± 1.1), which was significantly different from that in ADSC/SPION group (38.07 ± 2 and $p\leq0.008$).

Conclusion : Conclusion: External magnets can promote delivery and homing of transplanted stem cells in injury site.

Keywords : Keywords: Super Paramagnetic Iron Oxide Nanoparticles (SPIONs), adipose derived stem cells (ADSC), Parkinson's disease

Count: 127
Abstract ID: 133
subject: Neuropsychiatry and Psychology: Mood Disorders
Presentation Type: Oral

Investigation of sadness on brain mathematical ability using Musical and Semantical Excitation

Submission Author: Ali Davoodi moghadam

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Background and Aim : Sadness is an emotional pain that happens based on loss, loneliness, and hopelessness. The importance of detecting the relation between emotion and computational ability is considered as one of the main issues in psychology. A study was carried out by the scientists of Malaysia University to make secondary students able to figure out the relationship between emotional intelligence and the students' mathematical ability.

Methods : Fifteen subjects (eight females, seven males; mean age of twenty years old) participated voluntarily and written informed consent was obtained from all the subjects. Subjects were divided into two different groups: the control group and the stimulation one. During the test, the stimulation group was asked to close their eyes for one minute. During this period, a sad instrumental piece of music was presented to them in an in-ear headphone. After that, a sad text and a series of sad images were shown to them. After being stimulated, they were asked to do a simple mathematical test while the music was being played on their headphones, and this method was repeated two more times. The control group was asked to do the same test without the images being shown to them. The accuracy of their answers was calculated as the outcome of the test. Summation of the number of False and No-Answered questions was exerted as the performance metric. An independent t-test method was conducted for statistical analyzing of the data.

Results : The results of independent t-test revealed significant increase in the metric of the participants in the stimulation group (mean =9.25; STD = 5.87) compared to control group (mean = 3.57; STD = 2.43) as shown in Figure 1. The p-Value of the T-test was about 0.0336, which shows that the original hypothesis about the effect of sadness on mathematical ability is completely true.

Conclusion : Based on the results of this study, it can be declared that sad emotion is indeed capable of affecting computational ability. This achievement can be used as the start of neuroscientific research and clinical treatments.

Keywords : Brain mathematical ability; Emotional Intelligence; Computational Ability; Sadness

Count: 128
Abstract ID: 570
subject: Novel and Cutting-Edge Technologies: Brain Stimulation Methods   (ECT, rTMS, TDCS, DBS)
Presentation Type: Poster

The influence of transcranial alternating current stimulation (tACS) on acquisition of second language vocabulary and increasing working memory capacity

Submission Author: Bahar Dehghanpour Hanzaie

Bahar Dehghanpour Hanzaie[1], Masoud Nosratabadi[2]

1. M.S Student of Clinical Psychology,University of Social Welfare and Rehabilitation Sciences,Tehran,Iran
2. PHD Student in Health Psychology,Director of Paarand Center,Tehran,Iran

Background and Aim : Nowadays in most societies, learning different language has become a challenge for people. Also there is widespread attention and interest in second language acquisition and roll of working memory as construct used in cognitive psychology. The aim of this study was to investigate effectiveness of transcranial alternating current stimulation (tACS) on acquisition of second language vocabulary and increasing working memory capacity.

Methods : This was a single session study with three groups: real Theta tACS group (n=22), sham/verum Theta tACS group (n=16) and control group (n=18). For both real and sham groups we calculated individual Theta frequency (ITA) for tACS. We have placed active electrode on the right frontal (target electrode = F4) and reference one on parietal (target electrode = P4) brain areas (two return electrode above the right ear). We used N-back working memory test and German word list task (a task that has been designed by authors) before and one week after one session ITA tACS. The German word list contains of 30 words that selected from German applied words.

Results : The results showed that one session ITA tACS could improve recalls of second language words after one week in real ITA tACS group comparing to Sham and control groups. However, we could not found any significant differences in working memory after ITA tACS.

Conclusion : It seems that ITA tACS can increase learning capacity for second language and if use this protocol for more than one session could be more effective.

Keywords : working memory;tACS;second language

Count: 129
Abstract ID: 544
subject: Neuropsychiatry and Psychology: Evidence-Based Psychology
Presentation Type: Poster

The Effectiveness of Neurofeedback Therapy in Reducing Symptoms of Attention Deficit / Hyperactive Children (ADHD)

Submission Author: tajmah Dehnashi latan

tajmah Dehnashi latan[1]

1. MA in clinical psychology

Background and Aim : The purpose of this study was to evaluate the efficacy of neurofeedback therapy in reducing the symptoms of ADHD.

Methods : The research design was quasi-experimental with pretest-posttest with experimental and control group. The statistical population included patients with attention deficit / hyperactivity disorder referred to counseling center in Ahwaz in 2018.Thirty people were selected by convenience sampling and divided into two experimental and control groups. The research tool is the Conners Parenting Questionnaire, which is a tool for measuring behavioral problems in children with ADHD. The experimental group received the intervention for 10 sessions and once a week and the control group did not receive any intervention. After completing the course, both groups were re-evaluated (post-test). Data were analyzed using ANOVA.

Results : The mean score of symptoms of inattentive / overactive children in post-test was significantly higher than pre-test.

Conclusion : The results showed that the efficacy of neurofeedback therapy was effective in reducing the symptoms of ADHD.

Keywords : Neurofeedback treatment, reduction of symptoms of attention deficit / hyperactive children (ADHD).

Count: 130
Abstract ID: 112
subject: Neural Injuries and Neurodegenerative Disorders: Demyelinating Disorders
Presentation Type: Oral

Nanocurcumin is a potential novel therapy for multiple sclerosis by influencing inflammatory mediators

Submission Author: Sanam Dolati

Sanam Dolati[1]

1. Aging Research Institute, Tabriz university of medical sciences, Tabriz, Iran

Background and Aim : Multiple sclerosis is a neuroinflammatory disease characterized by demyelination and inflammatory infiltrates in the CNS. The inflammatory cells and their products in the brain lesions of MS patients has recognized that disease is intermediated by pathogenic T cell responses against myelin antigens and production of inflammatory mediators, consequently a broad neurodegenerative process. The Th1 cytokines, IFN–γ, and TNF-α were higher in MS patients, however only the TNF-α levels were statistically considerable. TNF-α is a pleiotropic pro-inflammatory cytokine produced by abundant immune cells during acute inflammation. IL-1β and IL-6 are accountable for inflammation, and immune responses. Curcumin is a natural compound widely used in traditional medicine. Immuno-modulatory effect of curcumin on microglial cells has been documented previously.Nano-curcumin has 80 mg of curcumin encapsulated in nano-micelle.Nanocurcumin has been used as an anti-inflammatory compound.

Methods : The aim of this study was to identify effects of nanocurcumin on inflammatory mediators in patients with relapsing-remitting multiple sclerosis (RRMS). For this purpose, 50 MS patients were randomly divided into two groups. The test group received nanocurcumin capsule daily for 6 months. Simultaneously, the control group received placebo. Real-Time PCR was employed to detect the probable changes in gene expression levels of pro-inflammatory cytokines in blood samples. ELISA was used to determine the alterations in these cytokines secretion levels.

Results : According to the results, a significant decrease in mRNA expression levels of STAT1($p=0.0002$), NF-κB ($p<0.0001$), AP-1 ($p=0.0007$), IL-1β ($p=0.0017$), IL-6 ($p=0.017$), IFN–γ ($p<0.0001$), CCL2 ($p=0.0067$), CCL5 ($p=0.0034$), TNF-α ($p<0.0001$) and also significant increase in expression levels of Foxp3 ($p=0.0082$) was evident in nanocurcumin treated group compared with before treatment. The secretion levels of IFN–γ ($p=0.0025$), CCL2 ($p=0.0029$), and CCL5 ($p=0.0003$) were reduced dramatically in test group compared with placebo group.

Conclusion : These data suggest a differential role for nanocurcumin as an immune suppressant. Furthermore, the findings support the efficacy of nanocurcumin as an anti-inflammatory compound with the potential for improvement of MS symptoms. In this clinical trial, it was found that the six-month oral administration of nanocurcumin could decrease mRNA expression levels of pro-inflammatory cytokines and transcriptional factors and also secretion levels in MS patients.

Keywords : Multiple sclerosis, Nanocurcumin, Cytokine, Transcription factor.

Count: 131
Abstract ID: 413
subject: Cognition: Learning and Memory
Presentation Type: Poster

The Role of Bilingualism on the Relationship between Cognitive Resilience and Cognitive Load: A Behavioral and Electrical Neuroimaging Study

Submission Author: Setareh Dorood

Setareh Dorood[1], Narges Radman[2]

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2. MD., PhD., Institute for Research in Fundamental Sciences (IPM)

Background and Aim : In line with conducting a surge of research on cognition in different domains, the significance of cognitive load and cognitive resilience have been highlighted in the bilinguals' working memory. Previous studies have demonstrated two hypothesizes that bilinguals outperformed monolinguals in their cognitive ability. The other hypothesis is explained as bilinguals occupy more information in their working memory, therefore, their performance would be hindered. To better clarify the effect of second language use on bilingual speakers' cognitive abilities, the current study compared the relationship of cognitive load and cognitive resilience between bilinguals and monolinguals. Cognitive resilience and cognitive load have been frequently measured using subjective and physiological approaches.

Methods : In the current study, we measured cognitive resilience using behavioral measurement and electrical neuroimaging (EEG) while performing cognitive tasks with different levels of difficulty namely, simple, moderately difficult, and highly difficult versions of Stroop Task to manipulate the level of cognitive load. The Stroop task consisted of congruent, incongruent, and neutral trials.

Results : The achieved data reported that when cognitive load increases "moderately", bilinguals have a significantly lower Stroop effect than monolinguals. Moreover, the results of the current study revealed different brain activity topographies in response to different levels of cognitive load.

Conclusion : This is probably representing the activity of the regions responsible for managing cognitive overload and participants' performance in the case of increasing cognitive demand.

Keywords : Cognitive resilience; cognitive load; Stroop Task; cognitive abilities

Count: 132
Abstract ID: 301
subject: Special topics: Art and Neuroscience
Presentation Type: Oral

A plausible brain mechanism involved in comprehension of fractal animations

Submission Author: Sarshar Dorosti

Sarshar Dorosti[1], Seyed Hasan Soltani1[2], Reza Khosrowabadi2[3]

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Background and Aim : Many studies have investigated brain mechanism involved in process of various features of visual stimuli such as color, light, contrast and so on. Among them, fractal animation as a genre of computer and digital art implies the mathematically beauty of self-similarities and fractals to create a new media art in texture and landscape generation, and plant growth simulation. Nevertheless, it is still questionable that how the brain process and conceive the fractal animations. In this study, we hypothesized that fractals must convey their self-similarity effect on the brain signals as well.

Methods : we produced some 2D and 3D fractal animations and after video processing we extracted the fractal dimension of each frames by box counting method. Subsequently, a group of 15 healthy young adults (age: 20-30, all male) were recruited and their brain activities were recorded with a 32-channels while they were exposed to the 2D/3D fractal animations. Then, fractal dimensions of the cleaned EEG data were calculated using Katz's method in a frequency band-specific manner. Finally, Association between the fractal dimensions of animations and fractal dimensions of the brain signals were calculated using the Pearson's' correlation algorithm.

Results : FDs of EEG signals mainly at the parietal channels (Pz- Cpz- Cp3) showed correlation with FDs of 2D animations. In addition, frequency-band specific analysis also showed significant correlation at the (P3-Pz-Cp3-Cpz-C3) in alpha band, and (Cz-Cpz-Pz-Cp4) in beta band. The results indicated that EEG signals at the parietal regions have more complex pattern while 2D animations with higher FDs were presented.

Conclusion : Despite the difference in the similarity of different bands, results indicate significant similarity between the self-similarities in the fractal animations and self-similarities of the brain signals. It means when the complexity of visual stimuli increases the mechanism of information processing in the brain also enhance its complexity to better attend and comprehend the stimuli. Such a finding could help us to pave the way to better understand the brain behavior and has a great potential to be used in brain-computer interface applications.

Keywords : fractal animations; fractal dimensions; box-counting; Katz, Electroencephalography (EEG);

Count: 133
Abstract ID: 197
subject: Emotion, Motivation
and Behavior: Neural Basis of Human Behavior
Presentation Type: Poster

The role of mGluR4 receptors within the nucleus accumbens in the acquisition of morphine-induced conditioned place preference in male rat

Submission Author: Zahra Ebrahimi Farzad

Zahra Ebrahimi Farzad[1], Nazanin kahvandi[2], Abdolrahman sarihi[3]

1. master of science
2. master of science
3. PHD

Background and Aim : Several studies have shown that glutamate in the nucleus accumbens (NAc) is required for the development of morphine-induced conditional place preference (CPP). Metabotropic glutamate receptors (mGluRs) in the nucleus accumbens also play an important and key role in the reward pathway. However, the role of different subtypes of these mGluR in different steps of the morphine-induced conditioning place preference is less well known. In the present study we investigated the effect of bilateral intra-accumbal infusion of VU0155041, a specific mGluR4 agonist on the acquisition of morphine induced CPP in male rats.

Methods : Male Wistar rats weighing 200-250 g were bilaterally implanted with cannulae above the NAc. VU0155041,at the doses 10,30 and 50 μg / μl was injected bilaterally into the nucleus accumbens during the day of conditioning . Conditioning scores and locomotor activity were recorded by maze router software.

Results : The results showed injection of mGluR4 agonist in to the nucleus accumbens dose-dependently decreased morphine-induced conditional locus preference in male rats.

Conclusion : There is specificity in the role of different mGluR subtypes in reward pathways which has been discussed in this paper.

Keywords : Metabotropic glutamate receptor type 4, morphine, nucleus accumbens, conditioning place preference.

Count: 134
Abstract ID: 555
subject: Motor Systems
and Movement Disorders: Movement Disorders (Parkinson, Huntington's, ALS, Ataxia, edication-induced Movement Disorders)
Presentation Type: Poster

The Effect of Rhythmic Movement Training on Eye and Hand Coordination in Children with Developmental Coordination Disorder

Submission Author: Sadaf Ebrahimnejad

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Background and Aim : Children and adolescents with developmental coordination disorder show a reluctance to engage in activities that require physical and motor response and they have a low tolerance, frustration, and low self-esteem (Archibald and Alloway,2008). Developmental coordination disorder is an injury, immature, or motor disorder. Given this, one may face problems with speech, eye movements, perception, thinking, special learning problems, personality, and behavior and stability (Ball,2002). The term developmental coordination disorder has replaced with visual-motor problems, developmental dysfunction, and physical dysplasia, clumsy. Developmental coordination disorder is related to condition in which children have difficulties in learning and performing different aspects and these problems are not the result of any other known medical conditions (Hyde and Wilson,2011). Developmental coordination abnormalities occur when there is a delay in the development of motor skills, or problems occur in performing coordinated movements, which resulting in the inability to perform daily tasks. A child with developmental coordination disorder may have problems in analyze the sensory information that receives from the environment, use this information to select the appropriate action plan, arrange every movements, send the correct message to produce a concerted action, or integrate all of this actions to control movement (Smits-Engelsman et al.2013). In rhythmic movements due to the weight, order and harmony of its components and elements, and also these movements fruition of rich movement sensory experiences, audible, visual musical stimuli and appearance sequence of stimuli and responses, conditions are created for children in which in addition to subjective, cognitive, perceptual, and motor questions, there are areas for the future development and successful learning of academic skills such as reading, writing and calculating (Rafi, 2004). The aim of this study was to investigate the effect of rhythmic movement training on eye and hand coordination in children with developmental coordination disorder

Methods : The method of this study is quasi-experimental and pretest-posttest. This study was performed by screening through Wilson Growth Questionnaire 2007 and teachers Motor Observation Inventory of 543 male students of 8 to 11 year-old in Urmia, that was diagnosed 30 children with developmental coordination abnormalities and these were participated in the research by obtaining written consent from the parents. The experimental group participated in 8 week course and 3 times a week for each 45 minute session of the rhythmic movement program. The control group only participated in routine school activities during this time. The tools used in this study included Soda Pop eye-hand coordination tests, developmental rhythmic movements based on the Galahoo model (2011). Accordingly, ANCOVA test was used to investigate the research hypotheses

Results : The results of covariance showed that there was a significant difference (p <0.05) between control group and rhythmic exercises (F = 50.620).

Conclusion : Therefore, rhythmic exercises can have a positive effect on hand and eye coordination of male students. So, educators and teachers need to use this tool to improve students' hand-eye coordination and cognitive-motor skills in their training programs.

Keywords : Rhythmic Movement, Eye and Hand Coordination, Children, Developmental Coordination Disorder

Count: 135
Abstract ID: 174
subject: Emotion, Motivation and Behavior: Stress and the Brain (Stress-modulated Pathways, Stress and Cognition, Stress Related Disorders)
Presentation Type: Oral

Diesel Exhaust Nano-Particles Exposure: Depression and Anxiety related Neuro-Inflammatory and Oxidative stress in male and female mice

Submission Author: Mojtaba Ehsanifar

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Background and Aim : Air pollution exposures in addition to increased morbidity and mortality caused by cardiovascular and respiratory diseases, may cause oxidative stress and neuroinflammation and contribute to the escalating prevalence to central nervous system (CNS) diseases. Air pollution is a major contributor to global air pollution, and diesel exhaust particles (DEPs), is its most important component. Diesel exhaust (DE) contains more than 40 toxic air pollutants and is a major constituent of ambient particulate matter (PM), particularly of ultrafine-PM. We hypothesized that females may be less susceptible than males to DEPs exposure neurotoxicity, Anxiety and Depression.

Methods : Sub-chronic exposure of NMRI mice to DEPs (350–400 µg/m3 for 6 h per day, 5 day per week and 14 weeks) caused significant increases in malondialdehyde (MDA) and expression of pro-inflammatory cytokines (IL-1α, IL-1β, IL-6, TNF-α), nNOS and HO1 in various brain regions such as olfactory bulb (OB) and hippocampus (HI).

Results : DEPs exposure also caused anxiety and depression in male and female mice. The observed effects were less pronounced in female than in male mice in a number of cases. Male mice appeared to be significantly more susceptible than female mice to induced neuroinflammation by DEPs exposure.

Conclusion : Findings indicate that sub-chronic exposure to DEPs causes Anxiety and Depression, oxidative stress and neuroinflammation in brain, and suggests that sex may play important roles in modulating susceptibility to anxiety and depression related DEPs neurotoxicity.

Keywords : Air Pollution, Anxiety and Depression, Diesel exhaust Nano-particles, Neuro-inflammation, Oxidative stress, Neurotoxicity.

Iran University of Medical Sciences

Iranian Neuroscience Society

Count: 136
Abstract ID: 173
subject: Neural Injuries and Neurodegenerative Disorders: Neurotoxicity, Neuroprotection, Inflammation
Presentation Type: Poster

Memory and learning disorders related alters expression of pro-inflammatory cytokines and Hippocampal NMDA receptor subunits, following exposure to Diesel exhaust nano-particles in male mice

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Background and Aim : It has been shown that sub-chronic exposure to nanoscale (<100 nm) diesel exhaust particles (DEPs) containing air pollution may lead to oxidative stress and neuroinflammation in adult male mice. In the current study, we investigated the effects of DEPs on hippocampus-dependent spatial learning and neuroinflammation and memory-related gene expression in male mice.

Methods : In this study, we divided 48 adult male mice into one control group and three exposure groups. Animals were exposed to 350-400µg/m3 DEPs for 3, 6 and 8 hours daily for 12 weeks. The elevated plus maze and Morris water maze device were used to examine anxiety and spatial learning, respectively

Results : The mRNAs expression levels of pro-inflammatory cytokines, N-methyl-D-aspartate (NMDA) receptor subunits and glutaminase were studied in the hippocampus (HI) by real-time RT-PCR. In addition, malondialdehyde (MDA) tests were used to determine the state of oxidative stress. After 6 and 8 h of exposure to DEPs, the mRNA expression of NR2A and NR3B in IL1α, IL1β, TNFα, NMDA receptor subunits and MDA levels increased significantly ($P < 0.05$). Also, the exposed mice to DEPs for 3, 6, and 8 h showed a decreased entering to the open arms and spent less time there.

Conclusion : As well as, 6 and 8h/day exposed mice required a longer time to reach the hidden platform. Sub-chronic exposure to DEPs affects oxidative stress, neuroinflammation and anxiety, and spatial learning and memory.

Keywords : Nanotoxicology;Air Pollution; Diesel exhaust particles; Learning and memory; Neuroinflammation; Hippocampus;

Count: 137
Abstract ID: 474
subject: Emotion, Motivation and Behavior: Stress and the Brain (Stress-modulated Pathways, Stress and Cognition, Stress Related Disorders)
Presentation Type: Poster

Stress-induced memory impairment: Involvement of hippocampal miR-1 and CREB/BDNF signaling pathway

Submission Author: Mehdi Eivani

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Background and Aim : Pre-clinical and Clinical studies have shown that physiological or psychological stressors via activating the HPA axis led to the release of corticosterone or cortisol in rodents and humans, respectively. Crossing of glucocorticoids from blood brain barrier and their binding to the mineralocorticoid and glucocorticoid receptors influence a variety of physiological functions including memory consolidation and retrieval. Both coping with stressful stimuli and forming of new memory were suggested to change protein synthesis and degradation in the brain. MicroRNAs (miRs), small non-coding RNAs, have a modulatory role in the post-transcriptional gene silencing via binding to 3 UTR of mRNAs to regulate different cellular processes including memory-induced protein synthesis. Considering these, the aim of the present study was to investigate the possible involvement of hippocampal mir-1 as well as CREB/BDNF signaling pathway in stress induced memory impairment.

Methods : A step-through passive avoidance task was used to assess memory performance in male Wistar rats (200-220 g). An elevated platform (EP) apparatus was also used to induce stress. The alterations in the p-CREB/CREB ratio, and the levels of BDNF in the hippocampus and also miR-1 expression were examined by Western blot analysis and real time PCR, respectively.

Results : The results showed that post-training exposure to acute stress induced amnesia associated with up-regulation of miR-1 in hippocampus. Also, the exposure to the acute EP stress reduced the hippocampal p-CREB/CREB ratio and the levels of BDNF.

Conclusion : Taken together, these findings suggest that the exposure to the acute stress induces memory impairment possibly via the attenuating of the p-CREB/CREB ratio and BDNF levels in the hippocampus of the rats. Our results shown that miR-1 up-regulation possibly involve in down-regulation of p-CREB/CREB ratio and BDNF levels in the hippocampus.

Keywords : Stress; Hippocampus; BDNF; CREB; miR-1; Rat

Count: 138
Abstract ID: 246
subject: Pain and Sensory Systems: Tactile, Somatosensation and Pain Syndromes
Presentation Type: Poster

The sensitivity to thermal pain is dose-dependently altered by intra-BLA injection of orexin A

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Background and Aim : The amygdala is a complex structure that is essential for processing both fearful and rewarding environmental stimuli. This nucleus is consist of multiple interconnected nuclei including the basolateral complex (BLA), the corticomedial complex and the central nucleus of the amygdala (CeA). The BLA consists of excitatory glutamatergic neurons and inhibitory GABAergic interneurons. Also, it has massive neural connections with lateral hypothalamus (LH). Also, LH is rich in orexinergic neurons which modulate various brain functions such as appetite, sleep-wake cycle and pain. Also, the BLA nucleus plays an important role in anxiety, fear, aversive memory and learning, social behavior, reward behavior and pain modulation. Moreover, neural projections of the descending pain modulatory pathway are originating from the amygdala and terminated in the dorsal horn of spinal cord. Therefore, the purpose of this study was to assess the role of orexin A in the pain modulation by BLA nucleus of the amygdala.

Methods : In this study, male Wistar rats weighing 200–270 g (n=7 per group) were purchased from the animal facility of Baqiyatallah University of Medical Sciences. Animals were anaesthetized with 60 mg/kg ketamine and 7.5 mg/kg xylazine and fixed in a stereotaxic apparatus. The stainless steel 23-gauge guide cannulas equipped with a 30-gauge stylet were unilaterally implanted in the right BLA nucleus. After recovery period, orexin A were injected into the BLA nucleus, and 5 Minutes later, the tail flick and hot plate tests were done by 60 seconds intervals. Every test was recorded for 70 minutes with 10 minutes intervals. At the end of the tests, animals were anesthetized and their brains were removed and examined for the correct cannula implantation in the BLA nucleus.

Results : Our results demonstrated intra-BLA injection of the lowermost dose (1 μM) of orexin A significantly decreased the latency to response in the hot plate test. The sensitivity to thermal pain was not altered by intra-BLA injection of 50 and 100 μM orexin A. However, intra-BLA injection of the highest dose (150 μM) of orexin A significantly increased the latency to response in the hot plate and tail flick tests.

Conclusion : Based on the results of present study, it can be concluded that the orexin A has dose-dependent effect on the sensitivity to thermal pain in the hot plate and tail flick tests. Therefore, the highest dose of orexin A exerts antinociceptive effect in the BLA complex of the amygdala. Conversely, the lowest dose of orexin A has pronociceptive effect in this structure.

Keywords : BLA nucleus, Orexin A, Pronociception, Antinociception.

Count: 139
Abstract ID: 148
subject: Cognition: Other
Presentation Type: Poster

Extracting the features and methods of separating the letters and mental words through the EEG signals

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Background and Aim : One of the problems that preoccupied the researchers today is how the perceptions are shaped and how to detect it from the brain. Perhaps one of the most important applications is the BCI for communicating the remote from the mind or even writing based on imagine. In order to speak first, person process their desired words in the mind and then speak. If a person has been unable to speak for any reason, how would it convey the desired word to those around you? This is while the individual has processed the desired word in mind, but is unable to express it. So what we think is happening in the brain. So, if the brain's activities are detected through examining nervous signals while thinking, it may be possible to find a trace of what people are imagining.

Methods : In this study, persian letters and words have been used. The words in the minds of the subject can have different categories. For a word, there may be some equivalent in the mind of the subject and there is no equivalent for another word. For this purpose, familiar and unfamiliar words as well as the letters used as a criteria for comparing two types of words were imagined and recorded during the two imagine and vision tests of brain signals. So that in the vision test, the subjects saw 11 words and letters and imagined them in other test.

Results : After the signals were recorded and analysed in the two time and frequency domains, finally features were found to separate imagined letters and words. In the domain of time, when thinking to the word, the signal has a defined rhythm and volatility associated with the alpha and beta bands. On the other hand, the corresponding word signal diagrams also had phase differences so that unfamiliar words signal was recorded earlier. In the frequency domain, it was observed that by the beginning of the imagine, the Alpha power was increased that Its increased for unfamiliar word, familiar words, and letters, respectively. However, within the range of the stimulus presence, the Alpha power is reduced, suggesting a focus. As well as the β band ratio to the Alpha as a measure of focus, it was observed that this ratio is increased for letter, familiar and unfamiliar words, respectively.

Conclusion : This study was based on the analysis of mental words, and in the first step between familiar words and unfamiliar words, it was found finally that the best way to separate the words and letters is the high beta range, which the beta to alpha ratio for letters is much lower than words. Also, the low beta range(12-20Hz) is the appropriate range for the separation of familiar and unfamiliar words. The accuracy of these data was obtained by t testing and $p < 0.05$, and it was observed that all these traits apply to the larger statistical community.

Keywords : Mental words, Imagine, Electroencephalography, Classification, Brain bands

Count: 140
Abstract ID: 172
subject: Computational Neuroscience: Modeling and Simulation
Presentation Type: Poster

Investigating the algorithm of image-processing in brain encountering with repetitive patterns

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Background and Aim : When our brain encounters with an image, it sends a comprehensive picture of it including all the objects to Occipital lobe where it is primarily processed and some features are realized (e.g. Surface, edges, etc.). In the next step, this data is sent to a section between Parietal and Occipital to be located precisely. Finally, the processed is done by sending this data to temporal lobe –where the particular part of long term memory used by image-processing is located- so the awareness of those features is recognized. The question that in repeated patterns exists is how the brain covers the whole objects of this wide image in such a short time; what we are looking for in this article.

Methods : Subjects were people between 17-22 years old with no history of neural, psychological or vision problems. A 16-channel EEG device was used to extract signals and brainwaves. Then pre-processing was done. Next, in order to investigate the process of brain, a test including different pictures was designed. Each stimulus was shown to subject for 1 second and between each two stimuli there was a 2 second blank screen. This test was repeated many times so the repeatability of each component and diagram is proved.

Results : The important point is that a significant activity of theta band of brain was observed in the frontal lobe in a specific time between 300 to 600 ms after the stimulus only in repetitive patterns. In addition to different brainwaves, independent component of eye movement was investigated as well. In first 300 ms after the stimulus no eye movement can be observed in repetitive patterns without distinct object which is in contrary to the ones (both complicated and simple patterns) with a distinct object.

Conclusion : In this research we were extracting an algorithm which explains how the brain process a wide repetitive pattern image without any changes in speed of its process. Getting the results together obtained from the tests, we could prove that the brain encounters a repetitive pattern and simultaneously realize that the pattern surrounding the main object have the same features send this data to the frontal lobe where it is duplicated all over the field of vision. This duplication operation is shown by the mentioned theta band activity. So in the result despite the large scale wideness of pattern, we are needless to move our eyes to completely process it. Moreover, the speed of processing in these kinds of patterns is boosted significantly.

Keywords : Repititive patterns, Vision, EEG, tetha band, Image processing

Count: 141
Abstract ID: 341
subject: Emotion, Motivation
and Behavior: Reward and the Brain
Presentation Type: Poster

Alteration of NR2A and NR3A genes expression in Morphine addicted male rat following Crocin administration in Hippocampus and Striatum regions

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Background and Aim : Addiction is a disorder of the brain's reward system which arises through transcriptional and epigenetic mechanisms and occurs over time from chronically high levels of exposure to an addictive stimulus. Morphine is a pain medication of the opiate variety which is found naturally in a number of plants and animals. It acts directly on the central nervous system (CNS) to decrease the feeling of pain. Morphine is a highly addictive substance. Neurodegenerative drugs like crocin is currently used as drug for the restoration of cerebral ischemia. The aim of this study was to evaluate the NR2A and NR3A gene expression in striatum and hippocampus and assess the Crocin capacity as the neuroprotection agent.

Methods : All experiments were performed on male rats obtained from Pasteur Institute weighing 220-240g at the beginning of the experiment. They were housed in groups of five in each cage and they were maintained under the controlled environmental conditions. A total of 20 rats were divided into 4 groups: control, morphine, morphine-Crocin and Crocin. In the Crocin group, Crocin administration was performed every other day through the 21-day morphine addiction procedure. All the groups were treated for 21 consecutive days and following the drug treatment, dissected part of the brain was removed on day 21 for the control, morphine and Crocin groups. Following the decapitation, different parts of the brain including hippocampus and Striatum regions were removed from the skull and the regions were dissected on a plate full of ice. The samples were immediately lysed and the RNA extraction procedure was carried out. The expression of NR2A and NR3A was evaluated by performing Real time PCR. The statistical analysis was performed with one-way ANOVA and t-test method.

Results : From t-test analysis, it can be concluded that injection of morphine significantly affects the expression of NR2A gene in the hippocampus (P <0.01) but does not have a significant effect on the gene in the striatum (P> 0.05) The expression of NR3A gene was meaningless in the hippocampus and striatum (P> 0.05, P> 0.05, respectively). In addition, Crocin has a significant effect on the increase of NR2A expression in the hippocampus compared to morphine (P <0.05), but has no significant effect on striatum (P> 0.05). This drug has no significant effect on the expression of NR3A gene in the hippocampus But it reduced the expression of NR3A gene in the striatum (P> 0.05 and P <0.01).

Conclusion : Taking together, all the findings suggested that the NMDA main subunits does change significantly following the Morphine uptake in rats in Hippocamus and Striatum regions. Moreover, we did find Crocin as a neuroprotection agent on responses induced by morphine.

Keywords : Addiction; Morphine; NMDA; Hippocampus; Striatum

Count: 142
Abstract ID: 93
subject: Neuropsychiatry and Psychology: Other
Presentation Type: Poster

A Systematic Review of Parent Management Training for Disruptive Behavior in Pre-School Children with Autism Spectrum Disorder

Submission Author: Bahareh Eskandari

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Background and Aim : Autism Spectrum Disorder (ASD) is a neurodevelopmental disorder with a wide range of symptoms which can be divided into two main categories: impaired communication and social interaction; restricted and repetitive behaviors, interests or activities. Moreover, children with autism may demonstrate disruptive behavior that can slow down the progress of interventions. Parent Management Training (PMT) is a general class of interventions which targets disruptive behaviors an important role in reduction or prevention of these kind of behaviors in children.

Methods : The purpose of this article is to review the PMT programs for disruptive behavior in pre-school children, gathering the characteristics of programs and evaluation of programs which have been reported to be influential for ASD. In this article in order to find related papers some regular search strategies has been used. For foreign papers PsycNet, Sciencedirect, Medline, PubMed, Scopus and Web of science were used and for the Iranian papers we used ISC, SID and irandoc.

Results : After removing the repetitive articles, the title of the PMT programs were discovered. Amongst available articles, consist of 59 foreign and 4 Iranian programs. For each of this these programs various data was collected, such as program title, researcher's name(s), target groups, publishing year, a brief explanation of the program, purpose and the effectiveness of the program. Amongst mentioned programs, only two programs had literature review or meta-analysis on ASD that only one of them has reported a suitable efficacy.

Conclusion : There are few PMT programs in which the efficacy of them are confirmed about ASD. As a result, it is indispensable to consider more the effectiveness of the programs about this disorder.

Keywords : Neurodevelopmental Disorder; Autism Spectrum Disorder; Disruptive Behavior; Parent Management Training

Count: 143
Abstract ID: 141
subject: Cognition: Learning and Memory
Presentation Type: Poster

Effect of board games on visual memory in elementary school children with Down syndrome

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Background and Aim : This research aimed to investigate the effect of board games on visual memory in elementary school children with Down syndrome. The research desighn was semi-experimental with pre-test, post-test and a control group.

Methods : The statistical population included all elementary school children with Down syndrome in Tehran in the academic year of 2012-2013. Among them, 30 elementary school children with Down syndrome were selected by convenience sampling and randomly assigned to two groups of experimental (n=15) and the control group (n=15). The visual memory span of working memory in Wechsler Intelligence Scales for Children-Fourth edition Integrated (WISC-4I) and a researcher-made instrument were used to evaluate the visual memory of the participating children. The experimental group was trained by 14 sessions (30minutes) of board games, while the control group received no training. Data were analyzed using descriptive and inferential stastistic (ANCOVA).

Results : Based on these findings, the effect of board games on visual memory was significant.

Conclusion : At the end, using board games to improve memory of the children with Down syndrome was discussed. Further discussion, as well as suggestions for future research are presented.

Keywords : Board games, Visual memory, Children with Down Syndrome.

Count: 144
Abstract ID: 497
subject: Neural Injuries and Neurodegenerative Disorders: Other
Presentation Type: Oral

Effect of DBS on seizure-induced cognitive impairments

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Background and Aim : Leptin is a peptide hormone secreted by adipose tissue. Leptin also acts on the hippocampus where it facilitates the induction of long-term potentiation. It also enhances NMDA receptor-mediated transmission. Previous studies have shown that Leptin plays a role in learning and memory. There is evidence that Leptin can have antiepileptic effects. This suggests that Leptin in the brain may be involved in cognitive deficits associated with seizure. In the current study, the possible effects of Leptin on cognitive impairment following PTZ-induced seizures were examined in male rats.

Methods : Male rats were divided into 5 groups including control and pentylenetetrazol (PTZ) plus saline or Leptin (0.25, 1 or 2 µg/kg). After one week of intrahippocampal surgery period, PTZ (50 mg/kg) was injected intraperitoneally and after 30 min, saline or different doses of Leptin were injected into bilateral CA1 region. Behavioral tests (Open field, Morris water maze, Novel object recognition test and shuttle box) were done thirty minutes after the intrahippocampal injection of saline or Leptin.

Results : Our results demonstrated the significant impairment of learning and memory in PTZ group (P < 0.01). Intrahippocampal injection of Leptin at the dose of 1µg/kg significantly improved learning and memory in PTZ + Leptin group compared to PTZ group.

Conclusion : Obtained results showed that Leptin in PTZ-treated animals has an improving effect on learning and memory.

Keywords : Seizure, Low frequency stimulation, learning and memory, Long-term potentiation, Hippocampus

Count: 145
Abstract ID: 27
subject: Neuropsychiatry and Psychology: Other
Presentation Type: Poster

The Efficacy of Mindfulness-Based Cognitive Therapy(MBCT) on Body image and Indicators of pain in woman with Systematic Lupus Erythematosus(SLE)

Submission Author: Ladan Esmalian khamseh

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Background and Aim : Systematic lupus erythematosus (SLE) is an autoimmune inflammatory disease,complex and involving multiple organ that has many physical, psychological and social consequences. The purpose of this study was to investigate the effect of mindfulness based Cognitive Therapy on Body Image and indicators of pain in women with SLE.

Methods : The research was a semi-experimental design with pre-test and post-test design in both experimental and control groups, and follow-up after 3 months of intervention. The statistical population included women SLE, were selected as available samples and randomly were placed in two control and treatment (experiment) groups. The experimental group was subjected to mindfulness approach intervention in 8 session 0f 90 minutes, where as the control group did not receive such an intervention The research tool was short form Mc Gill pain(2009) , Body Image fisher (1970) Questionnaire . Data were analyzed by SPSS24 software and repeated measures analysis of variance after completing the questionnaires.

Results : The result showed a significant difference between exprimental and control groups in total scores of the indicators of pain ,body image (P<0.05).

Conclusion : Throught this therapeutic approach, we can help to reduce the concern of the body image, and acceptance of pain in patients with SLE

Keywords : Systematic Lupus Erythematosus(SLE), cognirive Therapy, mindfulness ,Body image ,Indicators of pain

Count: 146
Abstract ID: 652
subject: Neuropsychiatry and Psychology: Addiction (Drug, Alcohol, Internet, Food) and Gambling
Presentation Type: Poster

Effectiveness of Transcranial Direct Current Stimulation (TDCS) on Reducing of Use Voracity and Increasing the res level of Methadone User who were Referred to Addiction Clinics in Najaf Abad City

Submission Author: Ali Esrafilian

Ali Esrafilian[1], hossein ali tohidi moghaddm[2]

1. teacher
2. Psychologist and researcher

Background and Aim : The purpose of this study is to evaluate the effectiveness of the transactional direct current stimulation (TDCS) on reducing of use voracity and increasing the resilience level of methadone users who were referred to addiction clinics in Najaf Abad city.

Methods : In order to implementation of research, 30 persons from all treated addicts with methadone in clinics of Najaf Abad were selected based on entry and exit criteria, and 15 persons were randomly assigned to control group and 15 persons in the experimental group were under 10 sessions of electrical stimulation of brain from skull. Before and after the interventions, the Connor-Davidson Resilience Questionnaire (CD-RISC) (2003) and Fadardy's use voracity, on Erfan and Ziaee (2008) were delivered to implementation of pre-test and post-test.

Results : test and post-test. The results of the analysis showed that electrical stimulation (TDCS) leads to decreased use voracity and increased resiliency (p <0.01).

Conclusion : It can be concluded that electrical stimulation (TDCS) leads to decrease use voracity and increase resilience in addicts user of Methadone.

Keywords : Electrical Stimulation Device (TDCS), use voracity, Resilience, Addicts User of Methadone.

Count: 147
Abstract ID: 432
subject: Neuropsychiatry and Psychology: Other
Presentation Type: Oral

Brain Mythologies in Psychiatry

Submission Author: Farbod Fadai

Farbod Fadai[1]

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Background and Aim : Wilhelm Griesinger in 1861 stated: "If we only had an exact knowledge of brain, we would then know the psychic life and mental disorders, too." At the end of the 19th century, psychiatry tried to adapt to the model of experimental and natural science which ruled on the whole domain of medicine since 1850. So, psychiatry concentrated on searching the physical causes of mental disorders. But was this strategy successful?

Methods : The Psychiatric, neurologic, and Psychologic literature with respect to the organic causes of mental disorders were searched and read.

Results : Since the year 1900, the early euphoria of somatic approach began to deteriorate. This approach did not present a satisfactory explanation for the majority of mental disorders and did not offer effective treatments as well. A knowledge of stagnation in scientific research, along with pessimism about the somatic therapeutic methods were spreading among the psychiatrists. Such was the atmosphere that directed Freud to an imaginative system-namely psycho-analysis-to explain and to treat mental disorders. When Karl Jaspers in Heidelberg began to work on his new system of psychopathology, faced the above-mentioned situations. According to Jaspers, a pure somatic approach was threatening the psychiatry, because this approach is accompanied with an hypothesis that the real fact of human experience is a somatic event, and if psyche is addressed it is a transient substitute which has no real scientific value.

Conclusion : The above-mentioned view-point leads to an excessively hasty identification of morphologic or physiologic facts with mental experiences and in this procedure reaches to adventurous constructions that Jaspers addresses as "brain mythologies". Afterwards the experimental scientific facts are clumsily re- formulated with indicating about "psyche", "individual", or "mental illness", which means misplaced expansion of the physical world's domain of validity. But psychopathology, this brain child of Jaspers, is always facing this fact that man is the product of culture. The animals, too, may suffer from brain and neural disorders, but the mental disorders are specific to man. Medicine is only one of the roots of psychopathology. Psychopathology is not only a kind of biology, but is one of the humanities.

Keywords : Brain, Psychiatric Disorders, Psychopathology, Jaspers

Count: 148
Abstract ID: 139
subject: Cognition: Learning and Memory
Presentation Type: Poster

Synaptic plasticity in stress-induced amnesia.

Submission Author: Saba Faghihzadeh

Saba Faghihzadeh[1]

1. University of Tehran

Background and Aim : Extensive studies of the effects of stress on brain structures and synapses have been conducted for many years. Extensive issues with the onset of glucocorticoid release from the adrenal during HPA axis activity after stressor exposure have been studied. According to research, due to the lipophilic nature of these hormones, they are able to cross the blood-brain barrier and are therefore able to expose neurons. The receptors of these hormones in the brain are on two types of mineralocorticoids (MRs) and glucocorticoids(GRs). The distribution of these receptors at different brain sites is different. However, in general, the three major sites of PFC, hippocampus, and amygdala have a broad distribution of these receptors. Because of the functional nature of these three brain regions in terms of learning and memory and in general cognitive functions, as well as the importance of learning and memory-related studies as well as understanding the physiological pathways of memory impairment (such as Alzheimer's disease with an increased incidence rate in recent decades), these topics have been much studied. As research has shown, glucocorticoids can induce long-term potentiation or long-term depression (neuronal plasticity), which is dependent on the type of stressor involved by causing structural and physiological changes in their target neurons at these sites.

Methods : The presentation is a review.

Results : The presentation is a review.

Conclusion : Stressed neurons from chronic stressor can experience long-term weakening/depression at some brain sites, which is evidence of memory loss and impaired memory function(amnesia). This article discusses these topics in detail. It is worth noting that research is being done every day, and that is adding to our knowledge of the various processes associated with synaptic plasticity in stress-induced amnesia.

Keywords : Learning and memory, HPA axis, synapse, hippocampus

Count: 149
Abstract ID: 530
subject: Neuropsychiatry and Psychology: Other
Presentation Type: Poster

The Role of Personality Traits in Working-Age Formation in Workers

Submission Author: Roya Fakhri

Roya Fakhri[1]

1. M.A of Psychology, Islamic Azad University of Urmia

Background and Aim : Workers may experience many psychological problems due to stress and work-related stress and economic problems; the purpose of this study was to investigate the role of personality traits in predict of working-age molded imagery.

Methods : The present study was a descriptive correlational. the statistical population of this study was the workers of Urmia industry in summer of 2019. 350 people were selected by available sampling method. 315 healthy questionnaires were collected for analysis. Data collection tools were Hexaco Personality Questionnaire (2009) and Marcus, Fritz & Lee (2016) working-age molded imagery Questionnaire. Data analyzed by pearson and Linear regression test.

Results : The results showed that extraversion and openness had a significant negative relation with stereotypical perceptions of working age of workers. also, results of regression showed that the 0.148 variance of stereotypical perceptions of working predict by personality traits.

Conclusion : Conclusion: Based on this, it can be concluded that personality traits can predict the stereotypes about working age.

Keywords : Personality Traits, Working-Age Formation, Workers

Count: 150
Abstract ID: 531
subject: Neuropsychiatry and Psychology: Evidence-Based Psychology
Presentation Type: Poster

The role of Mindfulness and Emotional Empathy in predicting Marital Satisfaction of married students of Urmia Azad University

Submission Author: Roya Fakhri

Roya Fakhri[1]

1. M.A of Psychology, Islamic Azad University of Urmia

Background and Aim : The purpose of this study was to investigate the role of mindfulness and emotional empathy in predicting marital satisfaction of married students of Urmia Azad University.

Methods : This research is a descriptive-correlational study. The statistical population of the study includes all married students of Urmia Azad University in the second semester of 2018-2019. A sample of 240 married students was selected by convenience sampling method and completed Kentucky Mindfulness Questionnaire, Parsian et al Empathy Questionnaire and Enrich Marital Satisfaction Questionnaire. Data were analyzed using Pearson correlation coefficient and multiple regression.

Results : The results showed that there was a positive significant relationship between mindfulness and marital satisfaction ($p < 0.01$) and between emotional empathy and marital satisfaction ($p < 0.05$). Multiple regression results also showed that 0.24 of variance of marital satisfaction of married students was predicted by mindfulness and emotional empathy.

Conclusion : According to the results, it can be said that mindfulness and emotional empathy are important in predicting married students' marital satisfaction. Therefore, it is possible by educational programs to increase marital satisfaction of married students.

Keywords : Mindfulness, Emotional Empathy, Marital Satisfaction

Count: 151
Abstract ID: 107
subject: Neurorehabilitation and Regeneration: Occupational Therapy
Presentation Type: Poster

A report of case with ischemic changes and chromosome nine abnormality

Submission Author: Mohsen Fallahi

Mohsen Fallahi[1], bahareh nik akhtar[2], samaneh esfahani [3]

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Background and Aim : : a chromosomal abnormality cause so many diseases . but chromosome nine abnormality is a rare kind of abnormality that can cause a disability In children and Hypoxia-ischemia in the perinatal period is associated disability in children. But coexisting of each other is very rare and it leads to problem in differential diagnosis . be cause of that we want to report the case with ischemic change and chromosome abnormality.

Methods : this article is case report that was designed based on a CARE case report guidelines. a patient information was confidential between all researches and there is formal concent form patients parent for using this information.

Results : our case is female whom was born in 2018 and she was born in 37th week mothers pregnancy . since she was born she was hospitalized. She had a hypotonicity In all muscles that because of this she have a delayed developmental milestones. In her brain MRI there are increased signal intensity on axial T2 and flair images within the cerebral white matter. The lesion are located in the deep and subcortical white matter. The appearance is hypoxic ischemic changes . there is A patent foramen ovale in her hearts echocardiography . in her face there is a ptosis . she has a laryngomalacia . in her karyotype there is a large heterochromatic region on the proximal long arm of chromosome 9 was present in all cells but she has a normal enzyme activities in biomedical testing. She received occupational therapy services for her hypotonicity and delayed milestone . she use L-carnitine and Citicoline for improving in brain function. Because of the occupational therapy interventions and these their drugs she can crawl and she can sit for a 3 second.

Conclusion : : because of coexistence chromosomal changes and hypoxic ischemia there is a not definite a diagnosis for a delayed in milestone because this delayed can caused by both conditions . so in the future we suggest more gene analysis for exact changes in chromosome .

Keywords : ischemia; chromosome nine; dyspraxia

Count: 152
Abstract ID: 196
subject: Neural Injuries and Neurodegenerative Disorders: Neurotoxicity, Neuroprotection, Inflammation
Presentation Type: Oral

Neuroprotective effect of ghrelin in methamphetamine-treated male rats

Submission Author: Solmaz Fallahi

Solmaz Fallahi[1], Gisou Mohaddes[2], Hamid Soltani Zangbar [3]

1. student research committee, Tabriz university of medical sciences, Tabriz, Iran
2. PHD. of physiology, Drug Applied Research Center, Tabriz University of Medical Sciences, Tabriz, Iran
3. PHD. of Neuroscience, Department of Neuroscience, School of Advanced Medical sciences, Tabriz University of Medical Sciences, Tabriz, Iran.

Background and Aim : This study aimed to investigate the effects of ghrelin, as a neuroprotective agent, on cognitive impairment and apoptosis pathway in methamphetamine-treated male rats.

Methods : Sixty adult male Wistar rats were randomly divided into six groups (n=10): Saline/Saline (S-S), Saline/Ghrelin (S-G), Methamphetamine/Simultaneous Saline (M-SS), Methamphetamine/Simultaneous Ghrelin (M-SG), Methamphetamine/Delayed Saline (M-DS), and Methamphetamine/Delayed ghrelin (M-DG). Methamphetamine (5 mg/kg) and ghrelin (5 nM/kg) were injected intraperitoneally. Spatial and passive avoidance memories were evaluated by Morris water maze (MWM) and Shuttle box, respectively. Hippocampal expression levels of Cytochrome-C, Caspase 3, and Bax/Bcl-2 ratio were evaluated by Western blotting. TUNEL assay was performed to detect hippocampal neuronal apoptosis.

Results : Our results showed that time spent in the target quadrant in M-SS group was less than the control group. However, simultaneous ghrelin treatment could increase it. Ghrelin treatment reversed methamphetamine effects on hippocampal protein expression of Caspase 3 and Cytochrome-C, and BAX/Bcl-2 ratio. TUNEL assay showed an increase in the number of apoptotic cells in methamphetamine-treated animals, while ghrelin treatment decreased apoptosis.

Conclusion : These results indicate that ghrelin treatment could improve spatial memory and reduce neuronal apoptosis in the hippocampus of methamphetamine-treated animals

Keywords : Methamphetamine; Ghrelin; Memory; Apoptosis; Hippocampus

Count: 153
Abstract ID: 195
subject: Neural Injuries and Neurodegenerative Disorders: Neurodegenerative Disorders
Presentation Type: Poster

The role of blood brain barrier in multiple sclerosis

Submission Author: Solmaz Fallahi

Solmaz Fallahi[1]

1. student research committee, Tabriz university of medical sciences, Tabriz, Iran

Background and Aim : For all materials not easily commute to our central nervous system, A barrier known as the blood-brain barrier is built for our brain. Various studies have been done on the role of BBB in MS

Methods : : Various databases such as google scholar, Pub Med and Science direct were reviewed and 70 papers were selected. Of these, 40 articles were selected as the main essay for writing this review.

Results : Vascular endothelial cells in the walls of this region are quite compact together. We say that the so-called tight junctions. The system is to ensure that potentially harmful toxins, infectious agents and immune cells cannot enter the central nervous system. But the material that is necessary for normal brain metabolism, such as glucose and oxygen are able to cross this barrier, Carbon dioxide as a metabolite of brain metabolism is able to cross this barrier so. In MS following the destruction of the blood-brain barrier, damaging factors including white blood cells are able to pass through it. Due to the lack of specify of white blood cells to brain neurons, myelin antigens and oligodendrocytes are detected as foreign agents. And so they began to destroy them. The present paper is to examine the role of the blood-brain barrier in MS pathophysiology.

Conclusion : In MS, endothelial cells leading to the formation of the tight junctions is to be demolished. So disrupting of BBB could be one of the most important factors in MS pathology

Keywords : blood brain barrier - multiple sclerosis

Count: 154
Abstract ID: 72
subject: Emotion, Motivation
and Behavior: Neural Basis of Human Behavior
Presentation Type: Poster

Modulation of catalase, copper and zinc in the hippocampus and the prefrontal cortex in social isolation-induced depression in male rats

Submission Author: Hamidreza Famitafreshi

Hamidreza Famitafreshi[1]

1. Physiology departement, Tehran University of Medical Sciences-International Campus, Tehran, Iran

Background and Aim : Depression is a chronic illness of unknown etiology. Trace elements, such as copper and zinc, and defense antioxidants, such as catalase, are important factors that determine the clinical course of brain diseases. Furthermore, altered glucose metabolism in hippocampus and prefrontal cortex has been associated with depression. Identifying factors that can precipitate depressive-like behavior is of particular importance as it can direct clinicians towards the etiology of the disease

Methods : In this study, 16 male Sprague-Dawley rats were randomly divided into two groups: socialized and socially isolated. After one week of acclimatization, animals were housed in isolation for 14 days. Rats in the social group were socialized together for 14 days. On day 15, the forced swim test was performed and blood sugar was analyzed. The brain was removed immediately for biochemical analysis.

Results : Socially isolated rats showed more pronounced depressive-like behavior in the forced swim test than socialized rats. Moreover, socially isolated rats demonstrated significantly lower copper and zinc concentrations, as well as a marked reduction in catalase activity, in both prefrontal cortex and hippocampus compared to socialized rats. Additionally, blood sugar levels were higher in socially isolated animals.

Conclusion : Isolation causes reduction in copper and zinc levels and catalase activity, which may precipitate depressive-like behavior in these animals.

Keywords : copper, zinc, catalase, depression, glucose, prefrontal cortex, hippocampus

Count: 155
Abstract ID: 481
subject: Computational Neuroscience: Other
Presentation Type: Poster

Temporal dynamics of spatial frequency representation in IT Cortex.

Submission Author: Esmaeil Farhang

Esmaeil Farhang[1], Behnam Karami[2], Roxana Koushki[3], Farideh Shakerian[4], Mohammad-Reza A. Dehaqani[5]

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Background and Aim : One of the important features in information processing along the visual hierarchy from the retina to the inferotemporal cortex is the spatial frequency of input images. A massive body of studies suggests that stimulus with different frequency contents has distinct representations in the primary visual system. However, the representation of stimulus with different spatial frequencies in high level visual areas across the ventral stream is poorly understood.

Methods : Using neural data recorded from the monkey brain, we examined and analyzed the representation of spatial frequency filtered objects at different levels of abstraction. A combination of coding and decoding methods were applied to extract temporal dynamics of category information at a different level of abstraction. Using band pass spatial frequency filters, we produce three versions of stimuli including Intact (no filter), High (high pass spatial frequency filter), and Low (low pass spatial frequency filter).

Results : Consistent with previous studies, we observed the basic level advantages in Intact stimuli, whereas the temporal dynamic of category representation exhibits different patterns of advantages in Low and High spatial frequency stimuli. In Low stimuli, there is a great advantage of the basic level while in High stimuli, the basic and subordinate level exhibit a similar time course of representation.

Conclusion : Our observation provides evidence for the interaction of spatial frequency and temporal dynamics of category representation in the visual cortex.

Keywords : category representation, hierarchical abstraction, temporal dynamics;

Count: 156
Abstract ID: 158
subject: Neuropsychiatry and Psychology: Addiction (Drug, Alcohol, Internet, Food) and Gambling
Presentation Type: Oral

Comparison of LORETA Z score Neurofeedback and Cognitive Rehabilitation in terms of their Effectiveness in reducing Craving in Opioid Addicts

Submission Author: Alireza Faridi

Alireza Faridi[1], Farhad Taremiyan[2], Robert W Thatcher[3]

1. Zanjan University of Medical Science
2. Zanjan University of Medical Science
3. Applied Neuroscience Ink

Background and Aim : Previous studies have shown that conventional neurofeedback and cognitive modification treatments have led to numerous psychological improvements in patients suffering from substance use disorders. However, effectiveness of LORETA (Low-Resolution Brain Electromagnetic Tomography) Z score neurofeedback (LZNFB) and Cognitive rehabilitation therapy on reducing of opium craving has yet to be investigated. Thus, aim of the present study was to compare effectiveness of LZNFB and Cognitive rehabilitation therapy with methadone maintenance treatment (MMT) in reduction of opium craving in patients with opioid use disorder.

Methods : Thirty patients with opioid use disorder undergoing MMT were randomly assigned into three groups: LZNFB with MMT, Cognitive rehabilitation with MMT (as experimental groups), and MMT alone Control group. The LZNFB and Cognitive rehabilitation groups received 20 and 15 sessions of treatment, respectively. The three groups were assessed using a number of questionnaires as well as Dot-Probe Task at pre-test, post-test, and one-month follow-up.

Results : The results showed that both experimental groups accomplished significantly greater reduction in opium craving than MMT alone group at post-test and follow up ($P<0.05$). The LZNFB with MMT group showed higher decrease in opioid craving than the Cognitive rehabilitation with MMT group. In addition, Cognitive rehabilitation group experienced greater improvement on attentional bias towards craving cues than LZNFB with MMT group at post-test and follow up. Finally, LZNFB with MMT group and Cognitive rehabilitation with MMT group got higher scores on the recovery assessment scale than MMT alone group at post-test and follow up. According to results of this study, LZNFB training is more effective than Cognitive Rehabilitation in decreasing of craving and improving quality of life in addiction to opioids.

Conclusion : The findings of the current study provided preliminary support for the effectiveness of LZNFB and Cognitive rehabilitation on reduction of opium craving, improvement of attentional bias towards craving cues and quality of life among Iranian opioids use patients.

Keywords : Attentional Bias, Cognitive rehabilitation, Craving, LORETA Z Score neurofeedback, Methadone maintenance treatment, Opium use disorder.

Count: 157
Abstract ID: 307
subject: Neuropsychiatry and Psychology: Other
Presentation Type: Oral

Low peripheral arousal in psychiatric patients with inadequate response to pharmaco-therapy

Submission Author: Alireza Farnam

Alireza Farnam[1], Ava Mohammadzadeh[2], Masumeh Zamanlu[3]

1. Research Center of Psychiatry and Behavioral Sciences, Tabriz University of Medical Sciences, Tabriz, Iran
2. Department of Psychiatry, Tabriz University of Medical Sciences, Tabriz, Iran
3. Self-awareness Research Committee, Tabriz University of Medical Sciences, Tabriz, Iran

Background and Aim : Arousal and its eminences in psychology and neurosciences has been linked to the psychiatric pathologies such as anxiety and attention deficit hyperactivity disorder in children. The "Low arousal theory" is now proposed for explaining complexmechanisms of some psychiatric disorders. The aim of the current study is to introduce association of peripheral arousal which is mostly eminent in autonomic function of psychiatric patients with inadequate response to pharmaco-therapy.

Methods : Ten psychiatric patients, aged 20-60 years, with diagnoses of depression, Obsessive-compulsive disorder (OCD), anger attacks and sustained chronic fatigue syndrome who showed inadequate response to pharmacotherapy for 6 months or more were studied. Psychophysiology parameters of the autonomic function were recorded, analyzed, and compared with values presented for normal population.

Results : All the ten patients showed very reduced autonomic function both in sympathetic and parasympathetic activities. Skin conductance or skin galvanic response, heart rate variability (HRV), low frequency to high frequency measure of heart rate and other related parameters showed that "functional autonomic failure" may exist in these patients.

Conclusion : Arousal and specifically low peripheral arousal in the autonomic system is proposed to have relations with the resistance to neuro-pharmaco-therapies. These findings could be promising for farther advances in researches and treatments.

Keywords : Low arousal theory, Neurosciences, Neuropsychiatry, Treatment resistance

Count: 158
Abstract ID: 358
subject: Cognition: Learning and Memory
Presentation Type: Poster

Physical and cognitive training attenuate memory dysfunction and inflammation in focal cerebral ischemia injury

Submission Author: Fatemeh Farokhi Sisakht

Fatemeh Farokhi Sisakht[1], Saeed Sadigh-Eteghad[2], Gisou Mohaddes[3], Mehdi Farhoudi[4]

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Background and Aim : The aim of this study was to investigate the effects of physical and cognitive training separately or in combination on memory impairment and inflammatory responses in the ischemia model of rat.

Methods : Endothelin-1 (ET-1), a potent vasoconstrictor, was used to produce focal ischemia in the hippocampus in male Wistar rats. Physical, cognitive and combination training groups exposed to voluntary running wheel exercise or modified Barnes maze cognitive task or combination of this interventions for 4 weeks, respectively. Next, novel object recognition (NOR) task was used to assess recognition memory. Western blotting was used to evaluate the protein levels of Nuclear factor-kappa B (NF-κB), tumor necrosis factor-alpha (TNF-α), and tumor necrosis factor-alpha receptor 1 (TNFR1) in the hippocampal tissue.

Results : Hippocampal ischemia significantly impaired recognition memory with an increase of inflammatory proteins in the hippocampus tissue. Interventions in combination or separately significantly improved performance of ischemia-received animals in memory task. Furthermore, both physical and cognitive paradigms also reduced inflammatory factors in the hippocampus of ischemia-received rats.

Conclusion : These results show that physical and cognitive training separately or in combination had a positive effect on cognitive function passably via reduction of inflammation.

Keywords : Physical training, Cognitive training, Hippocampal ischemia, Learning and memory, Inflammation

Count: 159
Abstract ID: 106
subject: Cognition: Executive Function (Decision Making, Reasoning, Problem Solving)
Presentation Type: Poster

Cognitive Rehabilitation Therapy (CRT) effects in people with schizophrenia: An article review.

Submission Author: Elahe Fathi Azar

Elahe Fathi Azar[1]

1. MSc in Occupational Therapy, University of Social Welfare and Rehabilitation Sciences, Tehran, Iran.

Background and Aim : Cognitive deficits are a prominent, stable feature of schizophrenia from the time of the first episode throughout the illness. Cognitive rehabilitation has been defined as "the therapeutic process of increasing or improving an individual's capacity to process and use incoming information to allow increased functioning in everyday life". Also, it has been recently defined as "a behavioral training based intervention that aims to improve cognitive processes (attention, memory, executive function, social cognition or metacognition) with the goal of durability and generalization". Cognitive rehabilitation strategies can be distinguished into two main models: "compensatory" and "restorative. the "restorative" methods are based on knowledge deriving from neurosciences, in particular, neuronal plasticity, and have the objective to correct a specific deficit trying to repair the specific underlying compromised function using the capacity of the brain to develop and repair itself throughout the whole life.

Methods : A systematic search involved looking at the following databases: ProQuest, Pub Med, MEDLINE, and Google Scholars. The following terms were used to commence the search: schizophrenia, cognitive remediation, cognitive training, neurocognitive training, cognitive rehabilitation. 20 articles from 2000 – 2018 were initially identified. Finally, 9 randomized control trials were selected according to the criteria (RCT studies that used the restorative model in CRT).

Results : All studies evaluated neurocognition and used functional assessments. 4 studies used social cognition tests that were improved after CRT. Results demonstrate the efficacy of cognitive remediation interventions on cognitive and psychosocial functioning of people with schizophrenia. These benefits appear to be especially relevant for chronic and severe patients with schizophrenia.

Conclusion : It seems that targeting cognitive impairments in the early course of schizophrenia can result not only in cognitive improvement, but also in significant functional benefits in such important domains as social functioning, employment, and role functioning. The combination of psychiatric rehabilitation with cognitive remediation that includes both drill and practice and strategy coaching was significantly more likely to impact psychosocial outcomes than when psychiatric rehabilitation was provided alongside cognitive remediation that only used a drill and practice approach.

Keywords : cognitive training, cognitive rehabilitation, schizophrenia, neurocognitive training.

Count: 160
Abstract ID: 89
subject: Novel and Cutting-Edge Technologies: Brain Stimulation Methods   (ECT, rTMS, TDCS, DBS)
Presentation Type: Oral

Effects of Occupational Therapy Combined with tDCS on Cognitive Functions in male Patients with schizophrenia, A randomized control trial.

Submission Author: Elahe Fathi Azar

Elahe Fathi Azar[1], Hojat Allah Haghgoo[2], Masoud Nosratabadi[3]

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2. PHD in Neuroscience, University Associated prof., Department of Occupational Therapy, University of Social Welfare and Rehabilitation Sciences, Tehran, Iran.
3. University Associated prof., Department of Psychology, University of Social Welfare and Rehabilitation Sciences, Tehran, Iran.

Background and Aim : : Schizophrenia is associated with impairment in cognitive functions, including visual memory. Considering the role of brain stimulation on synaptic plasticity, memory and learning, the effects of TCDC on memory and learning in schizophrenic patients were investigated.

Methods : This study was implemented as an experimental (interventional), case-control, double-blind and randomized trial design. A total of 24 subjects (male) diagnosed as schizophrenia, age 45.5 ±6.5 years, were recruited and randomized in the experimental and sham groups. Their Spatial recognition, visual memory, and learning abilities were assessed using SRM and PAL subtests of The Cambridge Neuropsychological Test Automated Battery (CANTAB) before and after the intervention. Visuomotor Organization, Thinking Operations and attention were also assessed by The Loewenstein Occupational Therapy Cognitive Assessment battery (LOTCA). All subjects received customized occupational therapy activities. subjects were randomized into two groups (Intervention and Sham-Control). the experimental group received anodal tCDC, 6 sessions every other day, 20 minutes each session with 2 mA at DLPFC twice a day.

Results : Adding tDCS to conventional occupational Therapy resulted in a significant increase in spatial recognition and visual memory score ($P = 0.004$), learning abilities ($p = 0.01$), and attention ($p = 0.01$).

Conclusion : Anodal tDCS on DLPFC improved spatial and visual memory functions, attention and learning abilities. Transcranial excitation can be considered as a therapeutic candidate combined with Occupational Therapy in schizophrenic patients.

Keywords : Cognitive Functions, Schizophrenia, tDCS, Psychosocial Rehabilitation, Occupational Therapy.

Count: 161
Abstract ID: 105
subject: Special topics: Art and Neuroscience
Presentation Type: Poster

Art therapy in people with schizophrenia: An article review.

Submission Author: Elahe Fathi Azar

Elahe Fathi Azar[1]

1. MSc in Occupational Therapy, University of Social Welfare and Rehabilitation Sciences, Tehran, Iran.

Background and Aim : Art making is a way for the expression of deep and intense emotions. The client has an opportunity to express and externalize his or her inner thoughts and feelings related to the traumatic experience as well as the opportunity to process these thoughts and feelings. Art making in a therapeutic environment can create permanent changes in neural network connections as well as neuroplasticity, besides art therapy for persons with schizophrenia, is a healthy form of distraction from various symptoms, such as disturbing thoughts, hearing voices, etc.

Methods : A systematic search involved looking at the following databases: ProQuest, Pub Med, MEDLINE, and Google Scholars. The following terms were used to commence the search: schizophreniform, paranoid, schizoid, schizotypal, art therapy, creative art therapy, and schizophrenia. 25 articles from 1998 – 2018 were initially identified. Finally, 10 studies were selected.

Results : All 10 articles used group art therapy but each study had a different focus. 9 studies showed positive changes due to the expressive art therapy group. 1 research indicated that art therapy as delivered in this trial did not improve global functioning, mental health, or other health-related outcomes.

Conclusion : It seems that art therapy can help people with schizophrenia to create positive changes in personal and social life like improving coping skills, problem-solving skills, emotional awareness. etc.

Keywords : Schizophrenia, art therapy, art psychotherapy, creative art therapy.

Count: 162
Abstract ID: 588
subject: Neurorehabilitation and Regeneration: Speech and Language Therapy
Presentation Type: Poster

Treatment of Paraphasia after Left Hemisphere Stroke

Submission Author: Seyyedeh Maryam Fazaeli

Roya Mahdie [1], Seyyedeh Maryam Fazaeli[2]

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Background and Aim : Paraphasia is a speech error which might be observed in aphasic patients. It refers to a substitution of a wrong word or sound for a target word or phoneme. Three types of paraphasia are phonemic paraphasia, verbal (semantic) paraphasia, and neologism. Regarding the negative effect of this issue on communication, this article aimed to present a case treatment in a Persian-speaker aphasic adult.

Methods : The patient was a 58-year-old man with left hemisphere from stroke for the first-time (post-injury time=8 months and 15 days) referred to speech-language therapy. He had no other acquired disorders and visual and auditory deficits. CT scan of this patient indicated he had a lesion in the left frontal lobe. He was assessed regarding speech and language abilities. Therefore, he had non-fluent aphasia, verbal apraxia, and ideational apraxia. One of his speech impairments was verbal (semantic) paraphasia that refers to a word substitution, often is related to the target word. An Eight-Step Task Continuum generated by Rosenbek et al. (1973) was used for treating paraphasia including integral stimulation and simultaneous production, integral stimulation and delayed production with visual cue, integral stimulation and delayed production with no visual cue, integral stimulation and successive productions without intervening stimulation and without auditory or visual cues, written stimuli and simultaneous production, written stimuli and delayed production, appropriate utterance elicited by question, appropriate response in a role-playing situation. This approach was based on integrated visual and hearing stimulation. Additionally, innovative cases were added to the aforementioned steps.

Results : After learning each word by the patient, the speech-language therapist would provide the situation in which the patient was forced to use the target word. At first, the therapist produced the words several times lipreading method and then, the patient was asked to repeat them. After that, the patient produced the target words in the appropriate situations; this step could be considered as a complementary step of the whole procedure. Since the patient?right hemisphere was intact, the situation was created with gestures so that the patient could remember the words easier, and the words were taught via melodic intonation training (MIT), and was repeated by the patient with a firm and melodious tone in the practical situations. Since the patient could often produce the words initiated with "b" or "m"; the training was begun with words initiated with these phonemes. The 10 session treatment lasted a maximum of 1 hour twice a week. After treatment, the patient was able to produce sentences containing three words and even some words in the appropriate situations such as be?in (sit down), bâdâm (almond), bârân (rain), bâyad (must), be?mâr (count), and names of his family members. Furthermore, he was able to repeat some words without paraphasia, but not in the appropriate situations. After the treatment sessions, only about 10% of the patient's paraphasia was remained.

Conclusion : Rosenbek et al.'s treatment approach is a useful and efficient technique for treating paraphasia. It seems that the innovative cases might accelerate the treatment procedure.

Keywords : stroke, aphasia, paraphasia, treatment, Persian.

Count: 163

Abstract ID: 274

subject: Emotion, Motivation and Behavior: Motivation and Emotion

Presentation Type: Oral

Effect of Vitamin D Supplement on Mood Status and Inflammation in Vitamin D Deficient Type 2 Diabetic Women with Anxiety: A Randomized Clinical Trial

Submission Author: Siavash Fazelian

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Background and Aim : Vitamin D plays an important role in nervous health and depression. Vitamin D deficiency and anxiety affect diabetic status. The purpose of this study was to determine the effect of vitamin D supplementation on anxiety, depression, and inflammation in diabetic women with anxiety.

Methods : In this randomized controlled trial, totally 51 women with type 2 diabetes (T2DM) and vitamin D deficiency were randomly allocated to receive one oral pearl of 50,000 IU vitamin D3 (26 women) or a placebo (25 women) fortnightly for 16 weeks. Anthropometric indices, sun exposure, dietary intake, depression, anxiety, and stress scores and biochemical biomarkers including high sensitivity C-reactive protein (hs-CRP) and interleukin-10 (IL-10) were measured at the baseline and after 16-week supplementation.

Results : Mean ± SD age of participant was 47.43 ± 9.57 years old. Baseline values were not different between the groups. Anxiety score changes were significantly lower in vitamin D group than the controls (P = 0.001). Within group comparison indicated that depression in supplement group with lower vitamin D levels was significantly reduced. Serum hs-CRP reduced (P = 0.01), while IL-10 concentrations increased (P = 0.04) in the intervention group.

Conclusion : Vitamin D supplementation can improve mood status and anti-inflammatory biomarkers in female diabetics with anxiety and vitamin D deficiency.

Keywords : Anxiety, diabetes, inflammation, Vitamin D, women

Count: 164
Abstract ID: 86
subject: Neural Injuries and Neurodegenerative Disorders: Traumatic Brain Injury
Presentation Type: Poster

The glycyrizin neuroprotective effects on the neurological scores, blood brain barrier permeability and brain edema after severe traumatic brain injury in male rat

Submission Author: Danial Ferdossian

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Background and Aim : Traumatic brain injury (TBI) is one of the major causes of mortality and neurological disability . TBI has been classified into primary injury and secondary injury, and the latter plays a crucial role in the clinical outcome of patients with TBI. Glycyrrhizin (Gly) is a natural anti-inflammatory triterpene that largely exists in the roots and rhizomes of licorice. Recently, Gly has been found to be able to bind to HMGB1 and inhibit cytokine-like activities of HMGB1.Therefore, in this study, we investigated the effects of neuroprotective glycyrrhizin after traumatic brain injury in male rats

Methods : The male Albino wistar rats received different doses of glycyrrhizin (25, 50, 100 mg/kg, i.p.). All animals were intubated before surgery. In the TBI groups except sham and intact control groups, diffuse TBI was induced by Marmarou method using a TBI induction device. The severe TBI was induced using a weight 450 gr. The neurologic scores (VCS) and brain water content, the beam-walk –balance task (WB) and BBB integrity (Evans blue) were recorded for D1, D2 and D3 after TBI day. At the end of the third day from cisterna magna deep anaesthetized animals CSF was collected and then brain was removed and fixed in fluid nitrogen for H & D then analysis MMP-9 with Elisa assay

Results : Our results showed a significant reduction in brain water content , blood brain barrier permeability and beam balance, and a significant increase in VCS and beam walk of treatment groups as dose response manner in compared to vehicle and TBI control groups (P<0.001). Glycyrrhizin in two dose (50 and 100 mg/kg) improved neurology, biochemistry and histological disorder but in 100 mg/kg dose results were better in compare with TBI-saline control groups (P<0.001)

Conclusion : These findings showed that glycyrrhizin may implicate a critical role in promoting inflammation and aggravating damage after TBI. Post TBI administration revealed a delayed but significant improvement in histological and biochemestrical and neurological outcomes in experimental TBI. The underlying mechanism(s) was not determined and needs further investigation

Keywords : Glycyrrhizin;TBI;neuroprotection;blood brain-barrier;rat

Count: 165
Abstract ID: 584
subject: Epilepsy, Neural Excitability, Synapses, and Glia: Seizure and Epileptic Disorders
Presentation Type: Poster

Syringic acid decreased convulsion and memory impairment; and increased anti-oxidant parameters in a PTZ-induced model in rats

Submission Author: Soroor Foroozan

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Background and Aim : Seizure is an abnormal electrical discharge of a group of brain neurons that temporarily disrupts normal brain function. The brain damage caused by the seizure is a dynamic phase that involves many factors that contribute to the death of the neural cells. one of the impressive factors is oxidative stress. Antioxidant compounds have been extensively investigated as a pharmacological alternatives to prevent epileptogenesis. Syringic acid is a substance that has been mentioned in several articles and studies of its antioxidant properties. The objective of the present study was to investigate the effect of Syringic acid on memory, oxidative stress and PTZ-induced seizure in male rats.

Methods : 48 male Wistar rats were divided randomly into six groups: Control; PTZ (50 mg/kg, I.P); SA + PTZ (received SA at doses of 25, 50, 100 mg/kg respectively); PHB+PTZ (received Phenobarbital 80 mg/kg). Syringic acid or normal saline were administered 30 minutes before PTZ-convulsion induction. Immediately after PTZ-injection; latency of Convulsions, Number of Convulsions and racine-convulsion scores were evaluated in thirty minutes. Subsequently, ninety minutes after the seizure, inactive avoidance memory was evaluated. Then; rats were anesthetized, brains were removed. In the next step; MDA and GPX level were measured by ELISA.

Results : In this study, the effect of Syringic acid anticonvulsant on delayed parameters at the onset of seizure, racine-convulsion scores and Number of Convulsions was observed. In addition, Syringic acid decreased memory impairment. Biochemical observations showed that the oxidative stress were significantly improved in seizure groups under treatment with SA; which reduced lipid peroxidation and increased GPx level.

Conclusion : Based on the results obtained in this study Syringic acid can be effective in controlling Pentylenetetrazol-induced seizures. The beneficial effects of SA may be due to its antioxidant properties.

Keywords : Syringic acid; Seizure; Pentylenetetrazol; Oxidative stress; Memory; Rat.

Count: 166
Abstract ID: 179
subject: Special topics: Neurophilosophy
Presentation Type: Poster

Solanum nigrum enhances pentobarbital-induced sleeping behaviors

Submission Author: Fatemeh Forouzanfar

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Background and Aim : Sleep disorders are among the most common psychiatric and medical conditions. In the present study, the hypnotic effect of solanum nigrum was studied in mice.

Methods : The hydro-alcoholic extract (HAE) and three fractions including water fraction (WF), ethyl acetate fraction (EAF), and n-hexane fraction (NHF) of solanum nigrum were prepared to determine the hypnotic effect of this plants. The mice, were given a single dose of vehicle, diazepam, and extracts and fractions. After 30 minutes, pentobarbital was injected to induce sleep. Then, the hypnotic and toxic effects HAE and fractions were evaluated.

Results : According to results, HAE could significantly increase the duration and decreases sleep latency at doses of 50 and 100 mg/Kg. Among the three fractions, only NHF significantly increase the duration of sleep and decreased the sleep latency compared to normal saline.

Conclusion : The results suggested that solanum nigrum potentiates pentobarbital hypnosis without causing toxic effects

Keywords : Hypnotic, solanum nigrum, Pentobarbital, PC12, Sleep

Count: 167
Abstract ID: 436
subject: Pain and Sensory Systems: Other
Presentation Type: Oral

Morphine-induced inflammation affects gene expression of toll-like receptors, cytokine receptors and mitogen-activated protein kinases in the striatum of rats

Submission Author: Shima Fotouhi

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Background and Aim : Opioid tolerance and the potential for addiction is a significant problem associated with pain management. The precise underlying mechanism of morphine tolerance and prevention remain elusive. Different brain regions including midbrain, striatum and cortical areas are affected by morphine. Molecular studies have shown that during morphine tolerance, the mu-opioid receptors, glutamate receptors and some downstream signaling molecules are affected, which may partly underlie the induction of morphine tolerance. According to recent reports, immune signaling also contributes to the decreased efficacy of opioids. It has been reported that toll-like receptor 4 (TLR4)-mediated neuroinflammation in the midbrain drives tolerance, which is mediated via inflammatory cytokines like tumor necrosis factor (TNF) and interlukine-1 (IL-1). The aim of this study was to examine changes in mRNA level of TNF receptor, IL-1 receptor, TLR1 and 4, as well as downstream mitogen activated protein kinases (MAPKs) p38 and JNK3 in the striatum after induction of morphine tolerance in rats.

Methods : Male Wistar rats were used in which morphine tolerance was induced with eight days injections of morphine 10 mg/kg (i.p.) twice per day. A control group also received saline (1 ml/kg) twice daily for 8 days. On day 8, morphine-induced analgesic tolerance was assessed using a hotplate test of analgesia. For gene expression study, each rat was sacrificed, the whole brain was removed, and the striatum was dissected in both groups on day 8 of the schedule. The gene expressions of TNFR, IL-1R, TLR1, TLR4, p38 and JNK3 were examined using a quantitative RT-PCR method. The hotplate data was analyzed with a two-way repeated measure ANOVA. The real time-PCR data was analyzed using the $2-\Delta\Delta CT$ method and an independent t-test was used for the pairwise comparisons. Statistical significant level was set at $P < 0.05$.

Results : The results showed that the morphine treatments induced analgesic tolerance on day 8 of the treatments ($P < 0.001$). The results of the qRT-PCR indicated significant increases in TLR1 and TLR4 mRNA levels ($P < 0.05$) but significant decreases in the gene expression of TNFR ($P < 0.01$), IL-1R ($P < 0.01$), p38 and JNK3 MAPKs ($P < 0.01$) in the striatum of morphine-tolerant rats compared to the saline control group.

Conclusion : It can be concluded that repeated morphine treatments induce inflammation in the brain, which may alter the gene expression of TLR1, TLR4, TNFR, IL1-R, and p38 and JNK3 MAPKs in the striatum. We propose that inflammation and downstream signaling molecules may underlie, at least partly, morphine tolerance mechanisms, and it must be considered in the future efforts for controlling morphine tolerance and addiction.

Keywords : Morphine tolerance, Inflammation, Gene expression, Cytokine receptors

Count: 168
Abstract ID: 36
subject: Cognition: Cognitive Aging
Presentation Type: Poster

Long Non-coding RNA BACE1-ASMay Serve as an Alzheimer's Disease Blood-Based Biomarker

Submission Author: Seyedeh Nahid Fotuhi

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Background and Aim : The use of diagnostic agents to diagnose the onset of Alzheimer's disease (AD) and the rate of progression for appropriate treatment has become an essential requirement. The change in BACE1 transcript level is one of the most important causes of AD, which is strongly controlled by BACE1-AS. They have a significant increase in the cerebrospinal fluid of Alzheimer's patients. This increase can be used as a diagnostic factor for the detection of AD. The aim of this study was to detect the presence of BACS1-AS lncRNA in blood serum and plasma-derived exosomes of people with AD. Also, with its confirmation in serum and exosomes, the biomarker potency of BACE1-AS was estimated.

Methods : For this purpose, blood samples were collected from 45 patients and 36 non-addicted patients. Total RNA was extracted. The plasma of blood samples was isolated and plasma RNA was extracted with TRIzol extraction solution. In the second part of the work, exosomes were purified from the plasma samples using Exoqiuck extraction solution. The exosome extraction was confirmed with SEM and DLS. Then, the RNAs of exosomes were isolated. To synthesize cDNA from the RNA of plasma and exosomal samples, the TaKaRa synthesis kits were used. With existing cDNAs, the primers of the BACE1-AS gene and the U6 gene (internal control) were evaluated in terms of temperature and assure the correct functioning of the primers. BACE1-AS gene expression was evaluated quantitatively using Quantitative Real-Time and the data were analyzed with SPSS software.

Results : The presence of the BACE1-AS transcript was confirmed in plasma and exosomal specimens. BACE1-AS transcript expression level did not change between patient and control groups of plasma samples and exosomal samples extracted from human plasma. The expression level of BACE1-AS between Alzheimer's subgroup (Full-AD) and control (p <0.0001), Alzheimer subset (Full-AD) and pre-AD (p <0.0001) and Alzheimer subset (Pre-AD)) And the control group (p <0.0001) was significant. The level of BACE1-AS transcript increases between Alzheimer's sub-group (Full-AD) and control. The expression level of BACE1-AS in the Alzheimer's subgroup (Full-AD) is higher than the pre-AD pre-Alzheimer's. However, the level of expression in the pre-AD subgroup is lower than that of the control group. By analyzing BACE1-AS transcriptase in exosomal samples, it was determined that expression of this gene between Alzheimer's subgroup (Full-AD) and control, Alzheimer's subset (Full-AD) and Pre-Alzheimer's (Pre-AD) subgroups - Alzheimer's (Pre-AD) and control group are not significant. The biomarker potency of BACE1-AS in human plasma samples showed a 98% sensitivity and 100% specificity of this gene in the Alzheimer's subtype (Full-AD) and control. Also, the biomarker potency of this gene indicates a sensitivity of 99% and a 100% specificity between the Alzheimer's subtype (Full-

AD) and Alzheimer's pre-AD (Pre-AD). BACE1-AS shows the sensitivity is 68% and the specificity is 100% Between the pre-Alzheimer (pre-AD) subset and control.

Conclusion : Compared to blood-derived exosome, plasma-based BACE1-AS is a potential biomarker to differentiate Alzheimer's disease from the control, Alzheimer's from the pre-Alzheimer group and the pre-Alzheimer's group from the control.

Keywords : Alzheimer's disease ; BACE1-AS ; Biomarker ; Exosome ; Early detection

Count: 169
Abstract ID: 586
subject: Neural Injuries and Neurodegenerative Disorders: Neurotoxicity, Neuroprotection, Inflammation
Presentation Type: Poster

Sesamin reduces diabetes-associated behavioral deficits partly by inhibiting inflammation and potentiation of neurotrophic factors in diabetic rat brain

Submission Author: Shahab Ghaderi

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Background and Aim : Neuroinflammation and loss of neurotrophic support play significant roles in the pathophysiology of diabetes-associated behavioral deficits (DABD). Sesamin, a major lignan of sesame seed and its oil, exhibits anti-hyperglycemic, anti-oxidative, anti-inflammatory, and neuroprotective effects. The present study was designed to assess the hypothesis that sesamin partly by inhibiting neuroinflammation and potentiation of neurotrophic factors could attenuate DABD in streptozotocin (STZ)-induced diabetic rat model.
Methods : Sesamin (30 mg/kg/day; P.O.) or insulin (6 IU/rat/day; S.C.) were administered to rats immediately after confirmation of diabetes and were continued for eight consecutive weeks. During the eighth-week period of the study, behavioral functions of the animals were evaluated by employing standard behavioral paradigms. Moreover, inflammation status, neurotrophic factors, and histological changes were assessed in the cerebral cortex and hippocampus of the rats.
Results : The results of behavioral tests showed that STZ-induced diabetes increased anxiety- and depression-like behaviors, decreased exploratory/locomotor activities, and impaired passive avoidance learning. These DABD were associated with neuroinflammation, lack of neurotrophic support, and neuronal loss in both cerebral cortex and hippocampus of the rats. Surprisingly, chronic treatment with sesamin improved all the above-mentioned diabetes-related neurobehavioral deficits at a comparable level with insulin therapy.
Conclusion : In conclusion, the results suggest that sesamin was capable of improving DABD, which might be ascribed, at least partly, to the inhibition of neuroinflammation, reduction of blood glucose level, and potentiation of neurotrophic factors.
Keywords : Diabetes; Sesamin; Behavioral deficits; Neuroinflammation; Neurotrophic factors

Count: 170
Abstract ID: 330
subject: Epilepsy, Neural Excitability, Synapses, and Glia: Seizure and Epileptic Disorders
Presentation Type: Oral

Neuronal injury and death following focal mild brain injury due to network excitability

Submission Author: Tahereh Ghadiri

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Background and Aim : While traumatic brain injury (TBI) is a predisposing factor for development of post-traumatic epilepsy (PTE), the occurrence of seizures following brain trauma can infuriate adverse consequences of brain injury. However, the effect of seizures in epileptogenesis after mild TBI cannot yet be accurately confirmed. This study was designed to investigate the histopathological and molecular modifications induced by seizures on traumatized brain.

Methods : Using a new method, head was traumatized and seizures were evoked by sub-convulsive dose of pentylenetetrazole (PTZ) fifteen days after induction of focal mild TBI. Convulsion assessments were performed one hour after PTZ injection and was followed by histopathological and molecular evaluations.

Results : A significantly higher score and longer duration of seizure attacks as well as higher number of epileptiform discharges were observed in the TBI+PTZ group compared to sham and TBI groups. An elevated number of apoptotic cells was observed in the TBI+PTZ group compared to sham and TBI rats. Molecular investigations revealed higher levels of Bax/Bcl2 ratio, Caspase 3, and NF-κB in the TBI+PTZ group compared to the other animal groups. The value of Nrf2 did not change after mild TBI compared to sham and PTZ control groups. Occurrence of seizures after TBI, however, significantly decreased the level of Nrf2.

Conclusion : Our data indicated that seizure occurrence following mild TBI aggravates cell injury and death via activation of neuroinflammatory processes and may increase the risk of PTE. Additionally, our results suggest a potential protective role of Nrf2 after chemically evoked PTE.

Keywords : Apoptosis Convulsive Hippocampus Neuroinflammation Post-traumatic Seizure

Count: 171
Abstract ID: 56
subject: Neural Injuries and Neurodegenerative Disorders: Traumatic Brain Injury
Presentation Type: Poster

Neuroprotective effects of erythropoietin on brain edema, blood brain barrier permeability and neurological points after severe traumatic brain injury in male rats: role of AMPK

Submission Author: Erfan Ghadirzadeh

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Background and Aim : Erythropoietin (Epo) is a cytokine that exists in all vertebrate groups. The main function of Epo in the nervous system is protection against apoptosis, reducing inflammatory responses and helping to migrate, and differentiating cells to replace dead or damaged cells. Therefore, in this study, we investigated the effects of neuroprotective erythropoietin after induction of brain inflammation in rats.

Methods : The male Albino wistar rats received different doses of . Clarithromycin (2500, 5000, 10000 mg/kg, i.p.).All animals were intubated before surgery. In the TBI groups, diffuse TBI was induced by Marmarou method using a TBI induction device. The severe TBI was induced using a weight 450 gr.In the sham groups, all stages of induction of TBI were performed except dropping weight on the head. The disruption of Blood brain- barrier (BBB) was evaluated 6 h post- TBI. The neurologic score(VCS) and brain water content, the beam-walk –balance task (WB) were determined before trauma, on trauma time(D0), and 1 day(D1) and 2 DAy (D2) and 3 Day (D3) After TBI anaesthetized animals were sacrificed and the brain was removed and then analaysis mmp with Elisa assay.

Results : Our results showed that traumatic brain injury led to significant brain edema and disrupt of blood brain- barrier and neurological defect and vestibulomotor dysfunction in the rat brain and decrease mmp in serume. Erythropoietin (2500,5000mg/ kg) could attenuated brain edema, improved BBB and vestibulomotor dysfunction in compare with TBI control group (P<0.001) but in 50 dose results were better.

Conclusion : These findings showed that Erythropoietin has a prominent role in TBI outcome's and perhaps protect neurons through modulating inflammatory and antioxidant pathways

Keywords : Erythropoietin; TBI; neuroprotective; mmp; rat

Count: 172
Abstract ID: 87
subject: Cognition: Learning and Memory
Presentation Type: Poster

The Effects of endurance training on improvement of spatial memory in diabetic C57BL/6 mice induced with processed foods

Submission Author: Sarvenaz Ghaedi

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Background and Aim : Two recent decades of research on clinical data of diabetic patients and respective animal models have revealed a correlations between metabolic inefficiency at the systems level and neurocognitive impairment in the hippocampus and other regions of brain involved in learning and memory. Therefore, obesity and type 2 diabetes (T2D) are clinically considered as crucial risk factors for cognitive impairment and dementia, including vascular dementia and Alzheimer's disease. Unfortunately, inappropriate daily life in modern industrialized societies is characterized by a low rate of physical activity. consequently, extreme changes in the quality, quantity, and source of food consumed in many developed countries combined with a decrease in levels of physical activity have produced a big concern regarding to increasing number of te patients suffering from Alzheimer's disease and cognitive impairment hallmarks. In addition, this lifestyle is manifested with the consumption of highly processed foods, which has led to an increase in the prevalence of obesity, metabolic disorder and diabetes and their complications.These factors could accelerate the process of aging as well as development of other pathologic states as atherosclerosis, chronic kidney disease. However, physical activity could improve cognitive function and has been linked to the increased expression of brain-derived neurotrophic factor (BDNF). Accordingly, the aim of present study was to investigate the action of endurance training on short-term memory and neuroinflammation caused by T2D which is induced through inactivity and processed food in C57BL/6 mice.

Methods : 4-week male C57BL/6 mice were divided into 2 groups including normal (control) and processed food diets without physical activity for 16 weeks. Then, processed food fed mice with blood glucose levels ≥ 120 dl/mL were considered diabetic and divided into the processed food and processed food+exercise groups. The exercise group exercised on a motor-driven treadmill for 45 min/day, 5 days/week for 8 weeks. On the final day of exercise, the mice underwent a T-maze test and 24 h after the last exercise session, all mice were sacrificed. Hippocampus was excised and frozen for the assessment Bdnf as well as inflammatory markers (IL-6 and IL-1β).

Results : Data indicated that the mRNA level of hippocampus IL-6 and Bdnf markers increased significantly in diabetic animals while IL-1β mRNA did not change. In addition, the T-maze test scores of diabetic animals showed an improvent on memory after exercise which was correlated well with an increased Bdnf transcript levels.

Conclusion : The present study showed that endurance exercise can significantly reduce neuroinflammation in the hippocampus of diabetic animals, which can subsequently promote improvements in spatial memory presumably due to an increase in Bdnf RNA level.

Keywords : Endurance training; inflammation; memory; processed food; type 2 diabetes.

Count: 173
Abstract ID: 149
subject: Cognition: Cognitive Aging
Presentation Type: Oral

The effect of anti-saccade and prosaccade training on processing speed and spatial working memory in elderly: pilot study

Submission Author: Manochehr Ghalkhani

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Background and Aim : Cognitive functioning is a well-known indicator of maintaining independence and survival in older adults. Some cognitive abilities, such as processing speed and working memory, decline gradually over time. Many of the cognitive changes reported in healthy older adults are the result of slowed processing speed. Thus, a decline in processing speed can have implications across a variety of cognitive domains. As well as, one of the most common cognitive complaints among older adults is change in memory. Age-related memory changes may be related to slowed processing speed, reduced ability to ignore irrelevant information, and decreased use of strategies to improve learning and memory. Sensory processing is the first stage of cognitive functions and Visual information is the central core of information input to the central nervous system. Likewise, studying eye movements is an inexpensive, fast, and accessible method for studying cognitive processes. Recently, research study with different patterns of eye movement have been used to study cognitive processes. In this regard, prosaccade and anti-saccade task have been used more frequently. Brain imaging studies have shown that prosaccade and anti-saccade tasks involve the most of cortical and subcortical areas in central nervous system. Considering that in old age, most areas of the central nervous system are degraded in structure and function. It seems that prosaccade and anti-saccade training have the potential to increase function in the central nervous system. Hence, the aim of this study was to investigate the effect of anti-saccade and prosaccade training on processing speed and spatial working memory in elderly.

Methods : fifty-four elderly participated in this study and were randomly divided into three groups: prosaccade training (PT), anti-saccade training (AST) and control groups (CT). The MMSE Cognitive Status Test, Spatial working Memory Test (CORSI Test) and simple and Complex Reaction Time Test were evaluated using the Vienna Assessment System. The prosaccade and anti-saccade training groups were then trained for 3 weeks and 5 sessions of 30 minutes per week.

Results : Repeated-measures ANOVA revealed that was no significant for simple reaction time ($F_{(2, 50)}$ = 1.22, p = .158). however, there was a statistically significant effect on choice reaction time ($F_{(2, 50)}$ = 8.60, p = .001). There was a significant difference between the two-training type on spatial working memory. the anti-saccade training program had a statistically significant effect on spatial working memory and better than prosaccade training, $F_{(2, 50)}$ = 3.91, p = .026).

Conclusion : The current study found that choice reaction time and spatial working memory capacity improved by anti-saccade training. Another important finding was that prosaccade training had no significant effect on spatial working memory. The most obvious finding to emerge from the analysis is that prosaccade and anti-saccade training is beneficial for improvement reaction time and spatial working memory in elderly. An implication of this is the opportunity that Use prosaccade and anti-saccade training programs to improve cognitive ability in the elderly.

Keywords : cognition; elderly;processing speed; eye movement training

Count: 174
Abstract ID: 626
subject: Emotion, Motivation
and Behavior: Motivation and Emotion
Presentation Type: Poster

Comparison of social anxiety between psychology and foreign language students of Islamic Azad University of Karaj

Submission Author: Mahdi Gharagozloo

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Background and Aim : Social anxiety is one of the most important and dispreading anxiety disorders which have negative influence in academic and occupational relationships. Automation and increasing of personal and social anxiety lead to the problems such as social anxiety disrupts the individual activities and lead to somatic symptoms.. The goal of this research comparison of social anxiety between psychology and foreign language students of Islamic Azad University of Karaj.

Methods : This study was conducted in 200 students of psychology and foreign language of Islamic Azad University of Karaj randomly allocated to two equal groups. Jerabek questionnaire was used to collect data. Statistical analysis was performed using ANOVA.

Results : The finding showed significant difference between the students of psychology and foreign languages faculties and the rate of social anxiety of psychology students is less than foreign languages students.

Conclusion : According to the results of the study, it is concluded that the students of psychology due to their knowledge of spiritual items and also self confidence are at lower risk of social anxiety.

Keywords : psychology; foreign language; social anxiety; students

Count: 175
Abstract ID: 132
subject: Development: Neurodevelopmental Disorder (ADHD, Autism, Learning Disorders)
Presentation Type: Poster

The Relationship between Birth Weight and Birth Season with Frequency of Attention Deficit and Hyperactivity Disorder

Submission Author: Maryam Ghasemi

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Background and Aim : he aim of this study was to investigate the relationship between birth weight and birth season with frequency of attention deficit and hyperactivity disorder in primary school children.

Methods : The statistical population of this study was all children with hyperactivity/restlessness disorder aged 6-12 years old in Tehran. From this population through available & targeted sampling 96 people who were diagnosed of having ADHD through Conner's (1999) questionnaire and clinical interview were selected as sample. Their hyperactivity was measured by the Conner's (1999) questionnaire and demographic information, birth weight and the birth season was collected by a researcher-made questionnaire.

Results : Correlation analysis with SPSS23 software showed that there is a reverse and significant relationship between birth weight and hyperactivity at 0.05 and birth weight with negative coefficient can predict hyperactivity and restlessness. On the other hand, the results of the $\chi 2$ test showed no significant difference between the frequency of children with ADHD born in different seasons.

Conclusion : Therefore, it can be concluded that birth weight is related to ADHD, but the birth season is not related to this disorder.

Keywords : Attention deficit and Hyperactivity Disorder, Birth weight, Birth season

Count: 176
Abstract ID: 123
subject: Neural Injuries and Neurodegenerative Disorders: Ischemia, Stroke, and Neurovascular Disorders
Presentation Type: Poster

Apt Ischemia Imaging Modality basis on neurodegenerative disorders

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Background and Aim : Brain ischemia is a situation in which there is insufficient blood flow to the brain to meet metabolic demand. This leads to poor oxygen supply or cerebral hypoxia and thus to the death of brain tissue or cerebral infarction / ischemic stroke. It is a sub-type of stroke along with subarachnoid hemorrhage and intracerebral hemorrhage. Ischemia leads to alterations in brain metabolism, reduction in metabolic rates, and energy crisis. There are two types of ischemia: focal ischemia, which is confined to a specific region of the brain; and global ischemia, which encompasses wide areas of brain tissue. Remarkable advances in medical diagnostic imaging have been made during the past few decades. The progress of new imaging techniques and incessant developments in the spectacle of digital images have opened new prospects in the study of brain anatomy and pathology. The field of brain imaging has now become a fast-moving, demanding and exciting multidisciplinary activity. Brain imaging has been a breakthrough technology for cognitive neuroscience, building on decades of cognitive psychology, behavioral conditioning, psychophysics, and brain science. Before imaging techniques matured, our knowledge came from animal studies and the disorganized injuries sustained by human beings. But brain injuries are tremendously inaccurate, and to locate the impairment, neurologists often had to rely on postmortem examination of patients' brains—as in the case of Broca's and Wernicke's patients. The brain can often recompense for damage, so lesions alteration over time as cells die.

Methods : A hand search of various and diverse search engines including PUBMED, NCBI, GOOGLE SCHOLAR and ScienceDirect with a meta analysis and systematic process. All our findings are specified in neurodegenartive disorders and neural injuries with the emphasis on Ischemia and stroke.

Results : Since the outline of thrombolytic therapy as the basis of acute stroke treatment, neuroimaging has quickly progressed to encounter therapeutic decision making. Diffusion-weighted imaging is the most effective and accurate method for stroke detection, and, allied with perfusion-weighted imaging, affords information on the functional standing of the ischemic brain. Moreover, multimodal magnetic resonance imaging, counting magnetic resonance angiography, compromises information on stroke mechanism and pathophysiology that can direct long-term medical administration. Multimodal computed tomography is a wide-ranging, lucrative, and safe stroke imaging modality that can be effortlessly applied in the emergency ward and that offers fast and reliable information with respect to the arterial and functional status of the ischemic brain.

Conclusion : Brain ischemia is a condition in which there is insufficient blood flow to the brain to meet metabolic demand. This leads to poor oxygen supply or cerebral hypoxia and thus to the death of brain tissue or cerebral infarction / ischemic stroke. The field of brain imaging has now become a fast-moving, demanding and exciting multidisciplinary activity. Diffusion-weighted imaging is the most sensitive and

accurate method for stroke detection, and, allied with perfusion-weighted imaging, affords information on the functional standing of the ischemic brain. It can also help to classify a response to thrombolytic and neuroprotective therapies.

Keywords : Brain Injury, Imaging, Ischemia, Neuroscience

Count: 177
Abstract ID: 126
subject: Cognition: Learning and Memory
Presentation Type: Poster

EARS - Elder Audio Refined Share

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Background and Aim : The global trends in ageing populations and the higher risk of disability in older people are likely to lead to further increases in the population affected by disability. According to data from World Population Prospects: the 2015 Revision (United Nations, 2015), the number of older persons has increased substantially in recent years in most countries and regions, and that growth is projected to accelerate in the coming decades. mHealth (also written as m-health or mhealth) is an abbreviation for mobile health, a term used for the practice of medicine and public health supported by mobile devices. The term is most commonly used in reference to using mobile communication devices, such as mobile phones, tablet computers and PDAs, and wearable devices such as smart watches, for health services, information, and data collection. The mHealth field has emerged as a sub-segment of eHealth, the use of information and communication technology (ICT), such as computers, mobile phones, communications satellite, patient monitors, etc., for health services and information.

Methods : The overall method is to create a package including a wireless headphone, a tablet, a SIM card and then internet package for the elderly people. The major innovation of this technology is a connection between headphone and tablet through an incredibly easy application which the Elder can do divers actions including watching film, listening to music, Reading story in their own language, listening to vital points about health and nutrition and finally the most important part is the attendance part which the Elder people can hear and listen to relatives and families voices which can inject loveliness and kindness to elder people. The main application of headphone is a great amplifier which can amplify the voice of applications sounds and media also it can connect to the application through a Wi-Fi Dongle and can charge itself without needing charger. Moreover, we have two applications, one of them is especially for elder person who can use the application very easily with great resolution and exhibition also the other application is for relatives who can send voices, videos, films and see the Elders status from their smartphone.

Results : By using this technology and package which can help elder person to communicate easily with his or her relatives and families also can be very easily occupied through internet in variety of aspects. Diverse diseases can be prohibited such as malnutrition, cognitive problems, loneliness, substance abuse and hearing loss which are the most important problems facing with elder community can be prohibited with using this package. Next step could be field survey of elders with the help of elderly charities and organizations.

Conclusion : In conclusion, elder community challenges in conjunction with neuroscience disorders are the most important problems in health sciences. Our invention which can be a patentable product can help elder community to conquer the most important challenges and experience a comfortable life using mHealth and EARS.

Keywords : EARS, Nueroscience, Cognition, Memory, Elder, Disability

Count: 178
Abstract ID: 521
subject: Neuropsychiatry and Psychology: Addiction (Drug, Alcohol, Internet, Food) and Gambling
Presentation Type: Poster

Association of Serum PON1 as an Antioxidant and Depression and Anxiety in Methamphetamine-Dependent Patients

Submission Author: Nooshin Ghavidel

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Background and Aim : Although it has been reported that methamphetamine (MA) induces brain dysfunction, increases levels of oxidative stress and psychiatric symptoms, no study has been conducted to study their correlation in MA-dependent patients. The aim of this study was evaluating the correlation of serum levels of PON1 (an antioxidant), and depression and anxiety state of MA-dependent patient.

Methods : Nineteen active MA abusers and 18 control subjects were included in the study. Socio-demographic and Addiction Severity Index (ASI) questionnaires were used to determine medical, drug use and family/social status. Depression, anxiety and stress scale - 21 Items (DASS-21) questionnaire was used for evaluation of their depression, anxiety, and stress. Their blood samples were collected to measure the level of PON1 by the human enzyme-linked immunosorbent assay (ELISA) kit. The data were analyzed using Graph Pad PRISM software.

Results : Results showed significantly lower levels of serum PON1and higher levels of depression/anxiety in MA abusers compared to the controls. Data analysis revealed a negative correlation between PON1 level and depression/anxiety state in studied subjects.

Conclusion : Our results showed higher levels of depression/anxiety which was associated with lower levels of serum PON1 in the MA-dependent patients. Further studies need to elucidate their roles in the pathophysiology of MA addiction.

Keywords : Anxiety, Depression, Methamphetamine, PON1, Antioxidant

Count: 179
Abstract ID: 520
subject: Neuropsychiatry and Psychology: Addiction (Drug, Alcohol, Internet, Food) and Gambling
Presentation Type: Oral

Cell Death in Methamphetamine-Dependent Patients Based on Circulating Molecular Markers and Structural MRI

Submission Author: Nooshin Ghavidel

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Background and Aim : Although there are numerous animal studies showing that methamphetamine (MA) induces neuronal degeneration and cell death through all types of programmed cell death (PCD) mechanisms including apoptosis, autophagia and necroptosis, the effects of MA on human brain and the extent of induced neural degeneration is not well understood. We evaluated MA effects on active users considering various cell death mechanisms and structural MRI.

Methods : Structural images of 19 active MA-dependent patients and 18 healthy controls were acquired on a 3 T Siemens MRI scanner and Voxel-based morphometry (VBM) analysis using SPM8. Socio-demographic and Addiction Severity Index (ASI) questionnaires were used to determine medical, drug use and family/social status. Blood samples of all subjects were collected. Human enzyme-linked immunosorbent assay (ELISA) kits were applied for the measurement of circulating molecular markers including Programmed cell death markers: caspase 3 for apoptosis - Mixed Lineage Kinase-Like pseudokinase (MLKL) for necroptosis and micro tube-associated protein 1A/1B Light Chain (LC3B) for autophagy. The data were analyzed using Graph Pad PRISM software.

Results : Structural MRI analysis showed increased white matter volume in MA-dependent patients relative to the controls in right superior temporal gyrus, left temporal lobe, right frontal lobe and left medial frontal gyrus. Comparing the levels of blood markers between MA-dependent patients and controls showed no significant differences for the proteins involved in programmed cell death including Caspase 3, MLKL and LC3B. There was no significant correlation between pattern of MA use (years and amount of MA use) and Plasma molecular markers.

Conclusion : Results showed that MA induced white matter hypertrophy without activation of apoptosis, necroptosis, or autophagy mechanisms.

Keywords : Circulating markers, Structural MRI, caspase 3, MLKL, LC3B

Count: 180
Abstract ID: 546
subject: Neuropsychiatry and Psychology: Disorders of Neurobehavior
Presentation Type: Poster

The effectiveness of group cognitive-behavioral therapy on reducing anxiety in people with a history of epilepsy

Submission Author: Zeinab Gholami

Zeinab Gholami[1]

1. MA in clinical psychology

Background and Aim : The purpose of this study was to evaluate the effectiveness of group cognitive-behavioral therapy on reducing anxiety in people with a history of epilepsy.

Methods : The research design was quasi-experimental with pretest-posttest with experimental and control group. The population of this study, all patients with epilepsy aged 35 to 45 were in Qom in the second half of 2018.Thirty people were selected by convenience sampling and assigned to experimental and control groups. The instrument used was the Pennsylvania State Concern Questionnaire. Subjects in the experimental group received 6 sessions of 90 minutes of group cognitive-behavioral therapy and the control group did not receive any intervention. Data were analyzed using covariance statistical method.

Results : The mean score of concern for those with a history of epilepsy at the post-test was lower than the pre-test.

Conclusion : The results showed that the effectiveness of group cognitive-behavioral therapy had an impact on reducing anxiety in people with a history of epilepsy.

Keywords : Group cognitive-behavioral therapy, anxiety reduction, epilepsy.

Count: 181
Abstract ID: 129
subject: Cognition: Learning and Memory
Presentation Type: Poster

The interferential role of neurosteroid and GABAA receptor in interaction of CA1 and Pre-Limbic (PL) regions on spatial learning and memory of adult male rat

Submission Author: Azadeh Gholaminejad

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Background and Aim : The hippocampus and prefrontal cortex are necessary for the process of learning and memory formation in rats. The high density of the GABAA receptors in the CA1 region of the hippocampus and Pre-Limbic (PL) area of the prefrontal cortex shows that there must be a relationship between the GABAA receptors and the process of learning and memory. In addition, there are conflicting data about the effect of testosterone (agonist GABAA) on learning and memory. In the present study, we investigated the impact of testosterone and GABAA receptor present in CA1 and PL regions on spatial learning and memory in adult male rats.

Methods : 48 adult male rats were divided randomly into six groups that include sham (three groups), testosterone + bicuculline (80 μg testosterone 2 μg bicuculline /0.5 μl DMSO /side) in CA1, testosterone + bicuculline (80 μg testosterone 2 μg bicuculline /0.5 μl DMSO /side) in PL and testosterone + bicuculline (80 μg testosterone 2 μg bicuculline /0.5 μl DMSO /side) in CA1 + PL. Cannulae were bilaterally implanted into the CA1 and PL regions of the brain of rats, and then the drugs were injected before the initiation of daily training of animals in Morris water maze (MWM). Animals were trained for four consecutive days and, the probe and visible tests were performed on day five. The data were analyzed by t-test. All results are shown as mean ± S.E.M., $p < 0.05$ was considered statistically significant for all comparisons.

Results : The results showed combination of testosterone 80 ?g + bicuculline 2 ?g into the CA1, PL and CA1+PL regions increased the escape latency and caused impairment in spatial learning. Regarding the probe test, there was no significant difference in the time spent in target quadrant between the groups receiving the drugs administered into the CA1 region, but there was a marked decrease in the time spent in target quadrant between the experimental groups when the drugs were injected in the PL and CA1+PL of brain areas. There was no significant difference of performance among the groups on the visible platform day for escape latency or for traveled distance.

Conclusion : Our findings indicate that microinjection of bicuculline after testosterone in the PL and CA1+ PL regions did not alleviate the spatial learning and memory impairment induced by testosterone. Likewise, microinjection of bicuculline after testosterone in the CA1 area was not able to mitigate the spatial learning impairment induced by testosterone; however, the spatial memory was improved when

animals receiving injection of testosterone and bicuculline in the CA1 region. It seems that the PL region seemingly plays an essential role in data retrieval and spatial memory in the CA1 area of the brain.

Keywords : CA1; GABAA; Morris Water Maze; Pre-Limbic; Spatial Learning and Memory; Testosterone

Count: 182
Abstract ID: 571
subject: Neurorehabilitation and Regeneration: Other
Presentation Type: Poster

Improved visual function in a case of ultra-low vision following ischemic encephalopathy following transcranial electrical stimulation; A case study

Submission Author: Mohammad Javad Gholamzadeh

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Background and Aim : Cortical visual impairment is amongst causes of pediatric visual abnormalities predominantly resulting from hypoxic-ischemic brain injury. Such an injury results in profound visual impairments which severely impairs patients' quality of life. Given the nature of the pathology, treatments are mostly limited to rehabilitation strategies such as transcranial electrical (tES) stimulation and visual rehabilitation therapy.

Methods : Here we present an 11 year-old girl who was suffering from ultra-low vision following occipital ischemic insult and ischemic optic neuropathy since the age of 6 following a bout of prolonged seizure attack. The eye examination before treatment was within normal limits except for strabismus, visual field defect, and decreased visual acuity (VA). The basic Quantitative Electroencephalography (QEEG) with concurrent photic stimulation (1-36 Hz, white flashes at 40 cm distance) was performed before stimulation. Based on the QEEG finding, the therapy protocol was formulated. The treatment protocol comprised five sessions of transcranial Direct Current Stimulation (tDCS) in the morning followed by transcranial Alternating Current Stimulation (tACS) in the afternoon over five consecutive days. In addition, the patient was prescribed nootropics and eye supplements including sodium valproate, Modafinil, and PRESERVISION 3™. post-tES QEEG and VA were assessed to evaluate the improvement. The patient's follow-up involved the use of prescribed drugs, a self-training eye exercise named Fit Eye, and mirror-tracing task over a 60-day follow-up period. The patient completed the questionnaire of Vision-Related Quality of Life (VRQOL) before treatment and after two months follow-

up. Pre- and Post-tES current density values were analyzed using IBM SPSS statistics V.22. Wilcoxon signed rank test.

Results : VA measures for near sight were 4/20 and 8/20 for left and right eye before intervention and was measured following every session and turned to be 12/20 and 16/20 for left and right eyes at the end of the final session and the most recent follow-up session. Background EEG activity was normal in "lights on/off" states with no epileptic activity or abnormal discharges. Post-tES QEEG indicated an uptrained gamma activity in the primary visual cortex and enhanced beta-3 coherence within the visual network. VRQOL questionnaire revealed amelioration in her VRQOL two months after therapy. Current Spectral Density (CSD) map and functional connectivity pattern within the visual cortex shows that the CSD center value at Brodmann areas 17, 18, and 19 has significantly gained in both hemispheres following a course of tES. In addition, post-tES values (mean= 1.22, SD= 0.11) was significantly higher than those of the pre-tES (mean= 2.70, SD=0.05)

Conclusion : Though there is no definite cure for ischemia-induced CVI, available restoration therapies may improve visual impairments in case-by-case basis. Since alterations in cortical excitability and its neuroplasticity result in many neuropsychiatric diseases, tDCS and tACS might also be therapeutic options to potentially modify cortical activity in conditions such as cerebral stroke-related vision loss. however, Randomized sham-controlled studies would be required to support this initial step towards developing inexpensive, effective, and available rehabilitation protocols for resource limited communities.

Keywords : Cortical visual impairment, Visual rehabilitation therapy, tDCS, tACS, Visual function

Count: 183
Abstract ID: 654
subject: Neural Injuries and Neurodegenerative Disorders: Ischemia, Stroke, and Neurovascular Disorders
Presentation Type: Oral

Effect of intravenous administration of Apelin-13 on neural death and brain infarct volume extention after brain ischemia in male wistar rats

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Background and Aim : Stroke is still one of the most important causes of death in the world that until now, no effective treatment has been found for it. Neuronal death due to stroke is one of the major causes of enhancement of ischemic region and its complications. So far, several studies have investigated the effect of intraventricular injection of Apelin-13 on cerebral ischemia but this method does not have a clinical application. In this study we aimed to evaluated the effect of intravenous injection of Apelin-13 on post-stroke brain injury

Methods : forty eight adult male Wistar rats randomly divided into 6 groups: sham, ischemia, vehicle (ischemia+ PBS) and tree treatment groups (received Apelin-13 in doses of 10, 20 & 40μgr/kg intravenously 5 minute before reperfusion) . Brain ischemia was induced by middle cerebral artery occlusion (MCAO) for 60 minutes. stroke volume and neural death were evaluated in term by image J software and tissl staining twenty four after brain stroke induction.

Results : The results of this study showed that neural death in the ischemic groups were significantly upper than the sham group (p<0.000). Treatment by apelin-13 significantly reduce neural death in all treatment groups in comparison with ischemic group (p<0.001). Also apelin-13 in doses of 20 and 40 ?gr/kg could significantly decrease infarct volume in comparison with ischemic group (p<0.01).

Conclusion : Intravenous administration of apelin-13 could decrease neural death and infarct volume that resulted from brain ischemia in male wistar rats. However, further studies are needed to understand the mechanisms underlying Apelin-13 administration intravenously affects on brain ischemia and also to identify its possible complications.

Keywords : Intravenous, Apelin-13, Brain infarct volume, Neural death

Count: 184
Abstract ID: 368
subject: Neural Injuries and Neurodegenerative Disorders: Dementia
Presentation Type: Poster

The effects of Juniperus excelsa's hydroalcoholic extract on passive avoidance learning and memory in male wistar rats

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Background and Aim : Alzheimer's disease (AD) is a progressive multifarious neurodegenerative disorder, the most common form of dementia which is associated with memory and learning disorders. Effects of herbal medicines on improvement of AD symptoms has attracted many researchers. In the present study, due to the anti-inflammatory and antioxidant properties of juniperus excelsa (JE), the effect of JE extract on the improvement of passive avoidance memory was investigated.

Methods : 48 male wistar rast (200-250 gr) were used and randomly divided into six groups: control (without injection), sham (ICV injection of normal saline), beta–amyloid group (ICV injection of beta-amyloid peptide), test group (3 groups which were gavaged by JE hydroalcoholic extract in three doses of 50-100-200 mg/kg, 6 days before and 20 days after ICV injection of beta amyloid). As mentioned AD was induced by ICV injection of beta-amyloid peptide (1-40). The memory was evaluated by passive avoidance test, using Shuttle box. The step-through latency (STL) for entering the dark compartment and time spent in dark compartment (TDC) were measured.

Results : The findings showed that various doses of JE extract has reduced TDC ($p<0.001$) and STL has increased ($p<0.05$) in test groups. Maximum effect on memory was shown in 200?mg/kg dose of extract.

Conclusion : JE extract has enhancing and improving effects on Passive Avoidance Learning and Memory, due to its inflammatory and antioxidant properties.

Keywords : Alzheimer's Disease; Beta Amyloid; Passive Avoidance Learning and Memory; Juniperus excelsa;

Count: 185
Abstract ID: 349
subject: Neural Injuries and Neurodegenerative Disorders: Other
Presentation Type: Poster

Intracranial physiologic calcification investigated by computer tomography (CT) scan in different age groups

Submission Author: Mehrdad Ghorbanlou

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Background and Aim : intracranial physiologic calcifications have no demonstrable pathological cause. These calcifications mostly appear in certain regions such as pineal gland, habenula, choroid plexus, falx cerebri, tentorium cerebelli, petroclinoid ligament, and basal ganglia. This study was conducted to elucidate the pattern of physiologic calcification in different age groups.

Methods : in this cross sectional study, non-contrast enhanced brain CT scans of 216 subjects in imaging center of Shariati hospital, Mahdasht, Alborz were examined retrospectively. Nine age groups, each group containing 24 subjects, in a study period of one year (2017-2018) were included: 1 (1-9 years old (YO)), 2 (10-19 YO), 3 (20-29 YO), 4 (30-39 YO), 5 (40-49 YO), 6 (50-59 YO), 7 (60-69 YO), 8 (70-79 YO), 9 (80-89 YO). Subjects were scanned by CT scanner, Hitachi Supria 16/32. Every subject was investigated for physiologic calcification in pineal gland, habenula, choroid plexus, falx cerebri, tentorium cerebelli, petroclinoid ligament, and basal ganglia.

Results : one hundred ninety four subjects had physiologic calcification (89.81%). Calcification distribution included pineal (75%), habenula (36.36%), pineohabenula (15%), right lateral ventricle choroid plexus (67.72%), left lateral ventricle choroid plexus (62.72%), falx cerebri (26.81%), petroclinoid ligament (13.18%), tentorium cerebelli (6.81%), third ventricle choroid plexus (0.9%), fourth ventricle choroid plexus (2.72%), and basal ganglia (0.9%). In age groups of 1, 2 and 3, calcification rate (having at least one area of calcification) was 25%, 87.5%, and 95.83%, respectively. In other age groups, all the subjects had at least one area of calcification which means calcification rate of 100%.

Conclusion : intracranial physiologic calcification distribution in different age groups provide a basic data about this common matter and as a clinical perspective a physician can distinguish between a common area of calcification and a pathologic calcification in a specific age group.

Keywords : intracranial calcification; brain; computed tomography; prevalence

Count: 186
Abstract ID: 257
subject: Neurorehabilitation and Regeneration: Psycho-cognitive Rehabilitation
Presentation Type: Poster

The Effectiveness of Cognitive Rehabilitation with RehaCom Software on divided and sustained attention in Traumatic Brain Injury (TBI)

Submission Author: Rana Ghorbanzade

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3. Neurosurgeon, Assistant Professor, Tabriz University of Medical Sciences, Tabriz, Iran

Background and Aim : Traumatic brain injury (TBI) is one of the most common causes of disability, especially cognitive problems and mortality in the world. The purpose of this study was to investigate the effectiveness of cognitive rehabilitation with RehaCom software on divided and sustained attention in TBI.

Methods : 40 patients with TBI from Tabriz medical hospitals were selected through purposive sampling based on inclusion and exclusion criteria. They were randomly assigned to two experimental and control groups. Research tools included Racham Cognitive Rehabilitation Software and Continuous Performance Test (CPT-II). In order to perform the intervention, the rehabilitation software was given to the experimental group in 8 weeks and 3 sessions per week for 30 minutes.

Results : Multivariate Analysis of Covariance (MANCOVA) was used to analyze the data. The results showed that cognitive rehabilitation with RehaCom software significantly improved divided attention ($p < 0.01$) and sustained attention ($p < 0.05$) in the experimental group.

Conclusion : The results of this study showed that cognitive rehabilitation with RehaCom software improves the attention of patients with TBI and can be used as a complementary treatment method.

Keywords : Cognitive Rehabilitation, divided Attention, sustained Attention Traumatic Brain Injury (TBI)

Count: 187
Abstract ID: 318
subject: Emotion, Motivation and Behavior: Behavioral Pharmacology
Presentation Type: Poster

Pharmacological evidence for the involvement of the opioid system in the antidepressant-like effect of simvastatin in mice: Without tolerance and withdrawal syndrome

Submission Author: Behnam Ghorbanzadeh

Behnam Ghorbanzadeh[1]

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Background and Aim : Statins, 3-hydroxy-3-methylglutaryl co-enzyme A (HMG-CoA) reductase inhibitors, have been shown to be effective in reducing depression in animal models. The present study aimed to investigate the potential antidepressant-like activity of simvastatin and the possible involvement of opioid systems in the mouse forced swimming test (FST).

Methods : After assessment of locomotor behavior in the open-field test (OFT), FST was applied for evaluation of depressive behavior in mice. Simvastatin (20, 30, and 40 mg/kg, i.p.) or morphine (0.01, 0.1, 1 and 10 mg/kg, i.p.) were administrated 30 min before the OFT or FST.

Results : Results showed that simvastatin produced antidepressant effect in a dose-dependent manner. The effect of simvastatin (30 mg/kg) was prevented by the pre-treatment of mice with naloxone (1 mg/kg, i.p., a nonselective opioid receptor antagonist). In addition, a sub-effective dose of simvastatin (20 mg/kg) produced a synergistic antidepressant-like effect in the FST with a sub-effective dose of morphine (0.1 mg/kg) that it was reversed by naloxone. Moreover, in contrast to morphine, treatment with simvastatin for six days induced neither tolerance to the antidepressant-like effect nor withdrawal signs.

Conclusion : In conclusion, these findings demonstrated that simvastatin elicited antidepressant-like action possibly through the stimulation of opioidergic pathways, without inducing tolerance and withdrawal signs.

Keywords : SimvastatinAntidepressant-likeOpioid systemToleranceWithdrawal signsMice

Count: 188
Abstract ID: 55
subject: Pain and Sensory Systems: Tactile, Somatosensation and Pain Syndromes
Presentation Type: Poster

Comparative study on anti-inflammatory effect of aqueous extract of Cuminum cyminum L. and combination of Cuminum aqueous extract with gold and silver nanoparticles in formalin inflammatory model in ma

Submission Author: Sahar Golabi

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Background and Aim :): Inflammation is the body's initial response to injuries or infections. Formalin test is a valuable method to assess inflammatory pains. Nowadays, recognition and development of anti-inflammatory drugs from plant origin have drawn a great attention. Cuminum cyminum L. has anti-inflammatory potentials. Nanotechnology has been widely used in different medical fields. One of them, is their application in inflammatory situations. The present study was carried out to examine and compare the anti-inflammatory effect of aqueous extract of Cuminum cyminum L. and mixture of aqueous extract of Cuminum with gold and silver nanoparticles in a formalin inflammatory model.

Methods : this study was conducted on a total of 60 rats. 200, 500, and 1000 mg/kg of aqueous extract of Cumin, 200, 500, and 1000 mg/kg mixture of Cumin aqueous extract with gold/ Silver nanoparticles were prepared and were prescribed intraperitoneally. Formalin was injected in rat paw to induce inflammation and the produced inflammation was measured using Yoon method. Data analysis was performed using one-way ANOVA test.

Results : Injection of Cumin aqueous extract at three different concentrations was shown to have no significant acute and chronic anti-inflammatory effect. injection of mixture of Cumin aqueous extract with AuNPs was shown to significantly reduce acute inflammation. Also, injection of mixture of 200 and 500mg Cumin aqueous extract with AgNPs significantly reduced acute and chronic inflammation.

Conclusion : results of the present study suggest that mixture of Cumin aqueous extract with AgNPs or AuNPs have anti-inflammatory effect against acute and chronic inflammation.

Keywords : acute inflammation, formalin, chronic inflammation, Cuminum, gold nanoparticles, silver nanoparticles, aqueous extract

Count: 189
Abstract ID: 322
subject: Emotion, Motivation and Behavior: Stress and the Brain (Stress-modulated Pathways, Stress and Cognition, Stress Related Disorders)
Presentation Type: Oral

Therapeutic Effects of Melatonin-Treated Bone Marrow Mesenchymal Stem Cells (BMSC) in a Rat Model of Alzheimer's Disease

Submission Author: Zoleikha Golipoor

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Background and Aim : Mesenchymal stem cells based therapy has extensive attraction for Alzheimer's disease (AD). However, low survival rate of MSCs after transplantation is a huge challenging. Objective: The current study aimed to improve Bone Marrow MSCs (BM-MSCs)-based therapy by their pre-treatment with melatonin (MT) 'a well-known antioxidant' in an animal model of AD.

Methods : In this study, BMSCs from the rat tibia and femur bones was separate, the cells were pretreated with 5μM of MT for 24 hours. Forty male Wistar rats were randomly allocated to control, sham, amyloid-beta (Aβ) peptide BMSCs and MT-pretreated BMSCs groups. The novel object recognition, passive avoidance test, Morris water maze and open field test were performed two months following the cell transplantation. The rats were sacrificed 69 days following cell therapy. The brain tissues were removed for histopathological analysis and also immunohistochemistry was performed for GFAP, Beta tubulin and iba1 proteins.

Results : It has been revealed that both BMSCs and MT-BMSCs migrated to brain tissues after intravenous transplantation. However, MT-BMSCs significantly improved learning, memory and cognition compared with BMSCs (P<0.05). Furthermore, increase GFAP and Beta tubulin and reduction of microglial cells were significantly increased in the BMSCs compared with MT-BMSCs.

Conclusion : Although stem cell therapy has been introduced as a promising strategy in neurodegenerative diseases, however, its therapeutic properties are limited. It is suggested that pretreatment of MSCs with melatonin partly would increase the cells efficiency and consequently could decrease AD complication including memory and cognition.

Keywords : Alzheimer's disease, β-amyloid, Stem Cells, Melatonin

Count: 190
Abstract ID: 221
subject: Computational Neuroscience: Network Models
Presentation Type: Poster

Finding hubs in brain networks

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1. Master of computer science

Background and Aim : Brain networks could be defined as graphs which contain a set of nodes (neural components) and the edges (the connections between them). Among the many nodes form a network, some play a crucial role in mediating a vast number of network connections (called hubs). Hubs are central in network organization and are often identified by quantities known as centrality metrics. These nodes should have strong connections with each other to control the information flow. In this abstract, we investigate the nodes in form of a set and decide whether a set of nodes can be hub or not by using genetic algorithm.

Methods : The parts of a genetics algorithm, are the population and function for life. The length of chromosomes is equal to the number of the nodes in the network. Being 0 shows that its corresponding node isn't a possible hub and being 1 shows that it is a possible hub. In fact, in this method, each chromosome presents a possible hub. The aim is to find a chromosome that its proposed nodes have the most and strongest connections with each other. The cost function being used in this analysis sum all the edges between the considered proposed nodes and specify the result as the value of that chromosome. The chromosome which has the most value in the last generation, is the answer to the problem. Two sets of data have been tested by this algorithm Cat Cortex (is weighted and consists of 52 zones and has 4 main clusters) and Macaque Cortex (consists of 47 zones and is non-weighted and has 3 main clusters).

Results : We executed our algorithm on Cat network for 100 times. The highest gained value was 73 so that the related hub set was repeated for 7 times. The hubs being found, cover all the clusters. For all the solutions to the problem, Epp zone was recognized as hub, because this is the only node of the Auditory cluster that has connection with the nodes from other zones and the nodes like DLS were not found in the problem's solutions since they were not connected to other clusters and such nodes are not our algorithm's favorite nodes. We executed this algorithm on Macaque network for 100 times and gained the responses' frequency. According to the results obtained from this DB, we sometimes observed that no Somatosensory was found, because in comparison to other clusters, this cluster is too small and its nodes don't have connections that much.

Conclusion : The more the difference rate in clusters' size is, the more possibility to bypass the clusters with small size, because the big clusters have stronger nodes that causes the hub being chosen from them. The nodes with few cluster interconnections are not a good candidate for the hub and also the nodes with few cluster interconnections are mostly ignored. A convergence towards the optimized response is being observed throughout the algorithm and the similarity among the nodes being found for 100 times of repeating the algorithm was a lot.

Keywords : Brain network; Hub; Genetic algorithm; Cat cortex; Macaque cortex

Count: 191
Abstract ID: 575
subject: Novel and Cutting-Edge Technologies: Other
Presentation Type: Poster

Safety and Possible Outcome of the Combination of Autologous Schwann Cell and Bone-Marrow-Derived Mesenchymal Stem Cell Transplantation in Patients with Acute and Subacute Spinal Cord Injury

Submission Author: Maryam Golmohammadi

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Background and Aim : Spinal cord injury (SCI) is a devastating medical condition and most of SCI patients suffer from profound disability and its related complications. Numerous studies in animal models of SCI and human patients have demonstrated that cellular transplantations for treatment of SCI might provide a source of neural cells and have neuroprotective and immunomodulatory effects after injury. mesenchymal stem cells (MSC) and Schwann cells (SC) have better safety and better ethical profile. Obviously no single factor accounts for the lack of axonal regeneration after SCI. Successful functional recovery in patients suffering from SCI will most likely rely on a combinatorial therapeutic strategy.

Methods : We assessed the safety and feasibility of a bone marrow mesenchymal stromal cell and Schwann cell combination for the treatment of patients with acute and subacute spinal cord injury.Six patients had complete SCI (American Spinal Injury Association Impairment Scale (AIS) grade A) and one had incomplete grade B. The patients received this autologous combination of cells into the spinal cord.We performed electromyography (EMG) and nerve conduction velocity (NCV), urodynamic study (UDS) and magnetic resonance imaging (MRI) preoperatively for all patients. In order to documenting the changes, EMG-NCV (for movement changes), UDS (for changes in bladder function or urinary sensation) and MRI (for the patients who showed significant improvement in their neurological examination) was carried out.

Results : Improvement of balance in sitting position was expressed by six out of seven patients. Before transplantation, all patients had no sphincter sensation or urination, however, at the end of the study, sense of fecal and urinary excretion was reported in the first three patients Except for patient 1, UDS and EMG-NCV showed no change in the other patients (data not shown) and none of the them were under the control of the sphincter.

Conclusion : The present study indicated that three patients at acute and subacute stage showed improvement in neurological function after autologous schwann cell and bone marrow derived mesenchymal stem cell transplantation and in remaining patients, no progress was found in sensory or motor scores according to ISNCSCI. Almost half of patients reported sense of fecal and urinary excretion after transplantation that was not reported in previous studies.There were no systemic complications such

as fever, anaphylactic shock, hypersensitivities, rush or inflammation after autologous transplantation. Also radiological pictures indicated no neoplastic overgrowth, syringomyelia, or psuedomeningocele which documents the safety of the use of this cell combination therapy.It appears that the use of this combination of cells is safe for clinical application to spinal cord regeneration.

Keywords : bone marrow; cell transplantation; combination therapy; schwann cell; mesenchymal stem cell; spinal cord repair

Count: 192
Abstract ID: 339
subject: Novel and Cutting-Edge Technologies: Molecular, Biochemical, and Genetic Techniques & Gene . Therapy
Presentation Type: Oral

Safety and Feasibility Assessment of Bone Marrow Mesenchymal Stem Cells Transplantation Containing Suicidal Gene in Combination with Pro-drug to Treatment of Patients with Glioblastoma Multiform

Submission Author: Maryam Golmohammadi

Maryam Golmohammadi[1], Mohammadhosein Akhlaghpasand[2], Gelareh Shokri[3], Ehsan Arefian[4], Maryam Oraee-Yazdani[5], Alireza Zali[6], Saeed Oraee-Yazdani[7]

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Background and Aim : Glioblastoma Multiform (GBM) as a malignant brain tumor have poor prognosis despite of the current therapies. However, suicide gene therapy is one of the most widespread cancer gene therapies, which requires mRNA encoding a pro-drug activating enzyme (suicide protein) transduced into the vector and then injects into the tumor tissue that leads to tumor suppression. In addition to viral vectors, the remarkable Mesenchymal Stem Cells (MSC) tropism to inflammatory sites and micro-environment of the tumor made these cells very attractive for targeting of genes to tumor sites. So we assessed the safety and feasibility of using MSCs bring suicidal gene to the tumor site in combination with pro-drug to treatment of patients with GBM.

Methods : For this clinical trial, we recruited five patients with newly diagnosed GBM. They underwent gross total resection of tumor and adjuvant radiotherapy. All patients had Karnofsky Performance Score (KPS) more than 70 at the beginning of the study. During chemotherapy course, injection of autologous MSCs transduced with lentivirus containing thymidine kinase was performed followed by administration of ganciclovir for 2 weeks. Then they were being followed-up for any side effects due to injection besides regular examination and imaging for recurrence. Before injection, the pathologic specimens had been assessed by two pathologists for diagnosis confirmation in addition to determination of Isocitrate Dehydrogenase 1 (IDH1) and Isocitrate Dehydrogenase 2 (IDH2) mutation and promotor methylation status of O6-Methylguanine-DNA Methyltransferase (MGMT).

Results : Regular general physical examination and laboratory analysis after injection did not reveal any side effects. Only one patient had fever as an adverse effect of ganciclovir that was self-limited. The first patient had radiological recurrence after 25 months and the second one experienced that after 28 months. In the immunohistological study, these two patients have wild type of IDH1 & IDH2. Promotor of MGMT was methylated in patient one and un-methylated in patient two. Both recurrences were occurred localized to previous site without more extension. Total resection was performed for them without producing new deficit. During these years and after second surgery, the patients had KPS above 70. In three other patients, these processes had been performed. Besides no detection of adverse effect due to transplantation, there is no evidence of clinical or radiological recurrence after one year.

Conclusion : In our research, we applied bone marrow MSC transplantation containing suicidal gene in combination with pro-drug to treatment of patients with GBM. With regard of tropism and anti-inflammatory effects of MSCs, they could be as effective vehicle of suicidal genes. It seems that this transplantation would be safe and feasible. Although preliminary results are promising, we need more patients and long term follow up to assess the effectiveness of this method.

Keywords : Glioblastoma Multiform; Suicidal Genes; Mesenchymal Stem Cells; Gene Therapy.

Count: 193
Abstract ID: 111
subject: Cognition: Neurolinguistics
Presentation Type: Poster

The functional neuroanatomy in social behaviour in autistic disorder

Submission Author: Azin Golmoradi zadeh

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2. MCN student of speech therapy at jondi shapour university of medical science

Background and Aim : The neuropathological basis of autism has not been determined, and much of the work has focused on classic Kanner-type autism. However, a number of anatomical substrates have been suggested. Damasio and Maurer proposed that autism is due to dysfunction of mesolimbic (dopaminergic) brain areas (ventromedial prefrontal cortex, medial temporal lobe, striatum and limbic thalamus) because damage to these brain regions can cause features of autism (impaired social and emotional functioning, stereotyped behaviours, mannerisms and obsessionality) (Damasio and Maurer, 1978). This hypothesis is supported by studies which have reported that (i) in animals, social deficits and stereotypical behaviour are associated with damage to the medial temporal lobe in infancy (Bachevalier, 1994); (ii) in humans, autistic-type patterns of behaviour are associated with abnormalities in the temporal lobe caused by other neurodevelopmental disorders (e.g. tuberous sclerosis) (Bolton and Griffiths, 1997); and (iii) individuals with autism are impaired on `frontal' executive tasks (Ozonoff et al., 1991; Hughes et al., 1994). Non-limbic areas such as the parietal lobe have also been suggested as important in aetiology because the inattention of children with autism to salient social cues resembles inattention and neglect following parietal lobe damage (Bryson et al., 1990

Methods : We studied nine high-functioning adult male volunteers [mean age ± standard deviation, 37 ± 7 years; FSIQ (full-scale IQ) 102 ± 15] clinically diagnosed, using ICD-10, as having Asperger syndrome (seven subjects) or autism (two subjects) (Table 1). Diagnosis was confirmed where possible with the Autism Diagnostic Interview (Lord et al., 1994), a structured interview of parental informants to aid the diagnosis of autism. We also studied nine right-handed adult male controls (27 ± 7 years; FSIQ 116 ± 10). Intelligence was measured using the Wechsler Adult Intelligence Scale—Revised (WAIS-R) (Wechsler, 1981), and subjects with autistic disorder were tested outside the scanner on their ability to recognize faces, using the Warrington recognition memory task for faces (Warrington, 1984)

Results : Subjects with autistic disorder and controls were debriefed after scanning, and both groups reported no difficulties in viewing or judging the face stimuli. However, although the subjects with autistic disorder performed well above chance, performance data showed that they made more errors than controls during the explicit processing of facial expressions

Conclusion : Although high-functioning individuals with autistic disorder (i.e. autism and Asperger syndrome) are of normal intelligence, they have life-long abnormalities in social communication and emotional behaviour. However, the biological basis of social difficulties in autism is poorly understood. Facial expressions help shape behaviour, and we investigated if high-functioning people with autistic disorder show neurobiological differences from controls when processing emotional facial expressions

Keywords : neurobiological ; behaviour ; autistic

Count: 194
Abstract ID: 58
subject: Neural Injuries and Neurodegenerative Disorders: Neurodegenerative Disorders
Presentation Type: Poster

A novel pathogenic Tau translocator from cytoplasm into the nucleus upon Neurodegeneration

Submission Author: Ghazaleh Goudarzi

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Background and Aim : Tau hyperphosphorylation is an early event in several neurodegenerative diseases, known as tauopathies. However, the actual mechanism of Tau toxicity in neurons has remained elusive thus far. We have hypothesized that neurotoxic Cis p-Tau initially interacts with specific translocator (importin), then moves into the nucleus, resulting in cell death. Thus, we hypothesised that importin suppression would prevent the cell death.

Methods : To examine how Cis p-Tau is being imported into the nucleus, we initially determined the translocation time-frames using immunoflourescent staining on pri¬mary cultured neurons. Then, we blocked the Importin using 5μM Ivermectin, as Importin inhibitor, and examined cell viabilities.

Results : We found that pathogenic Cis p-Tau bound to Importin, and then moved into the nucleus in a ti¬me-dependent manner. Notably, Importin suppression would rescue neurodegeneration in those stressed out neurons.

Conclusion : We have shown that Cis p-Tau plays its neurotoxcic roles through interacting with Importin. Taking these together, we herein describe tauopathies molecular mechanism and a novel therapeutic target for suppressing neuronal cell death upon neurodegenerative disorders such as: Alzheimer's disease.

Keywords : Cis p-Tau, Tauopathy, Neurodegeneration, Importin

Count: 195
Abstract ID: 323
subject: Neurorehabilitation and Regeneration: Medication and Stem Cell Therapy
Presentation Type: Poster

Differentiation of human breast-milk stem cells to neural stem cells

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Background and Aim : There is a diverse population of stem cells in human breast milk that can be employed for therapeutic purposes as a non-invasive source of cells. The current study mainly was aimed to differentiate the breast milk stem cells (BMSCs) toward neural stem cells.

Methods : the BMDSC were isolated from human breast milk the days1 to 4 after parturition and cultured in Dulbecco's modified Eagle's medium high glucose containing 20% knockout serum replacement (KOSR). Then, the cells were exposed to culture medium include 3% B27 and 2% N2, fibroblast growth factor (bFGF) 10 ng/mL, and endothelial growth factor (EGF) 20 ng/mL. The suspend neurospheres were incubated in differentiation medium containing 5% fetal bovine serum without any growth factors. Seven days after differentiation, express of glial fibrillary acidic protein (GFAP), microtubule associated protein (Map2), β-tubulin III and Neun were evaluated using immunofluorescent.

Results : The results showed BMSCs have the ability to be differentiated into neural cell lineages. According to the immunofluorescent analysis, the differentiated cells expressed neural markers as follow: GFAP 36.67%± 2.1, Map2 26%± 3, ??-tubulin III 19.77± 3.3 and Neun 24.33± 3.4.

Conclusion : Based on the current study results, breast milk stem cells, as a novel source of stem cell can use for therapy in the neurodegenerative disease.

Keywords : breast milk stem cell,differentiation, neural stem cell

8th Basic and Clinical Neuroscience Congress
December 18-20, 2019   Razi Hall, Tehran, Iran

Count: 196
Abstract ID: 632
subject: Cognition: Other
Presentation Type: Poster

Modeling human cognitive impairment candidate genes in Drosophila Melanogaster: report on a systematic study on locomotor behavior

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Background and Aim : Understanding function of the brain and molecular pathways underlying complex behavior of cognitive function is a major challenge. With the advent of next-generation sequencing techniques, the number of candidate genes for cognitive disorders has increased dramatically; but the role of their related proteins in neuronal network remains largely unknown. In the context of a systematic study to investigate novel intellectual disability (ID) candidate genes, a series of functional and behavioral experiments in a well-known model organism, Drosophila Melanogaster, has been done. Many basic biological, physiological, and neurological properties are conserved between humans and Drosophila Melanogaster, and nearly 75% of human disease-causing genes are believed to have a functional homolog in this tiny organism.

Methods : Locomotion, is a complex behavior, which is required for localization of food and mates, and response to stress, and is, therefore, an integral component of most animal behaviors. Basic biological processes, including development of nervous system, are evolutionarily conserved between flies and mammals. Thus, orthologues of the genes affecting Drosophila locomotion may well be relevant in humans. To screen the effect of knock down of ID candidate genes by a UAS-GAL4 system, quantitative climbing assay has been done in Drosophila Melanogaster.

Results : We found that flies have a progressive locomotor defect following knocking down of orthologous of RHBDF1 (rhomboid 5 homolog 1), and Cytochrome C Oxidase Subunit 6C (COX6C). We also observed that knockdown of COX6C decreased life span and increased fly mortality.

Conclusion : These results confirmed the role of RHBDF1 and COX6C genes in animal behavior and cognition. Further investigations into the role of several other novel ID candidate genes are ongoing.

Keywords : Drosophila melanogaster; functional study, locomotion assay

Count: 197
Abstract ID: 66
subject: Cognition: Learning and Memory
Presentation Type: Poster

Effects of chronic sodium hydrosulfide treatment on passive avoidance learning and memory oxidative stress in rats fed high fat diet

Submission Author: Elahe Habibitabar

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Background and Aim : Cognitive function is impaired by increased consumption of high-fat diet (HFD). Feeding an HFD can alter hydrogen sulfide (H2S) metabolism. Given the antioxidant effects of H2S and the fact that high fat intake is associated with an increase in oxidative stress, we hypothesized that H2S will act as a neuroprotective factor.

Methods : Following 11 weeks of HFD regimes in Wistar rats, passive avoidance learning (PAL) task was used to evaluate the learning and memory in rats fed a high-fat diet. Daily intraperitoneal injection of sodium hydrosulfide (NaHS), an H2S donor was done during the dietary regimen.

Results : We have shown here that HFD consumption is associated with an increase in malondialdehyde (MDA) and total oxidant status (TOS), and a decrease in total antioxidant capacity (TAC) (P?

Conclusion : In conclusion, these are the first data which suggest that exogenous H2S can reduce oxidative stress and improve memory retention in rats fed an HFD.

Keywords : High fat diet, Hydrogen sulfide, Learning and memory, Oxidative stress, Wistar rats

Count: 198
Abstract ID: 469
subject: Computational Neuroscience: Network Models
Presentation Type: Poster

A network-based approach to discovering functional connectivity in neuronal data

Submission Author: Mohsen Hadianpour

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Background and Aim : Fast development of recording technology provides a great chance of access to large amount of data for neuroscientist. Recording simultaneous individual neurons of large group in different part of the brain necessitates variety of quantitative techniques in order to analyses spiking activity and methods for addressing functional activity across neuronal population.

Methods : In this work we aim to model the functional connectivity with statistical based modeling. We consider a special multivariate Point Processes, Hawkes process on a Bayesian framework. The advantages of our work are, but not limited to, the following: a) estimation causality with directed property of the fitted graph and b) estimation the strength of the connection with weighted property of the fitted graph.

Results : We applied our method on the recorded neurons from FEF area of the macaque brain in a memory guided saccade task. By estimating our network based on spike counts in the three epochs: visual, memory and saccade, we evaluated functional connectivity graph and extracted network measures such as average shortest path, clustering coefficient, betweenness centrality and small world network (SWN) property on each epoch.

Conclusion : By comparing this network measures across epochs, we monitored the dynamic of the functional connectivity within cognitive states. Furthermore, we investigated the hypothesis that neural networks are arranged in functional groups, recalling the concept of cell assembly.

Keywords : Point Processes, Hawkes process, Bayesian framework, average shortest path, clustering coefficient

Count: 199
Abstract ID: 284
subject: Computational Neuroscience: Modeling and Simulation
Presentation Type: Poster

Molecular docking study of the carbamazepine and lamotrigine interaction with peroxidase

Submission Author: Najmeh Hadizadeh Shirazi

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Background and Aim : One of the side effects of antiepileptic drugs is the increased production of reactive species in patients. Due to the involvement of the peroxidase enzyme in reducing oxidative stress, this study aimed to investigate the molecular interaction of carbamazepine and lamotrigine with this enzyme by molecular docking technique.

Methods : The crystal structure of HRP was obtained from Protein Data Bank (Id:1hch) and the 3D coordination of drugs were obtained from Pub Chem. Molecular docking simulations were performed using auto dock 4.0 software. Lamarckian genetic algorithm with GA population size 100 was selected. The lowest energy conformation with the largest cluster of every docking simulation were extracted and analyzed.

Results : Autodock Vina results showed that both carbamazepine and lamotrigine were located between helix F and B (distal domain). However, furder studies by Autodock 4.0 indicated that carbamazepine preferentially binds to helix F (amino acids 163-170) it has a weaker binding to helix B. Whereas lamotrigine makes better connections with Arg38 and His42 of helix B than helix F.The results suggested that both drugs could interact with peroxidase using hydrophobic and interactions and hydrogen bonds.

Conclusion : Both drugs bind to the distal domains of the enzyme. Since helix B is the catalytic subdomain of peroxidase, it seems that Lamotrigine further altered the structure of the active site than carbamazepine.

Keywords : carbamazepine, lamotrigine, peroxidase, molecular docking

Count: 200
Abstract ID: 153
subject: Cognition: Learning and Memory
Presentation Type: Poster

Prediction of seizure incidence probability in PTZ model of kindling through spatial learning ability in male and female rats

Submission Author: Narges sadat Haeri

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Background and Aim : Epilepsy is a common neurological disease characterized by periodic seizures. Cognitive deficits and impairments in learning and memory are also associated with epilepsy. Neuronal changes and synaptic modifications in kindling model of epilepsy are similar to those occur during the learning procedure and memory formation.

Methods : Herein we investigated whether seizure susceptibility in pentylenetetrazol (PTZ) model of kindling is predictable based on the learning ability in the Morris water maze (MWM) task in male and female rats. Allocentric learning was tested using MWM in present of light while egocentric learning was evaluated by MWM in dark room.

Results : The results indicated no significant differences in allocentric learning abilities between male and female rats. However, male rats were able to memorize the location of the platform more effectively compared to females in egocentric test. In addition, a statistically significant negative correlation between learning abilities (working memory) and seizure susceptibility in male rats was found while this correlation was positive in female rats. On the other hand, although there was no significant correlation between retrieval (reference memory) of spatial memories and seizure parameters in male rats, female rats showed a significant negative correlation.

Conclusion : These findings may provide some evidences for prediction of seizure susceptibility according to learning ability and memory retention.

Keywords : Allocentric learning; Egocentric learning; Epilepsy; Retrieval of memory; Rat; Spatial memory

Count: 201
Abstract ID: 10
subject: Epilepsy, Neural Excitability, Synapses, and Glia: Seizure and Epileptic Disorders
Presentation Type: Oral

Hepatocyte growth factor attenuates the severity of status epilepticus in kainic acid-induced model of temporal lobe epilepsy by targeting apoptosis and astrogliosis

Submission Author: Sobhan Haghani

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Background and Aim : Although drug therapy is the most common treatment for epilepsy,proper seizure control is not achieved with current medications.The present study was conducted to evaluate the protective effects of hepatocyte growth factor(HGF) in a rat model of temporal lobe epilepsy(TLE) and explore possible molecular mechanisms.

Methods : A rat model of temporal lobe epilepsy was established using intra-hippocampal injection of kainic acid(4 μg).Intra-cerebrovascular injection of HGF(6 μg)was performed 30 min before injection of kainic acid. Learning and memory impairment were investigated by behavioral tests.ELISA assay was used to determine astrogliosis and DNA fragmentation.Changes in neuronal density and mossy fiber sprouting were evaluated by Nissl and Timm staining,respectively.

Results : Behavioral assessments indicated that kainate treated rats showed spontaneous seizure and their alternation percentage scores in Y-Maze test were lower (P<0.001). Likewise,the passive avoidance test confirmed learning disability in Kainate treated rats(P <0.001).HGF administration reduced the number of spontaneous seizures, alternation percentage score (P<0.001), and cognitive disturbances (P<0.001).The histopathological results also showed that HGF administration protected contributed to reduction of neuronal loss in the CA3 subregion of hippocampus and inhibited formation of aberrant mossy fiber sprouting (MFS) (P<0.01). Also, ELISA assay showed a significant decrease in GFAP (P <0.01), and DNA fragmentation (P<0.05) following HGF administration.

Conclusion : Our findings demonstrate the validity of HGF in protection against progression of the kainate-induced TLE in rats by improvement of learning, cognitive disturbances and inhibiting of apoptosis and astrogliosis.

Keywords : Hepatocyte growth factor; Temporal lobe epilepsy; Astrogliosis; Apoptosis; memory impairment

Count: 202
Abstract ID: 422
subject: Neuropsychiatry and Psychology: Mood Disorders
Presentation Type: Poster

GENOME-EDITING APPLICATIONS OF CRISPR-CAS9 TO treatment of depression; A PILOT animal model STUDY

Submission Author: Arvin Haghighatfard

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Background and Aim : Major depressive disorder (MDD) is characterized by depressed mood, diminished interests, impaired cognitive function and vegetative symptoms. The lifetime prevalence of MDD is 20.6% and its heritability is estimated to be approximately 35% which along with environmental factors, are associated with the risk of developing MDD. Recently, the clustered regularly interspaced short palindromic repeats-CRISPR-associated protein 9 (CRISPR-Cas9) systems was developed, which improves sequence-specific gene editing in cell lines, organs, and animals. CRISPR system would selectively disrupt the targeted location without affecting other region of DNA. Several long non-coding RNAs (lncRNAs) were found associated with etiology of major depressive disorder.

Methods : We set out to design and use a CRISPR system to disrupt expression of LncRNA named AK036791 in a mouse model of depression. Two group of male mouse were used (wild-type C57BL/6 mice, 7–8 weeks old, male, 20-25 g). The mouse model of depression produced by isolation model examined with forced swimming test. Test group were CRISPR/Cas9 knock-in mice model to induce doxycycline-regulated Cas9 induction that enables widespread gene disruption in multiple tissues and that limiting the duration of Cas9 expression. Then forced swimming test were conducted and expression level of AK036791 was assessed in nucleus accumbens of both groups by using quantitative time PCR.

Results : Results showed 3 time decrease in expression level of AK036791 in nucleus accumbens of test group (p<003). Forced swimming test showed improvement of depression in test group in swimming(p<03) and climbing time(p<003).

Conclusion : It seems that designed CRISPR/Cas9 could induce reduction of expression of genes that are involved in depression. CRISPR/Cas9 also can use for developing knock-in and knock-out mice that may help to shed light to molecular mechanisms of depression in central nervous system.

Keywords : depression - LncRNA-genome editing-CRISPR/Cas9

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Count: 203
Abstract ID: 423
subject: Development: Neurodevelopmental Disorder (ADHD, Autism, Learning Disorders)
Presentation Type: Oral

Gene expression study of mitochondrial complex I in autism spectrum disorder

Submission Author: Arvin Haghighatfard

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Background and Aim : Autism spectrum disorder (ASD) is known as a neurodevelopmental disorder with difficulty in social relationships, Verbal and non-verbal communication and Repetitive and ritualistic behaviors. Although genetics is known as the primary cause of autism, but it is still not clear which genes and molecular mechanisms is effective in the pathogenesis of these disease. Mitochondrial complexes' role in aetiology of psychiatric disorders such as schizophrenia had been reported. The present study aimed to assess the role of mitochondrial complex I and cell bioenergetic pathways in the aetiology and characteristics of ASD.

Methods : mRNA levels of all genomic and mitochondrial genes which encode mitochondrial complex I subunits (44 genes) were assessed in blood in 1594 ASD patients and 1284 non-psychiatric subjects using Real-time PCR, and also three domains of executive functions (working memory, response inhibition and vigilance) were examined by using Cambridge neuropsychological test automated battery (CANTABexpedio)in all subjects.

Results : Significant expression changes of 7 genes (including NDUFS1,NDUFV1, NDUFB11, and NDUFA1) in ASD patients were detected in mitochondrial complex I. Most of these genes were novel candidate genes for ASD. Several correlations between mRNA levels and severity of symptoms, deficits in attention, working memory, response inhibition and brain activities were found.

Conclusion : Deregulations of both core and supernumerary subunits of complex I are involved in the aetiology of ASD. Up- and down-regulation of mRNA levels of both core and supernumerary subunits may lead to abnormal structure,assembly or functions in complex I. This abnormal complex I may lead to electron transport chain problems in the prefrontal cortex and neurodegeneration. Correlations were found between attention and memory deficiencies and complex I abnormalities. It could lead to better understanding the role of neuronal bioenergetics system in executive function performances.

Keywords : Autism, complex 1, CANTAB

Count: 204
Abstract ID: 424
subject: Development: Neurodevelopmental Disorder (ADHD, Autism, Learning Disorders)
Presentation Type: Poster

Genotyping and expression analysis of 16p13 region in children with Attention deficit hyperactivity disorder and autism spectrum disorder

Submission Author: Arvin Haghighatfard

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Background and Aim : Attention deficit hyperactivity disorder (ADHD) is a neurodevelopment behavioral disorder in children with no clarified etiology. Autism is known as a neurodevelopmental disorder with difficulty in social relationships, Verbal and non-verbal communication and Repetitive and ritualistic behaviors. Although genetics is known as the primary cause of autism and ADHD , but it is still not clear which genes and molecular mechanisms is effective in the pathogenesis of these disease. 16p13 were found as a hot spot area for pediatric psychiatric disorders with several copy number variations related to ADHD and autism. present study aimed to evaluate the genotype and expression level of four genes(ABCC1,ABCC6,MYH11,NDE1) in this area in pripheral blood of ADHD and Autism children.

Methods : Blood samples of 50 ASD, 50 ADHD and 50 non psychiatric subjects were collected. RNA extracted and cDNA synthesized. Expression levels of four target genes in total blood were assessed by using Real time PCR. DNA was extracted and four candidate genes were sequenced by using ABI sequencer.

Results : Results showed significant down expression of ABCC1 and ABCC6 and significant over expression of MYH11 in both patients' group compared to non-psychiatric individuals. Three shared single nucleotide polymorphisms were found in ADHD band ASD patients, related to down expression of ABCC1.

Conclusion : Findings suggest that genes in 16p13 area are related to the etiology of ADHD and autism and could be use as biomarkers for early diagnosis. Also it seems that there is several shared molecular mechanisms between ADHD and autism especially in pathway of ATP Binding Cassette proteins.

Keywords : ADHD,Autism,ABCC,MYH11,NDE1

Count: 205
Abstract ID: 199
subject: Neuropsychiatry and Psychology: Other
Presentation Type: Poster

Predicting self-care in cardiovascular patients based on attachment styles and mindfulness

Submission Author: Shervin Hagighat Navaz Pastaki

Shervin Hagighat Navaz Pastaki[1], Feresht Toghiyani Pastaki[2]

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Background and Aim : Background: The rapid increase in cardiovascular disease is one of the major health challenges of global development. One-third of the global cessations (17 milion) in 1998 were from cardiovascular disease with 78% of these deaths resulting in low and middle countries. It is estimated that the increase in cardiovascular disease will increase in the next two decades. Adherence to self-care attitudes in cases with a chronic illnessis important, and patients can affect self-esteem, functional abilities, and disease processes by improving the quality of their self-care skils. The present research was conducted to predict self-care based on the Attachment styles and mindfulness in patients with cardiac diseases

Methods : Material and method:The research on this study was done based on the correlation method and the statistical population of this study were all the patients with cardiac diseases in Heshmat Hospital on october 1396.By using a convenience method of sampling ,150 people were chose and among them 79 members were females and 71 members were males. Also In this study self-care tools (schfive6.2) and the attachment styles scale (AAI) and mindfulness scales (mass) were used.

Results : Results:Analyzing the research data were conducted in two levels of descriptive statistics and inferential statistics. In descriptive statistics, statistical indicators such as abundance, average standard deviation; and in inferential statistics, Pearson correlation and registration analysis were used. Also based on the results of the Regration analysis, attachment styles are not able to predict patient's self-care

Conclusion : Conclusion: .in other words, there is no significant relationship between attachment styles (secure, avoidant, ambivalent) and self-care of the patients with cardiac diseases was observed. But a significant relationship between mindfulness level and attachment styles was reported.

Keywords : Keywords: Self-care, Patients with cardiac diseases, Mindfulness, Attachment styles

Count: 206
Abstract ID: 333
subject: Cognition: Executive Function (Decision Making, Reasoning, Problem Solving)
Presentation Type: Oral

Map-based Missalignment effect in Virtual Spatial Navigation

Submission Author: Shirin Hajahmadi

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Background and Aim : Finding the way through a complex environment is a fundamental cognitive ability that relies on spatial cognition processes such as perception, remembering, reasoning in space and time, and motor functions. Spatial navigation is a multi-sensory process that includes integrating and manipulating information that comes from externalized and internalized representations to guide behaviors. An important issue in spatial navigation is the difficulty that people face during their navigation using maps, which is called misalignment effect. The alignment effect happens if there is any deviation between the up direction on the map and the viewer's head-direction in the environment.

Methods : Participants were 18 undergraduate students of age between 20 and 35m without any severe astigmatism or mental difficulty. The Walking Corsi Test was implemented to measure topographic spatial ability. The task consisted of three trials that were conducted to test the proposed research hypotheses. Then, a navigation task in a simulated head Mounted virtual environment was conducted through a within-subject factor. Participants were asked to find three pre-specified destinations using the maps located on their way to the three destinations. Finally, a questionnaire to test the presence, immersion, usability and motion sickness of the designed task was filled out.

Results : Statistically significant differences were observed in some navigational variables in three different degrees. Several variables were measured for each degree, including the orientation of the first step toward the destination in their first and second exposure to each map, the number of requests for appearing a map while navigating, the number of times and the total time being in the map zones during the whole task and within each trial, and the total navigation time. Friedman's Chi-Square Test results indicated that there was no statistical difference in the amount of none of the above variables in three different degrees except the total navigation time. However, people faced with more confusion when exposing to the misalignment of '45', while there was no highlighted difference between the 0 and 180 misalignments degrees. Spatial abilities scored by Walking Corsi Test were highly correlated with most of the variables. Also, men and women were not different in their navigational variables, though there was a significant difference between their spatial ability scores.

Conclusion : Navigational or confusion patterns appeared to be correlated with the participant's spatial topographical ability and Gender, which shows the importance of considering gender differences as a plausible effective factor in such studies. Also, that participants have spent more total time when running the 45 degree than 0 and 180 one highlights 45 or any other non-perpendicular degree compared to perpendicular ones, which can be in favor of those hypotheses saying that participants will use this extra time for three tasks of identifying the misalignment effect, retrieving appropriate strategy to solve that from their memory, and executing the solution. Therefore, any cognitive training to reduce the

misalignment effect in non-perpendicular situations might be of benefit in the performance in any area which involves making complex decisions.

Keywords : Spatial Cognition; Virtual Reality; Navigation; Map; Misalignment Effect

Count: 207
Abstract ID: 361
subject: Epilepsy, Neural Excitability, Synapses, and Glia: Seizure and Epileptic Disorders
Presentation Type: Oral

Effect of Seizures Treatment on Stuttering Severity

Submission Author: Zahra HajGholamRezaee

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3. medical student

Background and Aim : There are indications that epilepsy may be common in children with stuttering.In this study we examined the effect of anti epileptic drugs in accompany with speech therapy interventions on severity of stuttering in compare with speech therapy interventions alone.

Methods : 20 children with manifestation of stuttering were studied in two groups. All patients underwent EEG recordings during sleep. Group A received anti epileptic drugs and speech therapy intervention and group B received speech therapy intervention alone.

Results : Group A had a severity decreasing after 8 weeks but group B did not show any meaningful change in severity of stuttering.

Conclusion : Our data suggest that it is important to evaluating the existence of seizures in children who stutter and accompanying anti epileptic drugs with speech therapy intervention can be useful.

Keywords : anti epileptic drugs, speech therapy,stuttering treatment

Count: 208
Abstract ID: 302
subject: Motor Systems
and Movement Disorders: Other
Presentation Type: Poster

Effects of thymoquinone on motor function and the dentate gyrus electrophysiological activity in an animal model of hepatic encephalopathy

Submission Author: Somayeh Hajipour

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Background and Aim : Hepatic Encephalopathy (HE) is a neurological complication of liver failure, which can lead to psychomotor dysfunctions, impaired memory, shortened attention that may finally lead to coma and death. A toxin model of hepatic encephalopathy was selected using thioacetamide (TAA). This model has been used to clarify changes in the functions of the CNS in HE. Thymoquinone (TQ), the main active constituent of Nigella Saliva seeds, is reported to have strong free radical scavenger, antioxidant and anti-inflammatory properties in different animal tissue models. The purpose of the present study was to investigate motor coordination behavior and the dentate gyrus (DG) electrophysiological activity on rats with TAA-induced liver damage and hepatic encephalopathy

Methods : Male Wistar rats were divided into 5 groups randomly: 1) Control; received normal saline. 2) HE; received TAA (200 mg/kg). 3) HE + TQ5. 4) HE + TQ10. 5) HE + TQ 20 (mg/kg, i.p.) for 7 days after HE induction. In order to induce animal model of HE, TAA (200 mg/kg) were injected intraperitoneal once every two days for consecutive 14 days. Rotarod tests performed to evaluate the motor activity and coordination. Neuronal single unit recording was assessed from hippocampal DG. Data were analyzed by one-way ANOVA followed by Tukey's post hoc test and changes with p value less than 0.05 assign as significant difference

Results : Data showed HE induction impairment of motor coordination rats as compared with control rats, while motor function were significantly improved in TQ treatment groups when compared with those of HE rats in a dose dependent manner ($P < 0.001$). The results showed that the average number of spikes/bin was significantly decreased in the HE rats compared with the control group ($p < 0.001$) and injections of TQ lead to a significant increase in the spike rate compared with the HE group ($p < 0.001$ and $p < 0.01$)

Conclusion : Our results showed that HE induced impairment in motor function and electrophysiological damages in rats. Administration of TQ after HE induction reveals therapeutic potential to motor coordination activity and electrophysiological dysfunction which is most likely related at least to its antioxidative and free radical scavenging actions

Keywords : Hepatic encephalopathy; Thymoquinone; Thioacetamid; Rotarod; Single unite; Rat

Count: 209
Abstract ID: 82
subject: Cognition: Learning and Memory
Presentation Type: Poster

Correlation between plasma ghrelin level and memory performance under chronic scheduled- diet

Submission Author: Alireza Halabian

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Background and Aim : Previous studies have indicated that brain controls learned feeding behavior through ghrelin. Also, ghrelin has neuroprotective and memory enhancing effects and is a well-known neurogenic hormone. We designed the study to determine how the combination of learned- meal with different calorie intake will affect the endogenous ghrelin response and whether there is a relation between ghrelin changes and memory performance.

Methods : Forty male Wistar rats (180-200¬gr) were distributed into four groups (n=10), freely fed rats (control) and three scheduled-fed groups with different caloric intakes; high fat, standard and restricted diet. At the end of study, initial and step-through latencies (learning and memory) and plasma ghrelin levels were evaluated.

Results : A significant positive correlation between ghrelin plasma levels and memory performance was seen just in scheduled-standard feeding group, while the ghrelin results of high fat and restricted feeding groups did not correlate with memory function.

Conclusion : Current data show scheduled feeding behavior had more effective role on memory function than freely feeding pattern, and this response completely relies on dietary composition /or energy intake.

Keywords : Ghrelin; Memory; Chronic scheduled- diet; Rat.

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Count: 210
Abstract ID: 636
subject: Novel and Cutting-Edge Technologies: Brain Mapping　(MRI, fMRI, PET, Brain Mapping, EEG, EMG, QEEG, FNIRS)
Presentation Type: Oral

Evaluation of SNR with different type of MR coil(TX/RX,20 flexible coil) in concurrent TMS-fMRI studies

Submission Author: Mojgan Hamdami

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Background and Aim : Neuroimaging tools are a significant area of interest within the field of functional magnetic resonance imaging (fMRI). Traditionally, fMRI has subscribed to the belief that research on localization, recent evidence suggests the role of cortical specialization with the ultimate goal of obtaining a "cognitively precise parts list" for the human brain and that complex cognitive brain functions must result from the collaborative interplay between distributed and interconnected brain regions. Many fMRI studies took advantage of its high spatial resolution to identify functionally specialized brain areas. In contrast, by reversibly perturbing ongoing neural processing, Transcranial Magnetic Stimulation (TMS) is a non-invasive brain stimulation tool extensively used in clinical and cognitive neuroscience research can causally implicate the stimulated region, TMS-induced changes in neural activity need to be monitored directly by combining during functional magnetic resonance imaging (i.e., concurrent/interleaved TMS-fMRI) to understand neural mechanisms underlying cognitive functions. However, no advanced commercial multi-channel whole-brain array MR coils can fit the large TMS coil. This paper attempt to developed a low-cost and easy-to-configure setup that takes advantage of the superior signal-to-noise ratio (SNR) performance of commercially available flexible body array coils that can accommodate the TMS coil

Methods : Concurrent TMS-fMRI is a technically challenging methodology that needs to overcome problems arising from the interference between the magnetic fields inherent to each technique. In this study, flexible MRI body array coils (i.e.,8coil; medium flexy coil and head 20coil) were fitted on TMS compatible 8coil that fixed with a TMS-coil holder. Case study images acquired using the flexible coil with sham and active TMS were compared with those from a product 2-channel (2CH)TX/RX coil

Results : The first set of analyses examined the impact of 2CH head coil(TX/RX), images acquired using the flexible coil were of similar quality, but with increased noise levels, leading to moderately reduced temporal SNR values. Comparison with existing method: A previous study reported that the temporal SNR of a product 2CH head coil was twice that of a transmit/receive volume birdcage coil commonly used in

combined TMS-fMRI. Taken together, these results suggest that the flexible-coil(20CH) setup improves SNR performance for combined TMS-fMRI acquisition.

Conclusion : This paper has given an account of and the reasons for the widespread use of the inexpensive and easy-to-configure flexible-coil setup, which a practical and likely superior alternative to transmit/receive coil for combined TMS-fMRI studies

Keywords : Brain; Transcranial magnetic stimulation ;Functional magnetic resonance imaging; signal-noise-ratio

Count: 211
Abstract ID: 653
subject: Computational Neuroscience: Neuroinformatics
Presentation Type: Poster

Trends in Neuroscience in Iran: A Scientometric Analysis for Mapping and Clustering Neuroscience Literature from 2000 to 2019

Submission Author: Mojgan Hamdami

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Background and Aim : Neuroscience as an interdisciplinary field devoted to the scientific study of the nervous system, is rapidly expanding. With the explosive growth of neuroscience research, there is a need to evaluate the publication output in order to be used in policy and management contexts. Scientometric analyses is a powerful tool for identifying research trends and gaps to suggest future priorities. The purpose of the current scientometric study was to extract the trends in neuroscience publications in Iran from 2000-2019 via a rigorous analysis on the published articles.

Methods : A publication set broadly covering neuro/brain science was constructed in two steps: First, Medical Subject Heading (MeSH) descriptors related to neuro/brain sciences were identified and used for an inclusive query in PubMed database to identify the relevant publications. Subsequently, the corresponding publications' characteristics were extracted from the web of Science (WoS) citation database. Using this approach 15204 articles published under the neuroscience category were included. This publication set was investigated for estimating annual growth rate. Furthermore, algorithmic methods were conducted to cluster the publications set. Using Vosviewer software, the MeSH descriptors were mapped according to their co-occurrence, their frequency, and and an algorithmically produced clustering of overall topics. Similarly, international collaboration network for the publication set was identified.

Results : The Iranian neuroscience publication output was increasing over the examined years with an average of 25% (SD=18 %) relative annual growth. The average annual number of publications was 316 for the first decade while it surged above 1500 in the second decade. However, the number of publications decreased dramatically in 2019 which needs to be further investigated. The co-MeSH descriptor network singled out seven clusters that described the MeSH topicality of the Iranian set of neuroscience publications. The cluster emerged around: Human behavioural studies, Cell signal transduction studies, animal studies, clinical studies, brain studies, neurogenetic studies and mental disorders. In each main cluster, the highly trendy research topics were identified which gives an overall and comprehensive view of the research types. For instance, in the brain cluster, MRI and EEG studies are bold whereas researches focused on hippocampus and dose-response relationship are dominant in the animal studies. In the mental disorder cluster, schizophrenia and autism are the significant topics. Mapping the international network illustrated that USA, Germany, Canada, England, Australia, Italy, Switzerland, Sweden and France are the main nodes for Iranian neuroscience collaboration.

Conclusion : The MeSH-centered approach enabled us to identify the neuroscience publication set according to their subject indexing at individual publication level. Therefore, we overcome the limitation

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of journal classification systems in traditional scientometric analyses which generally leads to exclusion of articles in multidisciplinary journals. Our results showed an expanding growth of neuroscience publication over the examined years with growing proportion for international collaborations. Both the trendy neuroscience research topics and those that need to be improved in Iran compared to the global trends were identified. The Iranian set somewhat resembles the global set with less emphasis on topics such as dementia.

Keywords : scientometric, MeSH, mapping, literature; analysis

Count: 212
Abstract ID: 325
subject: Emotion, Motivation
and Behavior: Motivation and Emotion
Presentation Type: Poster

Effect of a Cognitive Computer Game on Emotion Regulation of Children with Oppositional Defiant Disorder

Submission Author: Nahid Hamidzadeh

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Background and Aim : Emotion regulation is one of the most important skills that children and adolescents need in order to live productive and relaxed lives. Since Children with Oppositional Defiant Disorder (ODD) often have problems in emotion regulation, using cognitive computer game designed to improve emotion regulation, has attracted many researchers.

Methods : EmoGalaxy is designed to help these children in practicing their emotion regulation. Effectiveness of this intervention was evaluated by a quasi - experimental research with pretest-posttest and control group. 12 students in the experimental group participated in this program, and the control group, with … of similar level of ODD students, did not receive any treatment. The instruments used in this study were Child Symptom Inventory (CSI-4) and DSM-5 Check list. Also, Sheilds & Cicchetti Emotion Relation Checklist (1998) was used to measure emotion regulation. The obtained data were analyzed using Analysis of the Covariance (MANCOVA).

Results : The findings showed significant differences ($p<0.05$) between the experimental and the control group in emotion regulation. Effect size is shown in the components of emotion regulation

Conclusion : using appropriately designed computer games for improving emotion regulation was discussed. Further discussions as well as suggestions for future research are presented.

Keywords : Emotion regulation, Emotion regulation, Cognitive computer game, Oppositional Defiant Disorder.computer games, Oppositional Defiant Disorder.

Count: 213
Abstract ID: 482
subject: Cognition: Working Memory
Presentation Type: Poster

The role of central executive of working memory in academic goal setting

Submission Author: Farzin Haqnazari

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2. Associate Professor of Cognitive Neuroscience, Institute for Cognitive and Brain Sciences, Shahid Beheshti University Sciences
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Background and Aim : Setting a goal needs executive control to make a decision about future end states considering various factors. We studied the relationship between central executive of working memory and goal setting in this paper.

Methods : A sample of 110 middle school students included by simple random sampling in this research. Central executive of working memory assessed by the Backward score of Digit Span task and goal setting assessed by the difference between the last academic performance and the grade goal for the next semester.

Results : The findings showed a negative correlation between the variables (R=-0.36, p=0.001) and that the Backward scores can predict goal-setting by a significant regression equation ($F(1,108)=16.55$, p=0.001) with an R2 of 0.13.

Conclusion : The negative correlation between central executive performance and goal-setting shows that poor central executive performance can be related to poor understanding of ability or poor ability in predicting future.

Keywords : central executive, goal setting, grade goal, working memory

Count: 214
Abstract ID: 634
subject: Cognition: Learning and Memory
Presentation Type: Poster

The Effectiveness of Mindfulness-Based Cognitive Therapy on the Hardiness of Older Men with Alzheimer's

Submission Author: Bahareh Hasan Poor Asil

Bahareh Hasan Poor Asil[1]

1.   MA in General psychology

Background and Aim : Alzheimer's disease usually occurs between the sixth and ninth decades, and its destructive process includes gradual memory impairment, judgment, and language skills as well as behavioral changes. In the world.Clinical manifestations of the disease, such as microscopic biopsies showing cortical atrophy with enlarged cerebral ventricles, reflect neural degeneration in the brain cortex, especially in the temporo-parietal cortex and hippocampus. The purpose of this study was to determine the effectiveness of mindfulness-based cognitive therapy on the hardiness of elderly men with Alzheimer's disease.

Methods : The research design was quasi-experimental with pretest-posttest with experimental and control group. The statistical population included the elderly men with Alzheimer's disease in Rasht city in 2019. 32 of them were selected by convenience sampling and divided into experimental and control groups.The instrument used in this study was Ahwaz hardiness questionnaire. The experimental group underwent eight sessions of 90-minute sessions of cognitive-based cognitive therapy in the control group and the control group did not receive any intervention.

Results : The findings show that the mean score of stubbornness in postmenopausal men with Alzheimer's has increased compared to pre-test.

Conclusion : The results showed that mindfulness-based cognitive therapy had an impact on the hardiness of older men with Alzheimer's disease.

Keywords : Mindfulness-Based Cognitive Therapy, Hardiness, Elderly Men, Alzheimer's.

Count: 215
Abstract ID: 100
subject: Epilepsy, Neural Excitability, Synapses, and Glia: Seizure and Epileptic Disorders
Presentation Type: Poster

Apigenin inhibits mossy fiber sprouting in a rat model of temporal lobe epilepsy

Submission Author: Paria Hashemi

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Background and Aim : Introduction: Aberrant sprouting of granule cell axons (mossy fibers) into the molecular layer of the dentate gyrus is a common neuropathological finding in patients with temporal lobe epilepsy (TLE). MFS establishes an aberrant positive-feedback circuit among granule cells, which has been proposed to be epileptogenic. Flavonoids have recently been considered in the treatment of epilepsy. This study investigates the effects of apigenin on MFS and epileptic behaviors in a rat model of TLE.

Methods : Methods: 32 rats were randomely divided to 4 groups: Control vehicle, apigenin-sham, kainic acid, apigenin+kainic acid. For evaluating the anticonvulsant effect of apigenin in the kainite TLE model, apigenin was orally administered (50 mg/kg) for six days. MFS, neuronal loss and neurodegeneration in the hippocampus were measured using by Timm and Nissl staining and Fluoro-jade B (Fj-B) respectively.

Results : Results: Our results showed that oral administration of apigenin could reduce susceptibility to seizures (P<0.01) and lead to the inhibition of MFS (P<0.001) in the KA-treated hippocampus. Moreover, pretreatment with apigenin significantly reduced the neural loss and neurodegenerationin hilar region of the hippocampus (P<0.001) compared with KA-treated group.

Conclusion : Conclution: These results suggest that apigenin has a therapeutic potential against epilepsy through its abilities to inhibit MFS and neurodegenerative events in the invivo hippocampus.

Keywords : Key words: Apigenin, TLE, MFS, Neurodegeneration

Count: 216
Abstract ID: 171
subject: Pain and Sensory Systems: Tactile, Somatosensation and Pain Syndromes
Presentation Type: Poster

Intra-BLA injection of orexin A counteracts the innate fear-induced analgesia

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Background and Aim : The amygdala is in almond-shape nucleus that has a pivotal role in the expression and modulation of fear and anxiety. This complex structure has massive neural connections with dorsomedial and ventromedial hypothalamus (respectively DMH and VMH) nuclei and lateral hypothalamus (LH). DMH/VMH nuclei play a key role in the modulation of responses to harmful and fearful stimuli. Also, LH is rich in orexinergic neurons which modulate various brain functions such as appetite, sleep-wake cycle and pain. Moreover, neural projections of the descending pain modulatory pathway are originating from the amygdala and terminated in the dorsal horn of spinal cord. Therefore, the aim of this study was to induce the innate fear, to examine the innate fear-induced analgesia and to assess the effect of intra-BLA orexin A on the innate fear-induced analgesia in the thermal pain.

Methods : In this study, male Wistar rats weighing 200–270 g (n=7 per group) were purchased from the animal facility of Baqiyatallah University of Medical Sciences. Animals were anaesthetized with 60 mg/kg ketamine and 7.5 mg/kg xylazine and fixed in a stereotaxic apparatus. The stainless steel 23-gauge guide cannulas equipped with a 30-gauge stylet were unilaterally implanted in the right DMH/VMH and BLA nuclei. After recovery period, 40 ng/300 nl bicuculline was injected into the DMH/VMH nuclei and then the innate fear-induced behaviors were studied by open field test. To confirm the innate fear induction, the following responses were assessed over 10 min using a Sony Handycam camera: the crossings; the rearing (upright posture); the rapid defensive backward movements; the elaborated forward escape behavior; the defensive attention; the defensive immobility ('freezing') and the jumping oriented to the upper side of the arena. After open field test, orexin A was immediately injected into the BLA nucleus. 10 Minutes later, the tail flick and hot plate tests were done by 60 seconds intervals. Every test was recorded for 70 minutes with 10 minutes intervals. At the end of the tests, animals were anesthetized and their brains were removed and examined the correct cannula implantation in the DMH/VMH and BLA nuclei.

Results : : Our results demonstrated that the intra-DMH/VMH injection of bicuculline significantly increased the frequency and duration of defensive attention, the frequency and duration of defensive immobility ('freezing'), the frequency and duration of rearing (upright posture) and the frequency jumping behavior. These findings confirm the innate fear induction. The innate fear induction reduced the sensitivity to thermal pain in the tail flick and hot plate tests. Intra-BLA injection of orexin A counteracted the innate fear-induced analgesia in the tail flick test. However, orexin A failed to prevent the innate fear-induced analgesia in the hot plate test.

Conclusion : : In agreement with our results, it can be concluded that the inhibition of the GABAergic system of DMH/VMH nuclei can induce the innate fear and consequently stress-induced analgesia. The intra-BLA injection of orexin A counteracted the innate fear-induced analgesia.

Keywords : Orexin A; innate fear induced analgesia; Pain modulation

Count: 217
Abstract ID: 74
subject: Neural Injuries and Neurodegenerative Disorders: Demyelinating Disorders
Presentation Type: Poster

MS disease and providing a biologic perspective and reducing the symptoms of the disease with the help of stem cells

Submission Author: Shima Sadat Hashemi Madani

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Background and Aim : Introduction: MS is one of the most common inflammatory diseases of the central nervous system, with the destruction of nerves. One of the symptoms of MS disorder is dystonia, fatigue, spasticity, disturbances, lack of sensation in the organs, cognitive impairment, weakness, tremor, pain, bladder and bowel dysfunction.

Methods : The search was carried out in the Pubmed / Medline database. 63 The study was designed to investigate patients with MS and therapeutic samples that were materially similar to the current research, and are included in this article.

Results : Therapeutic injection methods in MS have responded, but patients are still in trouble. Studies have shown that the use of stem cells for treating patients with MS has been fruitful and can be used to treat MS.

Conclusion : As it has been said, the most important treatment challenges in this way is to reduce treatment, and moreover, that anti-MS drugs in advanced forms are limited. Hence, the production of new, improved medicines for the complete treatment of MS is essential. Stem cells play a very important role in the repair process, and the complications of these cells are low in patients and provide an acceptable response. Reliably, the focus on new immunology methods with more biological properties has a greater impact on the treatment category. They will have patients.

Keywords : MS, Balance, Immunology, Therapeutic Proposal

Count: 218
Abstract ID: 276
subject: Neurorehabilitation and Regeneration: Physiotherapy
Presentation Type: Oral

Reaction Time and Non-invasive Brain Stimulation

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Background and Aim : Temporal processing is essential for precise movement execution. Precise motor timing engages a number of cortical brain areas such as parietal, frontal, primary motor and premotor areas. Noninvasive brain stimulation technique can be used for modulation of cortical excitability and therefore, influence the outcomes of a motor behavior such as the time required to respond to a motor stimulus (reaction time). The aim of this study was to investigate whether reaction time during a sequential visual isometric pinch task (SVIPT) can be affected by a single-session anodal transcranial direct current stimulation (a-tDCS) over the fronto-parietal network (FPN) sites such as dorsolateral prefrontal cortex (DLPFC), primary motor cortex (M1) or posterior parietal cortex (PPC).
Methods : A total of 48 right-handed healthy participants were randomly assigned to one of the four stimulation groups: 1) a-tDCS of left M1, 2) left DLPFC, 3) left PPC and 4) sham. A-tDCS was applied during SVIPT in which participants precisely control their forces to reach seven different target forces from 10 to 40% of maximum voluntary contraction (MVC) presenting on a computer screen. The ratio of reaction times were measured in both the trained and untrained hands.
Results : There were significant differences between a-tDCS groups on ratio of reaction times at target forces of 15% MVC in both the trained and untrained (p = .012) hands. M1 showed significant elongation in reaction time compared to other two groups (PPC and Sham) in the right trained hand. Whereas, the DLPFC a-tDCS group compared to the M1 group, revealed considerable reduction in reaction time for the target force of 15% MVC in the left untrained hand (F 3, 44) = 3.6, p = .02). No significant differences were found in other target forces.
Conclusion : Our findings suggest that different sites of the FPN (DLPFC, M1 or PPC) were differentially affected by a single session of a-tDCS at some target forces during SVIPT. It seems the left PPC is more involved in temporal processing compared to the left M1 for control of the right trained hand. Left DLPFC is more engaged in the left-hand (untrained) time processing in a number of target forces in SVIPT. Further research is needed to better understand fundamental aspects of these areas on sequence learning in a precision control task such as SVIPT.
Keywords : Anodal transcranial direct current stimulation, a-tDCS, Reaction time, Primary motor cortex, Dorsolateral prefrontal cortex and Posterior parietal cortex.

Count: 219
Abstract ID: 140
subject: Neurorehabilitation and Regeneration: Medication and Stem Cell Therapy
Presentation Type: Poster

Acute systemic single injection of Lipopolysaccharide mediated local polarization of macrophage/microglia phenotype and functional recovery following contusion spinal cord injury

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Background and Aim : mechanical impact on the spinal cord disturbs ascending and descending tracts at the level of injury, resulting in loss of sensation and motor control respectively. Moreover, secondary cascade exuberated spinal milieu and damage propagates to the rostral and caudal of the lesion site. Post-traumatic SCI inflammation is a persistent feature of the spinal cord microenvironment. phenotype diversity of macrophages/microglia (M1/M2) exists in the injured spinal cord and this heterogeneity may responsible for dual detrimental or beneficial roles of inflammation in regulating regenerative capacity. The aim of the present study was to evaluate the possible effect of early activation of TLR4 signaling via their ligand: LPS, after contusion spinal cord injury model in rats.

Methods : We designed a customized impact device to develop Contusion spinal cord injury in rats. Wistar rats, 250-270 g in weight were divided into 5 groups. LPS were intraperitoneally administrated at immediate(2h) or early(6h) time separately at the low doses 0.2 and 0.5 mg/kg. In the present study, we evaluated the expression of pro-inflammatory (CD86, IL-1b, IL-12, NF-kB) and anti-inflammatory (CD206, IL-13, IL-10, C/EBPb) associated gene by quantitative PCR at different time course up to 28 days. We determine the effectiveness of LPS injection in structural remodeling and behavioral outcomes after SCI.

Results : First, we have found that SCI induces a temporal change in inflammatory marker up to 4 weeks. LPS administration could modulate local inflammation and LPS 0.5 mg/kg acutely reduces the mRNA level of pro-inflammatory M1 at least for 24h post-SCI. functional analysis demonstrated that all treatment groups with LPS showed improvement in spontaneous motor recovery in a dose-dependent manner compared to the SCI group. it was observed that the evaluated score of the BBB was higher in rats received LPS 0.5 mg/kg at an early (6h) phase compare to other groups for 4 weeks. And also, early (6h) treatment with LPS 0.5 mg/kg reduces lesion site.

Conclusion : Importantly, systemic LPS administration displayed a local anti-inflammatory beneficial role, through a shift in the polarization of macrophage is associated with improved tissue sparing and functional recovery which may contribute to the reduction in the expression ratio of CD86/CD206.

Keywords : spinal cord injury; macrophage polarization; inflammation; motor recovery

Count: 220
Abstract ID: 69
subject: Neural Injuries and Neurodegenerative Disorders: Ischemia, Stroke, and Neurovascular Disorders
Presentation Type: Poster

The effects of ellagic acid on anxiety-like, depression-like behaviors and oxidative stress in male rats with cerebral ischemia/reperfusion

Submission Author: Khadijeh Hassonizadeh Falahieh

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Background and Aim : This aim of this study was evaluation the effects of ellagic acid on anxiety-like, depression-like behaviors and oxidative stress in male rats with cerebral ischemia/reperfusion (I/R).

Methods : Fourty eight male Wistar rats weighing 250- 300 g divided into six groups randomly with 8 in each: 1) Sham: rats submitted to the surgery without the occlusion of carotid arteries, received DMSO/ normal saline (10%) as solvent of ellagic acid, 5 ml / kg three times daily for one week. I/R groups were divided into the following 2 to 5 subgroups: 2) Received DMSO/ normal saline. 3-5) Received 50, 75, and 100 mg / kg ellagic acid, respectively, according to its half-life of 8 hours, three times daily for one week. 6) Positive control, included healthy rats receiving the most effective dose of ellagic acid three times daily for one week. The cerebral I/R injury was induced by separation of the common carotid arteries from other surrounding tissue and gently separated from the vagus nerve, clamping for 20 minutes and then blood flow was established again by removing the clips. Elevated plus maze (EPM) used to study anxiolytic, the forced swimming test (FST) was used to measure the level of depression and oxidative stress enzymes superoxide dismutase (SOD) and glutathione peroxidase (GPx) were measured by special ELISA kit.

Results : Brain ischemia caused significant increase anxiety, depression and oxidative stress of the brain tissue damage ($p<0.001$). Administration of ellagic acid for one week and three times a day could significantly reduce ischemic disturbances on anxiety and depression behaviors($p<0.001$) and damage caused by increased oxidative stress($p<0.001$)

Conclusion : The findings of this study indicate that ellagic acid can be used as a therapeutic strategy through decrease anxiety and depression by reducing the oxidative stress and cytokines induced by ischemic inflammation

Keywords : Ellagic acid; Anxiety; Depression; oxidative stress; Male Rat; Cerebral Ischemia/Reperfusion

Oral & Poster Presentations

8th Basic and Clinical Neuroscience Congress
December 18-20, 2019
Razi Hall, Tehran, Iran

Iran University of Medical Sciences

Iranian Neuroscience Society

Count: 221
Abstract ID: 191
subject: Integrative system: Neuroendocrinology
Presentation Type: Poster

Investigate the effect of hydroalcoholic dill extract on plasma levels of hypothalamic-pituitary-gonadal axis hormones in male mice

Submission Author: Kazem Hatami

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Background and Aim : The hypothalamic-pituitary-gonadal axis is one of the important neuroendocrine pathways. Dill contains various chemical compounds such as flavonoids and flavonoids,that they have estrogenic properties. These compounds have many effects on the hypothalamic-pituitary-gonadal axis. According to side effects of chemical drugs affecting the hypothalamus-pituitary-gonadal axis, finding plants with similar properties will be useful. The aim of this study was to determine the effect of dill extract on blood concentrations of gonadotropic and testosterone hormones in male mice.

Methods : In this study, 28 male mice were divided into 4 groups: control, dill 100, dill 300 and dill 500 mg / kg. Hydro-alcoholic extract of dill was used for 30 days by intraperitoneal injection. After this period (30 days) under complete anesthesia, blood was collected from the hearts of the animals. Serum blood samples were measured by using specific kits of hormone radioimmunoassay.

Results : The results of the present study showed that the serum level of testosterone in the extract receiving groups was significantly lower than the control group. But the levels of LH and FSH in the groups receiving the extract increased in a dose-dependent manner.

Conclusion : Increased pituitary-secreting hormones appear to be due to a decrease in testosterone secreted by the testes and this decrease activates the negative feedback in the hypothalamic-pituitary-gonadal axis. As a result, it increased the LH and FSH hormones in the extract receiving groups.

Keywords : Dill - Hypothalamus - Pituitary - LH - FSH

Count: 222
Abstract ID: 625
subject: Neural Injuries and Neurodegenerative Disorders: Ischemia, Stroke, and Neurovascular Disorders
Presentation Type: Poster

Assessment of Cinnamomum zeylanicum extracts pre-nutrition on antioxidant capacity after brain Ischemia in receiving high-fat diet rats.

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Background and Aim : Stroke is a cerebrovascular accident that occurs due to ischemia or blood vessel damage. This complication is the second leading cause of death after cancer and heart disease in Iran. Although the incidence of stroke is high, the approved effective therapies are limited. An antioxidant-rich diet is one of the most cost-effective methods for preventing stroke. Cinnamon is rich in antioxidants and according to the previous studies, the anti-inflammatory, anti-hyperlipidemia, anti-diabetic and neuroprotective effects of cinnamon have been proven. In this study, the pre nutritional effect of hydroalcoholic extract of cinnamon on the antioxidant capacity was studied after cerebral stroke induction in animals under a high-fat diet.

Methods : In this study, 84 male Wistar rats were randomly divided into 7 groups(n=12): sham, control, model, lovastatin (10 mg/kg), vehicle (CMC 0/5%), high dose cinnamon (260 mg/kg) and low dose cinnamon (130 mg/kg). All groups except the control were on a high-fat diet for 8 weeks. Then, positive control, vehicle, low and high dose cinnamon groups received lovastatin, Carboxymethyl cellulose (CMC) and cinnamon extract 130 and 260 mg, respectively (6 weeks). At the end of the week 14th, treatment groups underwent MCAO surgery and 12 hours after the induction of stroke, antioxidant capacity was evaluated. The activities of the antioxidant enzymes superoxide dismutase (SOD), catalase (CAT), and the total antioxidant capacity (TAC) were determined.

Results : The results of antioxidant activities of the cinnamon hydroalcoholic extract showed that total antioxidant capacity (TAC) and activity of superoxide dismutase and catalase (SOD and CAT) antioxidant enzymes were significantly increased at doses of 130 and 260 mg ($P < 0/05$).

Conclusion : Consumption of cinnamon extract increased serum antioxidant capacity in mice receiving a high-fat diet. Given the increase in free radicals after ischemic stroke, cinnamon intake seems to be effective in reducing the complications of a stroke.

Keywords : Stroke, Cinnamon, neurological deficits, Antioxidant, Rat

Count: 223
Abstract ID: 25
subject: Emotion, Motivation
and Behavior: Stress and the Brain (Stress-modulated Pathways, Stress and Cognition, Stress Related
Disorders)
Presentation Type: Poster

Association of paraoxonse1 (PON1) genotypes with the activity of PON1 in patients with Parkinson′s disease

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Background and Aim : Parkinson's disease (PD) is defined as a chronic neurodegenerative disorder. A wide range of factors, such as oxidative stress, neurotoxins, and pesticides, can affect Parkinson′s disease (PD). In this study, we surveyed the relationship between PON1 polymorphisms and Parkinson's disease pathogenesis.

Methods : We investigated two polymorphisms (L55M and Q192R) of the PON1 gene by PCR-RFLP assays. We also measured the levels of PON1, TAC (total antioxidant capacity), and TOS (total oxidant status) with ELISA (Enzyme-linked immunosorbent assay) and spectrophotometric methods.

Results : Paraoxonase and arylesterase activity of PON1 as well as their concentrations were lower in patients with PD compared to control group; however, this difference was not significant. The levels of TOS and OSI were higher in patients group, while the levels of TAC were lower compared to control group. Serum PON1 concentration and its activity was higher in LL (in comparison with LM and MM) and RR (in comparison with QR and QQ) genotypes while we did not observe any significant differences in arylesterase levels among the mentioned polymorphisms.

Conclusion : In the current study, we reported associations between PON1 polymorphisms (55, 192) and enzyme activities in Parkinson's disease. Results showed that there was a significant reduction in PON1 levels in patients with Parkinson compared with healthy samples. Taken together, paraoxonase enzyme in subjects with different genotypes could be a potential biomarker for determining the severity and prognosis of Parkinson. However, more studies are needed to be done to clarify its clinical values.

Keywords : Parkinson's disease; Paraoxonase1; Polymorphism

Count: 224
Abstract ID: 183
subject: Neural Injuries and Neurodegenerative Disorders: Traumatic Brain Injury
Presentation Type: Poster

The effect of Levetiracetam on the blood brain Barrier, brain edema and neurological scores after severe traumatic brain injury in male rat: the role of matrix metalloproteinase- 9 (MMP-9)

Submission Author: Amirhossein Hessami

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Background and Aim : LEV is used for adjuvant therapy in patients with partial seizures and exerts its effects mainly through inhibition of synaptic protein 2A and by inhibiting the flow of inhibitory allosteric mediators such as zinc, GABA and glycine, it reduces calcium release from axonal reserves. Therefore, in this study, we investigated the effects of neuroprotective LEV after induction of brain inflammation in rats.

Methods : The male Albino Wistar rats received different doses of Levetiracetam (50, 100, 200 mg/kg, i.p.).All animals were intubated before surgery. In the TBI groups, diffuse TBI was induced by Marmarou method using a TBI induction device. The severe TBI was induced using a weight 450 gr.In the sham groups, all stages of induction of TBI were performed except dropping weight on the head. The disruption of Blood brain- barrier (BBB) was evaluated 6 h post- TBI. The neurologic score(VCS) and brain water content, the beam-walk –balance task (WB) were determined before trauma, on trauma time(D0), and 1 day(D1) and 2 Day (D2) and 3 Day (D3) After TBI anaesthetized animals were sacrificed and the brain was removed and then analaysis MMP-9 with ELISA assay.

Results : Our results showed that traumatic brain injury led to significant brain edema and disrupt of blood brain- barrier and neurological defect and vestibulomotor dysfunction in the rat brain and increase MMP-9 in brain tissue. Levetiracetam (50,100mg/ kg) could attenuated brain edema, improved BBB and vestibulomotor dysfunction in compare with TBI control group (P<0.001) but in 100 dose results were better.

Conclusion : Based on these results, we believe that first: LEV has neuroprotective effects secondary; one mechanism of levetiracetam's neuroprotective effects is due to decrease in matrix metalloproteinase-9 enzyme levels in brain tissue.

Keywords : LEV; TBI; Neuroprotective; MMP-9, Rat

Count: 225
Abstract ID: 188
subject: Cognition: Learning and Memory
Presentation Type: Poster

Maternal separation impairs long term-potentiation in CA3-CA1 synapses in adolescent female rats

Submission Author: Arefe Heydari

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Background and Aim : Mother-infant interactions influence the development of physiology and behavior during the first weeks after birth. As an adverse early life experience, maternal separation (MS) produces behavioral and neuroendocrine functions disorders associated with the hippocampus. Considering the critical role of long-term potentiation (LTP) in learning and memory, we investigated whether MS affects LTP in adolescent female rats.

Methods : In this study, female rat pups were exposed to daily 3-h (MS180) or 15-min (MS15) periods of maternal separation on postnatal days (PND) 1–14 and control offspring remained with the dams all the time before weaning. Extracellular evoked field excitatory postsynaptic potentials (fEPSPs) were recorded in the stratum radiatum of the CA1 area of the slice at 28–35 days of age.

Results : Our results indicate that a significant difference existed in the magnitude of LTP between the control group and MS180 group, but the MS15 group was not different from control.

Conclusion : In conclusion, these findings suggest that MS may impair LTP induction in the CA1 area of the hippocampus in adolescent female rats.

Keywords : Maternal separation Learning and memory Hippocampus LTP

Count: 226
Abstract ID: 352
subject: Emotion, Motivation and Behavior: Stress and the Brain (Stress-modulated Pathways, Stress and Cognition, Stress Related Disorders)
Presentation Type: Poster

The Strength of Synaptic Plasticity and Social Rank

Submission Author: Soomaayeh Heysieattalab

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Background and Aim : Dominance hierarchy has a profound impact on societal function and individuals' life quality. Getting to the top of the social hierarchy is determined by personality traits such as grit, and social experience such as history of winning or losing. Social hierarchical status of the animal correlates with the synaptic strength in the medial prefrontal cortex (mPFC) neurons. MPFC-based neural circuitry also underlies the winner effect, where animals increase their chance of victory after repeated winning.

Methods : Furthermore, molecular manipulations that resulted in an increase and decrease in the synaptic efficacy in dorsal mPFC neurons caused an upward and downward movement in the social rank, respectively.

Results : Thus, social rank is plastic and can be tuned by altering synaptic strength in mPFC pyramidal cells.

Conclusion : Understanding the processes involved in the synaptic switch of social dominance hierarchies is crucial to improve our understanding of several psychosocial disorders. As we know left dorsolateral prefrontal cortex (dlPFC), one of the most stress-sensitive brain areas, is linked to neuropsychiatric disorders. One potential productive avenue for future research is that using electrical or magnetic stimulation of the mPFC in the context of tasks engaging learning social hierarchy mechanisms can improve neuropsychiatric disorders such as social anxiety or depression.

Keywords : Social Rank ;medial prefrontal cortex ; Synaptic Plasticity

Count: 227
Abstract ID: 206
subject: Neural Injuries and Neurodegenerative Disorders: Neurotoxicity, Neuroprotection, Inflammation
Presentation Type: Poster

Alterations in COMT gene expression in the spinal cord of male rats during buprenorphine treatment in methamphetamine-induced addiction

Submission Author: Fereshteh Hoseini

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Background and Aim : Substance abuse is a universal health and social problem. Amphetamine (AMPH) exerts its rewarding and reinforcing effects by elevating extracellular dopamine which plays an important role in drug reward. The critical mechanism to control the levels of synaptic dopamine is the degradation of dopamine by the enzyme Catechol- O-methyltransferase (COMT). The COMT is an important enzyme to metabolize catechol neurotransmitters such as dopamine and regulates the level of dopamine. Buprenorphine is a weak partial mu-opioid receptor agonist and a weak kappa-opioid receptor antagonist used for the treatment of severe pain. It is also commonly used as an alternative to methadone for the treatment of severe opioid addiction. The aim of this study was to investigate the alterations of COMT gene expression during methamphetamine-induced addiction and treatment with buprenorphine in the spinal cord of male rats.

Methods : 84 male Wistar rats were randomly assigned into 12 experimental groups (n=7): Control, Saline, Methamphetamine (10 mg/kg, i.p. for 5 days), buprenorphine (6, 10 mg/kg, i.p.), methamphetamine+ buprenorphine with 2 doses for 5 and 14 days and Spontaneous methamphetamine withdrawal syndrome (72 hour later). The lumbar section of spinal cord tissue was assayed for the expression of COMT gene using real time polymerase chain reaction method (RT- PCR).

Results : Chronic administration of methamphetamine increased the COMT gene expression in comparison to control group (p<0.001). Acute and chronic administration of buprenorphine increased the level of COMT in comparison to control group (p<0.01 and p<0.001 respectively). In Spontaneous methamphetamine withdrawal syndrome group, the level of COMT gene expression did not changed in comparison to control group, but in comparison to methamphetamine group decreased and approached to the level of control group.

Conclusion : The COMT enzyme is a major regulator of the synaptic dopamine levels and plays an important role in dopamine catabolism. It seems during amphetamine addiction because of increasing dopamine in synaptic cleft, the regulation of COMT gene expression is changed. May be this would be a compensatory mechanism for removal of excess dopamine.

Keywords : COMT, Methamphetamine, Buprenorphine

Count: 228
Abstract ID: 533
subject: Neuropsychiatry and Psychology: Mood Disorders
Presentation Type: Poster

The Predict of Alexithymia based on Coping Styles and Sense of Coherence in Pregnant women

Submission Author: Marzieh Hoseini

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Background and Aim : Psychological and emotional and hormonal changes during pregnancy lead to major problems in expressing emotions, such as alexithymia, also the aim of this study was to predict alexithymia based on coping styles and stress in pregnant women referred to Shahid Motahari hospital of Urmia city.

Methods : The research method is descriptive-correlation. A total of 150 women who referred to Shahid Motahari hospital during the first 6 months of the year 2019 were selected by voluntary sampling method. Data were analyzed using Pearson correlation coefficient as well as multiple regression.

Results : The results showed that there was a negative relationship between problem-oriented coping style ($p < 0.05$) and sense of coherence ($p < 0.01$) with alexithymia. There was a positive relationship between avoidance style and alexithymia ($p < 0.01$). also, there was no significant relationship between emotion-focused coping style and alexithymia ($p < 0.01$). finally, %27 of the variance of alexithymia was predicted based on coping styles and sense of cohesion.

Conclusion : Based on the results, it can be concluded that coping styles and sense of cohesion can be key components in decreasing the degree of alexithymia in pregnant women.

Keywords : Stress Coping styles, Sense of Coherence, Alexithymia

Count: 229
Abstract ID: 162
subject: Neurorehabilitation and Regeneration: Psycho-cognitive Rehabilitation
Presentation Type: Oral

Polyvagal Neurofeedback: the Effects of Corpulmonale Pathway by Heart Rate Variability Biofeedback Training on Sleep Quality

Submission Author: Mohammadjavad Hoseinpourfard

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Background and Aim : Background: Now a day, one of the most important social problem is the sleep disorder that more than about 40 percent of some population faced it. Biofeedback as a complementary method could reduce many of its impacts. Objective: The current study tried to show the effects of biofeedback on promotion the sleep quality and control its impacts.

Methods : Methods: The 30 patients with sleep disorder include 15 were considered for the intervention and the others as the control group volunteer candidate for this study. Pittsburgh Sleep Quality Index (PSQI) used as a standard tool of sleep quality measurement for both groups. Abdominal breathing via chest breathing trained as a biofeedback (BFB) training for invention group. Heart Rate Variability (HRV) measured before and after BFB training. Data was checked for outliers and normal distribution. Data analysis was realized with Stat sigma plot. Gender distribution of sample was 55% for male and 45% for female. The average of the age was 45 years.

Results : Results: Significant difference showed between two groups. Two-way ANOVA established a sleep quality promotion for invention group. In this research, variables such as the level of individual and family education, family income, and affective family environments, which can affect the dependent variables along with the experimental ones were not controlled, and this can be considered a limitation of the study.

Conclusion : Biofeedback training could be use as a complementary method in sleep disorder.

Keywords : Polyvagal Neurofeedback, Corpulmonale Pathway, Heart Rate Variability, Biofeedback Training, Insomnia, Sleep Quality.

Count: 230
Abstract ID: 499
subject: Pain and Sensory Systems: Tactile, Somatosensation and Pain Syndromes
Presentation Type: Poster

Evaluation of stereologic indices of sciatic nerve after administration of hydroalcoholic extract of propolis in oxaliplatin-treated rats.

Submission Author: Sara Hosseinchi

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Background and Aim : Oxaliplatine is one of the effective chemotherapy drugs widely used in the cancer treatment. One of the important side effects of oxaliplatine is neuropathic pain that reduces patients' life quality. Propolis is a byproduct of honeybee which has been used to treat various chronic painful conditions in many countries as a traditional remedy. The aim of this investigation was to evaluate the protective effects of hydroalcoholic extract of propolis on stereological quantifications of sciatic nerve following chemotherapy.

Methods : 24 male wistar rats were used for this study. The animals were divided into four groups (n=6/group). Oxaliplatin (2.4 mg/kg, I.P) injected 4 times per week for three weeks for treatment groups and oxaliplating group. Treatment groups involved one group with administration of propolis 50 mg/kg and other with dose of 100 mg/kg/day, (P.O). At the end of project, animals were euthanized and the sciatic nerve samples were collected for stereological quantifications. In stereological studies, total number of sciatic nerves, Fiber Area (µm2) and Fiber Diameter (µm) of sciatic nerve of rats were assessed.

Results : Injection of oxaliplatin caused severe structural changes in the sciatic nerve. Many of the myelinated nerve cells of treatment groups showed different stages of degeneration compared to the control group. In the rats treated with propolis, total number, Fiber Area (µm2) and Fiber Diameter (µm) significantly (P<0.05) decreased.

Conclusion : The stereological evaluations showed that propolis could have an inhibitory effect on nerve degeneration induced by oxaliplatin in a dose depended manner.

Keywords : Oxaliplatin; Pain; stereology

Count: 231
Abstract ID: 394
subject: Epilepsy, Neural Excitability, Synapses, and Glia: Gliology (Gliotransmission, Gliogenesis, Neuro-glia Cross Talk)
Presentation Type: Poster

β2-adrenergic receptor stimulation upregulate Cx43 expression in Glioblastoma multiforme

Submission Author: Saereh Hosseindoost

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Background and Aim : Glioblastoma multiforme (GBM) is an invasive astrocytic tumor in adults that despite the best available treatment approaches remains mainly incurable. One of the molecular transformations in GBM cells is the downregulation of Connexin43 (Cx43) expression and subsequently gap junction intercellular communication (GJIC). Since β2-adrenergic receptor stimulation could regulate Cx43 protein levels, we illuminate whether β2-adrenergic agonist may increase Cx43 expression in primary human GBM-derived astrocyte cells.

Methods : We first purified the astrocyte cells from human GBM tumor and then we investigated the effect of Clenbuterol hydrochloride as a selective β2-adrenergic agonist on the Cx43 expression in human GBM-derived astrocyte cells. The astrocyte cells exposed to ICI 118,551, as a selective β2-adrenergic antagonist, at concentrations of 0.1, 0.3 and 1 µg/ml as well as Clenbuterol hydrochloride at concentration of 10 µg/ml with or without the various concentrations of ICI 118,551 (0.1, 0.3 and 1 µg/ml) for 24 hours. The characterization of astrocytes were assessed by Immunocytochemistry. The cytotoxicity were evaluated by MTT assays and the Cx43 levels were measured with western blot analysis

Results : the immunocytochemistry results showed that approximately 93 % of cells expressed S100-β antigen.The MTT results showed cell viability of more than 95%. When the cells treated with Clenbuterol hydrochloride (10 µg/ml), the Cx43 protein level dramatically increased. Pretreatment of cells with ICI 118,551 at concentrations of 0.3 and 1 µg/ml for 45 min prevented the Clenbuterol hydrochloride effect on Cx43 upregulation. However, the concentrations of 0.1 µg/ml did not reverse this effect.

Conclusion : Our results suggest that Clenbuterol hydrochloride could upregulates the Cx43 level on primary human GBM derived astrocyte cells and this effect mediated with β2-adrenergic receptor.

Keywords : Glioblastoma multiforme, Connexin 43, β2-adrenergic receptor

Count: 232
Abstract ID: 60
subject: Cognition: Learning and Memory
Presentation Type: Poster

The effect of Thymus vulgaris on learning and memory and oxidative stress in the epileptic model of memory impairment in the rat

Submission Author: Abdolkarim Hosseini

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Background and Aim : Pentylenetetrazol (PTZ) is a chemical substance which largely used for induction of seizure and epilepsy in the animal model, and it can also, disrupts free radicals balance and causes oxidative stress in the body with a negative impact on memory and learning. In this study, the medicinal plant Thymus vulgaris, was used to evaluate its effect on oxidative stress and memory deficit caused by PTZ in the rat.

Methods : Twenty-four rats were randomly allocated to 4 groups: control negative under treatment with PTZ (sub-threshold dose 35 mg/kg for one month), control positive under treatment with Phenobarbital (PB-30 mg/kg), and two PTZ groups under treatment with T. vulgaris extract (TVE-50, and -100 mg/kg). Standard passive avoidance test was used to evaluate retention and recall (evaluation of memory and learning). After behavioral evaluation, rats were anesthetized, brains were removed, and following preparation of hippocampal homogenates, oxidative stress (malondialdehyde (MDA), catalase, superoxide dismutase (SOD)) was evaluated using specified kits. Data were analyzed using SPSS.

Results : Step-through latency in passive avoidance test in PTZ group receiving TVE at a dose of 100 mg/kg was greater than PTZ group. In addition, hippocampal lipid peroxidation (MDA level) in TVE-100 treated PTZ group was significantly lower and catalase activity and SOD level were significantly greater versus PTZ group.

Conclusion : Our results showed that TVE could prevent memory deficit and ameliorate hippocampal oxidative stress in PTZ-kindled rats.

Keywords : Thymus vulgaris; Epilepsy; Oxidative stress; Neuroinflammation; Learning and memory

Count: 233
Abstract ID: 150
subject: Neurorehabilitation and Regeneration: Physiotherapy
Presentation Type: Oral

Ischemic versus Hemorrhagic Stroke: Who Can Best Benefit from Gait and Balance Training?

Submission Author: Hossein Asghar Hosseini

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Background and Aim : There exists a high degree of variability among individuals with stroke which can be considered as a major source of bias of studies aiming to determine the effect of rehabilitation interventions. The rationale for investigating the influence of lesion etiology (ischemic, hemorrhagic) on motor performance in this study is based on the different pathophysiological mechanisms that could be expected to have consequences for rehabilitation outcomes.The aim of the current study was to compare gait and balance measures between ambulatory individuals with ischemic and hemorrhagic stroke who received a similar 6 weeks intervention including gait and balance re-education.

Methods : This study involved a cross-sectional, retrospective review of data from persons with stroke who underwent outpatient stroke rehabilitation. Fifty-six individuals with stroke were divided into two groups, according to their stroke lesion: an ischemic group (IG) (n = 37) and a hemorrhagic group (HG) (n = 19), as classified using MRI or CT. All subjects participated in a 6-week rehabilitation intervention including the re-education of gait and balance. The outcome measures were: quiet standing balance including weight bearing asymmetry (WBA), total anterior-posterior (AP) & medial-lateral (ML) center of pressure (COP) velocity, AP & ML COP velocity asymmetry, AP & ML Romberg quotient, AP & ML COP velocity during arm raise and also gait measures including gait velocity and spatiotemporal asymmetry measures (stance, swing time and step length asymmetry) which were recorded before and after intervention in the two groups. A repeated measure multivariate ANOVA was used to assess the effects of treatment. Multiple linear regression analysis was also performed to determine the association between lesion etiology (independent variables) and the difference between the baseline (t1) and after intervention (t2) measures for gait and balance (dependent variables). All regression models were adjusted for age and sex.

Results : After a six-week intervention, gait velocity increased significantly in the HG compared to the IG (P = .003). WBA, AP & ML COP velocity also decreased significantly in the HG compared to that with the IG (P = .005, .004, and .001, respectively). No significant difference was identified in other parameters between the two groups. Multiple linear regression analysis revealed that having suffered a hemorrhagic stroke was related to greater increased in gait velocity, and also greater decreased in WBA, and AP & ML COP velocity during standing after a six-week intervention (P < .05).

Conclusion : According to the current results, the improvement of some gait and balance measures after a rehabilitation intervention may be different in relation to the type of stroke lesion. Studies considering the lesion etiology might result in the recruitment of a more homogeneous sample. This factor could also be helpful in prescribing the best rehabilitation intervention to achieve gait and balance improvements.

Keywords : Gait, Balance, Neurology, Rehabilitation, Stroke

Count: 234
Abstract ID: 205
subject: Cognition: Cognitive Aging
Presentation Type: Poster

Nicotinamide mononucleotide attenuates cognitive impairment and improves mitochondrial function in the prefrontal cortex and hippocampus in aged rats

Submission Author: Leila Hosseini

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Background and Aim : Given the fact that nicotinamide mononucleotide (NMN) acts as a pleiotropic agent in various age-related cognitive disorders, we aimed to investigate the effect of NMN on the cognitive outcomes and mitochondrial function in aged rats.

Methods : Twenty old and ten young (24 and 3 months old, respectively) male Wistar rats were randomly allocated into three groups: Young+Normal saline (NS), Aged+NS, and Aged+NMN. NMN (100 mg/kg) was administered for 28 every other day in aged animals. We evaluated spatial memory and recognition with Barnes maze and novel object recognition tests. Alterations in mitochondrial function including reactive oxygen species (ROS) and ATP levels as well as mitochondrial membrane potential were assessed in both prefrontal cortex (PFC) and hippocampus (HIP) regions.

Results : Behavioral results revealed that NMN treatment alleviated aging-induced memory impairment and diminished mitochondrial dysfunction both in PFC and HIP regions.

Conclusion : Our results indicated that NMN treatment could induce neuroprotective effects and improve learning and memory in aged animals.

Keywords : Aging; Nicotinamide mononucleotide; Learning and Memory; Mitochondrial dysfunction

Count: 235
Abstract ID: 405
subject: Neural Injuries and Neurodegenerative Disorders: Dementia
Presentation Type: Poster

The effects of thymoquinone on lipopolysaccharide induced learning and memory impairments, hippocampal cytokine level and brain tissues oxidative damage in rats

Submission Author: Mahmoud Hosseini

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Background and Aim : In this study, the effects of thymoquinone (TQ) on lipopolysaccharide (LPS) - induced learning and memory impairments, hippocampal cytokine level and brain tissues oxidative damage was investigated in rats

Methods : The rats were divided into five groups and treated: (1) Control (saline), (2) LPS (1 mg/kg i.p.), (3-5) 2, 5 or 10 mg/kg TQ extract 30 min before LPS injection. The treatment was started since two weeks before the behavioral experiments and continued during the behavioral tests (LPS injected 2 h before each behavioral experiment). Finally, the brains were removed for biochemical assessments.

Results : In Morris water maze (MWM) test, LPS increased escape latency compared to control group whereas TQ decreased them compared to LPS group. In passive avoidance (PA) test, the latency to enter the dark compartment in LPS group was shorter than control group while, in TQ treated groups it was longer than LPS group. LPS increased interleukin-6 (IL-6), tumor necrosis alpha (TNF-α) in the hippocampal tissues, and also increased malondialdehyde (MDA) and nitric oxide (NO) metabolites and decreased thiol content, superoxide dismutase (SOD) and catalase (CAT) in both hippocampal and cortical tissues compared to the control group while, TQ decreased IL-6, TNF-α, MDA and NO metabolites and increased thiol content, SOD and CAT compared to LPS group.

Conclusion : Findings of current study indicated that TQ improved LPS-induced learning and memory impairments induced by LPS in rats by attenuating the hippocampal cytokine levels and brain tissues oxidative damage.

Keywords : Lipopolysaccharide, Thymoquinone, Memory, Oxidative damage, Cytokine

Count: 236
Abstract ID: 299
subject: Neural Injuries and Neurodegenerative Disorders: Neurodegenerative Disorders
Presentation Type: Poster

The effects of cholinergic hypofunction on hippocampal corticosterone and BDNF in rats

Submission Author: Nasrin Hosseini

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Background and Aim : The evidence linking between stress and Alzheimer's disease is growing. Some evidence implies that stress might be contribute to neurodegeneration by counteracting the brain-derived neurotrophic factor (BDNF). The present study was designed to investigate the NBM lesion effects on hippocampal corticosterone and BDNF levels and the correlations of them in rats

Methods : For this purpose, eighteen male Wistar rats were randomly assigned to control, sham, and NBM-lesion groups. Lesion was induced by bilateral ibotenic acid injections (5 µg/µl in each side) and BDNF and corticoestron levels in the hippocampus were measured 21 days after the injections

Results : Results showed that BDNF concentration decreased whereas corticosterone level increased in the hippocampus, showing the significant and negative correlations of the hippocampal BDNF levels with correlations level after neurodegeneration in NBM lesion rats.

Conclusion : The negative correlation between hippocampal corticosterone and BDNF following NBM-lesion suggests that these factors might play roles in cognitive dysfunction in cholinergic dysfunction; hence, they merit investigation and consideration for designing improved cognition.

Keywords : Nucleus Basalis Magnocellularis, Hippocampus, Corticosterone, BDNF

Oral & Poster Presentations

8th Basic and Clinical Neuroscience Congress
December 18-20, 2019
Razi Hall, Tehran, Iran

Iran University of Medical Sciences

Iranian Neuroscience Society

Count: 237
Abstract ID: 331
subject: Computational Neuroscience: Network Models
Presentation Type: Oral

Investigating the brain functional connectivity changes in subjects with post-traumatic olfactory disorder before and after low-power laser irradiation using fMRI

Submission Author: Seyede Fahime Hosseini

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Background and Aim : Smell disorders have a strong effect on different aspects of life and must be taken seriously. Following head trauma in patients with post-traumatic olfactory disorder, the cribriform plate of ethmoid bone may undergo fibrotic healing, resulting in smell senses disability. Low-level laser therapy (LLLT) can be a therapeutic method in order to remove the fibrosis tissue and recover the smell function. In this study we investigated patients with post-traumatic olfactory disorder before and after low-level laser irradiation using fMRI. The results showed differences between pre and post LLLT in olfactory-related regions functional network.

Methods : 16 patients with post-traumatic olfactory disorder confirmed with Sniffin' Sticks test, were divided into three groups; a control group with 8 subjects and two experimantal groups with 4 subjects each. Laser irradiation with different durations, 10 and 20 minutes, 8 sessions each, were conducted to the experimental groups. All subjects underwent two fMRI sessions with time interval of 75 days. The time interval was chosen according to the treatment periods of two experimental groups. The fMRI task was a block design containing two odors, Vanillin and Rose, which were presented by the help of an home-made olfactometer. Analysis of functional images was done using FSL software and CONN toolbox.

Results : Activation was found significantly in laser II group after LLLT in the right fusiform and corpus callosom, as well as sub-gyral, right parahippocampus, medial frontal, middle temporal gyrus and right cerebellum in response to Vanillin and Rose, repectively. Activation was also found in control subjects in the postcentral and anterior cingulate gyrus, after the time period. There was no significant activation in laser I group after treatment. Positive correlation was seen between IFG and thalamus toward piriform cortex in both laser groups. After LLLT, both groups manifested great modifications in functional connections between olfactory areas. IFG, orbitofrontal and parahippocampal cortex were mainly involved in functional connectivity network compared with pre-scan images.

Conclusion : Our results support the hypothesis that low-level laser might have a positive effect on axon regeneration in olfactory epithelium and create new connections between olfactory nerves, in terms of changes in functional connectivity. Specially, at higher irradiation times, more promising effects could be observed.

Keywords : Olfactory disorder, Trauma, Low-level laser, Functional connectivity, fMRI

Count: 238
Abstract ID: 568
subject: Neural Injuries and Neurodegenerative Disorders: Neurodegenerative Disorders
Presentation Type: Poster

Investigating learning deficits in MPTP monkey models of Parkinson's disease using a cage-based training system

Submission Author: Nadia Hosseinizaveh

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Background and Aim : Parkinson's Disease (PD), is a progressive neurodegenerative disorder affecting more than 1% of the population above 60 years of age. Patients with PD suffer from a range of motor difficulties coupled with cognitive deficits. A reliable Non-Human Primate model of PD can help us in finding the neural mechanisms of these deficits. MPTP monkey model of PD, as the most dominant model, can reliably reproduce motor symptoms of PD. However, the reliability of this model in terms of cognitive deficits is not well-studied with a systematic method. In this study, we aim to characterize learning deficiencies in MPTP monkey models of PD using a cage-based training system where monkeys are not forced to do the required task in physically restrained conditions and in a specific time duration predetermined by the experimenter.

Methods : In order to invasively engage monkeys with PD in our experiments, we designed a cage-based training system, in which the stimuli were presented on a touch-screen monitor, easily accessible to them. In this method, monkeys are free in their cages and are not under any physical pressure for doing the task. Next, we designed three experiments: a) guided-touch task with variable stimulus size, in which the stimulus size gets smaller over the block of trials, as the monkey's touch accuracy reaches 85% correct, b) guided-touch with constant stimulus size, in which the stimulus size remains constant over the block of trials, however the position of the stimulus is randomly changing between two locations, and c) two-armed bandit task, in which two stimuli are simultaneously presented on the screen. Choosing one stimulus is always followed by receiving a certain amount of reward, while the other stimulus is not associated with a reward. Monkeys were trained to report their decision by touching the stimulus presented on the screen. In return for each correct response, a certain amount of liquid reward was delivered via an auto-delivery reward system.

Results : Our cage-based training system was successful in motivating monkeys to freely engage in doing the tasks. Although slowly, MPTP models of PD could reach an acceptable range of accuracy in the first two experiments, where there was only one target presented on the screen. However, they were unable to achieve accuracy significantly above chance in the third experiment where they had to choose between the two alternatives.

Conclusion : We showed that in a two-armed bandit task, MPTP models of PD are not capable of being as accurate as they are in a one-target task, in spite of having the same amount of training. These results do not necessarily suggest the inability of MPTP models of PD in performing two-armed bandit tasks since further investigation is required to show whether extensive training can affect the learning procedure in these tasks. In addition, we believe that our suggested cage-based training system is a reliable method to study the cognitive abilities of MPTP models because of their freedom in deciding to engage in the task.

Keywords : Parkinson's Disease; Reinforcement Learning; MPTP monkey models of PD; Cage-based training

Count: 239
Abstract ID: 547
subject: Emotion, Motivation and Behavior: Motivation and Emotion
Presentation Type: Poster

The Effectiveness of Acceptance and Commitment-Based Therapy (ACT) on Clinical Symptoms of Depression, Anxiety, and Stress in Spouses of Neurological Veterans

Submission Author: Elham Imani

Elham Imani[1]

1. PhD candidate in clinical psychology

Background and Aim : The purpose of this study was to determine the effectiveness of Acceptance and Commitment Therapy (ACT) on clinical symptoms of depression, anxiety and stress in the spouses of neurological veterans.

Methods : The research design was quasi-experimental with pretest-posttest with experimental and control group. The population consisted of all spouses of veterans with mental disorders in the second 6 months of 2018 in Mashhad were referred to counseling centers,Among them, 40 individuals were selected by convenience sampling and assigned to experimental and control groups. The instrument used in this study was Anxiety, Stress and Depression Inventory (DASS-21). Subjects in the experimental group received 90-60 minutes of commitment-based and acceptance-based treatment for 8 weeks each week and the control group did not receive any intervention. Data were analyzed using covariance statistical method.

Results : The mean scores of neuropsychiatric veterans' wives decreased after the pre-test for depression, anxiety, and stress.

Conclusion : The results showed that Acceptance and Commitment Therapy (ACT) had a significant effect on the clinical symptoms of depression, anxiety and stress in the spouses of neurological veterans.

Keywords : Acceptance and Commitment Based Treatment (ACT), Depression, Anxiety, Stress, and Psychiatric Veterans.

Count: 240
Abstract ID: 354
subject: Motor Systems
and Movement Disorders: Movement Disorders (Parkinson, Huntington's, ALS, Ataxia, edication-induced Movement Disorders)
Presentation Type: Oral

Time course study of protein disulfide isomerase activity, body weight and brain volume in the striatum of male rats in neurotoxic model of Huntington disease

Submission Author: Nazila Irani Pour

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Background and Aim : Huntington disease (HD) is a neurodegenerative disorder characterized by unwanted choreatic movements, behavioral disturbances and dementia. Evidences indicate that dysregulation of intracellular neuronal calcium signaling plays important role in HD. Disruption of calcium concentration within the endoplasmic reticulum activates transcriptional cascades and translates proteins involved in the calcium signaling pathway. Among these proteins, Protein Disulfide Isomerase (PDI) is a peptide that is present in the luminal membrane of the endoplasmic reticulum as chaperone, which integrates the endoplasmic reticulum and protects cell survival.

Methods : 3-nitropropionic acid (3-NP) injected to induce Huntington neurotoxic model. Adult male rats (250-300 g) were divided into six groups: control group and five groups that they received 3-NP (20 mg/kg ip) in 1,2,3,4 or 5 days (just once per day). At the end of treatment, brains removed and striatum of them were kept for enzyme test to assay PDI activity level. For detection of cell death coronal sections stained with Hematoxylin & Eosin and for measurement of brain volume brains were handled and cut macroscopically with brain matrix and razor into parallel sections. Slice thickness was 2 mm. Eventually Body weight measured every day. Data were analyzed using GraphPad Prism.

Results : The result of this study shows that PDI enzyme activity decreased significantly only by receiving 1 dose of 3-NP. The activity of enzyme showed a greater decrease on the second day compared to the first day. The activity of the enzyme decreased with increasing toxin intake (up to day 5). During days of injection by increasing dose of 3-NP, brain volume and body weight decreased. Furthermore, striatum neurons moved gradually toward cell death.

Conclusion : The results showed that five days of 3-NP injection led to decline of PDI activity. Also brain volume and body weight decreased and during these days striatum neurons moved gradually toward cell death.

Keywords : Huntington disease; PDI; Brain volume; Body weight; Cell death

Count: 241
Abstract ID: 548
subject: Emotion, Motivation and Behavior: Motivation and Emotion
Presentation Type: Poster

The Effectiveness of Cognitive Techniques on Life Expectancy and Self-efficacy in Patients with MS

Submission Author: Alireza Islami

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Background and Aim : The most common complications of MS are symptoms of fatigue, muscle cramps, value, duplicity, imbalances and walking disorders. The purpose of this study was to evaluate the effectiveness of cognitive techniques on life expectancy and self-efficacy in patients with MS.

Methods : The research design was quasi-experimental with pretest-posttest with experimental and control group. The population consisted of patients with multiple sclerosis spiritual Babylon in the hospital in the first quarter of 2018 were referred.Thirty people were selected by convenience sampling and divided into experimental and control groups. The instrument used in this study was Schneider Hope Questionnaire, Scherrer Self-Efficacy Scale. Subjects in the experimental group received cognitive techniques for 6 sessions per week for one hour and the control group did not receive any intervention. Data were analyzed using covariance statistical method.

Results : The mean of life expectancy and self-efficacy scores in post-test MS patients increased compared to pre-test.

Conclusion : The results showed that the effectiveness of cognitive techniques on life expectancy and self-efficacy in patients with MS.

Keywords : Cognitive techniques, life expectancy, self-efficacy, MS patients.

Count: 242
Abstract ID: 250
subject: Integrative system: Brain Immune System and Brain Tumors
Presentation Type: Poster

Plasma long noncoding RNA MEG3 protected by exosomes as a non-invasive biomarker for diagnosis and patients survival in high-grade gliomas

Submission Author: Maryam Izadpanahi

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Background and Aim : Gliomas are the most common malignant primary intracranial tumors of the central nervous system. Despite significant efforts that have gone into glioma research in recent years, the therapeutic efficacy of available treatment options is still limited. Therefore, the non-invasive biomarker with high sensitivity and specificity is required. More and more studies suggest non-coding RNAs to be promising diagnostic biomarkers and therapeutic targets in many cancers, including Glioblastoma. One of the largest groups of these biomarkers is long non-coding RNAs (lncRNAs). MEG3 expression is under epigenetic control Maternally Expressed Gene 3 (MEG3) located at 14q32. This region is the host, two long intergenic RNAs(the MEG3 and MEG8) and one of the largest microRNA clusters in the genome, with 53 miRNAs. Also, miRNAs are involved in the regulation of MEG3 gene expression. Interestingly, the lncRNA MEG3(lnc-MEG3), as a ceRNA affects various cellular processes such as proliferation, apoptosis, and angiogenesis by sponging miRNAs.This experimental evidence for the first time suggests that MEG3 as a long noncoding RNA is controlled by miR-210 a sponging miRNAs and it is a molecular biomarker for glioma.

Methods : The expression levels of MEG3 and miR-210 were detected in 25 patients with high-grade glioma (GBM=25) and 15 head trauma patients, as non-glioma control from March 2017 to June 2018 in the Department of Neurosurgery at Rasoul-e-Akram Hospital by NGS and Real-Time PCR using LNA primer. Moreover, to investigate the prognostic significance of MEG3 in glioma, the Kaplan–Meier method was employed to analyze the association between MEG3 expression level and overall survival rates in GBM patients

Results : Twenty microRNAs were differentially expressed in plasma exosomes from glioblastoma patients relative to trauma. The plasma expression of miR-210 as an oncogenic miR was upregulated in GBM patients compared to trauma controls. This results showed that MEG3 expression was significantly downregulated in glioma patients. Furthermore, for the first time, these findings proved that meg3 expression downregulated and mir-210 upregulated were associated with poor survival in GBM patients

Conclusion : These findings indicated a critical role of MEG3 in glioma patients. Furthermore, suggests that plasma exosomal non-coding RNA have potential use as novel biomarkers in GBM patients and it might provide a new target for prognosis and therapeutic intervention in glioma. Furthermore, the present study identified that noncoding RNA plays a vital role in regulating gene expression at the posttranscriptional level and controlling GBM tumoral fate cells in patients. Thus, this research revealed that circulating microRNA can be potentially used as novel biomarkers in the clinical management of glioma patients.

Keywords : long noncoding RNA ,MEG3, microRNAs, GBM

Count: 243
Abstract ID: 565
subject: Computational Neuroscience: Network Models
Presentation Type: Poster

Reduced small-world but hyper connected in cocaine users: A resting state fMRI study

Submission Author: Sara Jafakesh

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Background and Aim : The changes in functional connections between brain networks in cocaine users may be related to cognitive and behavioral disruptions. As potential circuit level biomarkers of cocaine dependence, the alterations in functional connectivity strength may be used in treatment development outcome. Overall, models of cocaine addiction emphasize the role of disrupted frontal circuitry supporting cognitive control processes. In cocaine addicts, prefrontal and cingulate cortices, inferior frontal regions and cerebellum have shown hyper activation during response inhibition. In the past decade, resting state functional MRI (rsfMRI) connectivity analysis using graph metrics has been widely used to assess functional interactions between large-scale brain networks. A central goal of this study is to identify possible disruptions in interactions between resting-state networks in cocaine-dependent using graph theory. We hypothesize that alterations in interactions between large-scale brain networks in cocaine-dependents, will be significantly different from those observed in healthy subjects.

Methods : The rsfMRI data were collected from 18 cocaine-dependent participants (age: 34.8 ± 8.7) in the NYU institute for Pediatric Neuroscience and 18 age-matched controls (age: 34.4 ± 8.9) from NewYork_a dataset of 1000 functional connectome. MPRAGE structural scans were processed using automated algorithms FreeSurfer version 6 software package. Data were preprocessed using FS-FAST (http://surfer.nmr.mgh.harvard.edu), includes slice-timing correction, head-motion correction, spatial smoothing, intensity normalization, registration to annatomical, normalization to common space, removal four first time points, fit trend with polynomial of order 2, Temporal filtering (0.009 to 0.1 HZ), removal CSF/white matter signals and six head motion parameters. We used Desikan atlas with 68 parcels and Pearson correlation coefficients to calculate resting state Functional Connectivity matrix (rsFC) for each subject separately. Then the group average rsFC matrix were converted into binary one using a fix density threshold from 0% to 50% with step one. The resulting binary matrix was used to build an undirected graph model of the brain network. Global graph metrics including clustering, local efficiency and small-worldness were calculated to investigate functional integration. Degree was calculated as functional segregation. Graph parameters were obtained using braph software (http://braph.org). We compared two groups with statistical hypothesis test (ttest).

Results : Among 68 brain subdivisions, after controlling the resultant network density, local efficiency, clustering and small-worldness decreased in cocaine uses(CU) compared to control(CTL). Degree,

reduced in frontal regions of CU, however inferior parietal, posterior cingulate, anterior cingulate and insula regions, showed stronger degree among CU than CTL.

Conclusion : The increased degree strength in cocaine users' brain may suggests an elevated dynamic resting state in addicted brain. The reduced local efficiency and reduced small-worldness suggest a loss of normal inter-regional communications that may underlie the loss of cognitive control and inhibition in drug addiction.

Keywords : Cocaine addiction, resting state fMRI, functional connectivity, graph theory

Count: 244
Abstract ID: 646
subject: Cognition: Learning and Memory
Presentation Type: Poster

Evaluation of trapezius in the treatment of pre-school children with neurodevelopmental disorder (Attention Deficit Disorder)

Submission Author: Farah Jafari

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Background and Aim : Developmental neuropsychiatric disorders, including attention deficit / hyperactivity disorder (ADHD), are the most common neurodegenerative disorder in childhood that results in impaired academic, social, and family life. The purpose of this study was to investigate trapezoidal dysregulation in preschool-aged children with neurodevelopmental disorder (Attention Deficit Disorder).

Methods : This is a quasi-experimental study with pre- and post-test. For this purpose, 20 preschool students (in 2 kindergartens in district 2 of Tehran) who received the highest scores in the Conners Parent Questionnaire were randomly assigned into two experimental (n = 10) and control (n = 10) groups. The experimental group received trapley (sand play) during ten sessions (two sessions a week, each session averaging 30 minutes). Children's intelligence in both groups was measured at the beginning and end of treatment sessions using Wechsler Intelligence Questionnaire.

Results : Analysis of covariance was performed using SPSS software. The results showed a significant difference between the mean scores of pre-test (12/13) and post-test (36.27) intelligence ($p < 0.001$; $F = 3.111$) in pre-school students before and after group counseling.

Conclusion : The results showed that the effect of trapezoidal methods on persistence and change of attention during multiple targeted stages, methods based on the control of unwanted eye movements, cognitive-behavioral intervention-based methods, and chase-based methods. Ocular focus, focus on play, and hands on play indicate improvement in attention deficit disorder in children with this disorder. These practices lead to improved child attention by increasing eye-hand coordination, increasing comprehension of detail and accuracy, increasing eye tracking and avoiding excessive eye movement. Therefore, trapezium can be used as one of the therapeutic interventions to reduce the concentration problems of children with neurodevelopmental disorder (attention deficit disorder).

Keywords : TRAPLE (sand play), decentralization disorder, neurodevelopmental disorder (attention deficit disorder)

Count: 245
Abstract ID: 661
subject: Epilepsy, Neural Excitability, Synapses, and Glia: Channels, Receptors, Transporters,
Presentation Type: Oral

Regulatory effect of GABA Receptors on laterodorsal thalamic nuclei activity and Spike-Wave Discharges in animal model 0f absence epilepsy WAG/Rij Rats

Submission Author: Maryam Jafarian

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Background and Aim : Childhood Absence Epilepsy is an idiopathic generalized epilepsy. Generally, it's associated with the loss of consciousness and arrest behavior in child. This condition often improves with age. The researchers found that teens who have experienced these attacks in childhood, suffering from psychosocial problems in adulthood. Both human and experimental evidence forcefully defends the view of brain region-specific changes in phasic and tonic GABA inhibition in typical absence seizures. This study focuses on the developmental changes of GABA receptors expression and distributions in the laterodorsal nucleus of thalamus and somatosensory cortex in animal model of absence epilepsy.

Methods : Experimental groups were divided into four groups of six rats of both WAG/Rij and Wistar strains with 2 and 6 months of age. GABA expression levels of different genes that are involved in the creation of the disease, and distribution of these receptor in the somatosensory cortex and the laterodorsal nucleus of the thalamus were evaluated. Furthermore, neuronal activity changes in the laterodorsal nucleus of the thalamus and somatosensory cortex were monitored with a single unit recording and ECoG technique, simultaneously.

Results : Results: data showed gene expression levels of G-aGama2 in the laterodorsal thalamus in four groups were not significantly different. G-aGama2 in six months WAG / Rij was much higher than other groups. The expression of all genes in somatosensory cortex into two groups of two and six months WAG/Rij is significantly less than six and two months' old wistar groups. Receptor distribution G-aGama2 and in the cortex of six months WAG / Rij to be considerably less than in groups of two and six months old wistar, but there is not any different with two months WAG/Rij. Explosive discharge of laterodorsal nucleus neurons with correlated SWDs in the cortex, show activity which precedes the spike component of the SWDs. microiontophoretic application of the GABAA and GABAB receptor antagonist (respectively bicuculline and CGP 35348) in the LDN due to both an increased neuronal activity in the laterodorsal nucleus neurons

Conclusion : Changes in the characteristic of the GABA receptors alter the thalamocortical network features and then causes SWDs.

Keywords : ansence epilepsy,GABAreceptors, thalamus

Count: 246
Abstract ID: 19
subject: Cognition: Learning and Memory
Presentation Type: Oral

Cross state-dependency of learning between 5-HT1A and/or 5-HT7 receptor agonists and muscimol in the mouse dorsal hippocampus

Submission Author: Majid JafariSabet

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Background and Aim : Dysfunction of the serotonergic and GABAergic systems in cognitive disorders has been revealed. Understanding the neurobiological mechanisms of drug-associated learning and memory formation may help treatment of cognitive disorders. The aim of the present study was to investigate: 1) 8-OH-DPAT (5-HT1A agonist), AS19 (5-HT7 agonist) and muscimol (GABA-A agonist) on memory retrieval and state of memory, 2) cross state-dependent learning between 8-OH-DPAT and/or AS19 and muscimol.

Methods : The dorsal hippocampal CA1 regions of adult male NMRI mice were bilaterally cannulated, and all drugs were microinjected into the intended sites of injection. A single-trial step-down inhibitory avoidance task was used for the evaluation of memory retrieval and state of memory.

Results : Post-training and/or pre-test 8-OH-DPAT, AS19 and muscimol induced amnesia. Pre-test microinjection of the same doses of 8-OH-DPAT, AS19 and muscimol reversed the post-training 8-OH-DPAT-, AS19- and muscimol-induced amnesia, respectively. This event has been named state-dependent learning (SDL). The amnesia induced by 8-OH-DPAT was reversed by muscimol and induced 8-OH-DPAT SDL. The amnesia induced by muscimol was reversed by 8-OH-DPAT and induced muscimol SDL. The amnesia induced by AS19 was reversed by muscimol and induced AS19 SDL. The amnesia induced by muscimol was reversed by AS19 and induced muscimol SDL. Pre-test administration of a selective GABA-A receptor antagonist, bicuculline, 5 min before muscimol, 8-OH-DPAT and AS19 dose-dependently inhibited muscimol-, 8-OH-DPAT- and AS19-induced SDL, respectively.

Conclusion : The results strongly revealed a cross SDL among 8-OH-DPAT and/or AS19 and muscimol in the dorsal hippocampal CA1 regions.

Keywords : 8-OH-DPAT, AS19, muscimol, bicuculline, state-dependent learning, dorsal hippocampus

Count: 247
Abstract ID: 8
subject: Emotion, Motivation and Behavior: Motivation and Emotion
Presentation Type: Poster

Investigation of Cognitive Emotional Regulation and Problem-Solving Strategies in Substance Abusers Subjects

Submission Author: Vahid Jafarnia

Vahid Jafarnia[1]

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Background and Aim : Introduction: Many studies evaluated Addiction and Substance abuse treatment programs. But few studies have investigated problem solving strategies and cognitive emotion regulation in addicted patients.

Methods : This was a causal-comparative (ex post facto) research that evaluated using cognitive emotion regulation and Problem-Solving Strategies questionnaires. Patients (n=30) and normal subjects (n=30) selected with available sampling method. Data analysis was performed using independent t-test and descriptive indicators.

Results : These results showed that drug-dependent individuals had poorer cognitive emotion regulation and Problem solving strategies than normal subjects.

Conclusion : Substance abuse individuals have shown deficits in cognitive emotion regulation and efficient Problem-Solving Strategies while this deficits have not seen in group normal individuals that may provide valuable additional tools for preventative and clinical treatment of substance abuse patients.

Keywords : addiction, cognitive emotion regulation, problem solving Strategies

Count: 248
Abstract ID: 9
subject: Cognition: Executive Function (Decision Making, Reasoning, Problem Solving)
Presentation Type: Poster

Investigation the Effectiveness of Buprenorphine and Methadone Maintenance treatments on Cognitive function

Submission Author: Vahid Jafarnia

Vahid Jafarnia[1]

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Background and Aim : : Investigation the effectiveness of methadone and buprenorphine on executive functioning and emotion regulation in addicted individuals was our main objective in this study.

Methods : This is a causal-comparative study which was conducted on 60 individuals; into two groups of 30 patients (methadone and buprenorphine). Available sampling with the use of Barkley Deficits in Executive Functioning Scale (2011) and Garnofsky's Emotion Regulation Questionnaire (2001) was the design which was utilized in this study.

Results : The overall mean scores of methadone group was higher than buprenorphine group. The results of independent t-test in executive function was; t (58) =-5/389, p=0/00 and in emotion regulation was; t (58) =-2/805, p=0/07, were significant.

Conclusion : : Our results were indicative of better effectiveness of buprenorphine on in executive functioning and emotion regulation in addicted individuals.

Keywords : Addiction, Executive Functioning, Emotion Regulation

Count: 249
Abstract ID: 406
subject: Development: Neurogenesis and Gliogenesis
Presentation Type: Poster

Investigation of expression of miR-134 in differentiation of Amniotic Membrane-derived Mesenchymal Cells to Neural-like cells

Submission Author: Zeinab Jahanbakhsh

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Background and Aim : Amniotic membrane mesenchymal stem cells (MSCs) are pluripotential mesenchymal stem cells that differentiate from different tissues. Mesenchymal stem cells obtained from amniotic membrane are valuable and easy to access which do not need to surgery. They can also be differentiation to any type of cells such as osteocyte, adipocyte, and neural cells. Amniotic membrane is the area of placenta which originates from extraembryonic tissues. Amniotic membrane mesenchymal stem cells have self-renewal, angiogenesis, differentiation, and flexibility features and we can differentiate these cells into neural cells and use to treat diseases and neural disorders. miRs have an important role in differentiation of neural cells and increase in neural cells, one of which is miR-134 that we investigated in this study.

Methods : In this study, we derived mesenchymal stem cells from human amniotic membrane; to confirm their mesenchymal feature, surface markers of mesenchymal stem cells were determined by flowcytometry. In order to examine their ability to be differentiate, the mesenchymal stem cells differentiate into osteocyte and adipocyte lineages. Then, they differentiate to neural-like cells by adding the neural differentiation environment containing bFGF, EGF, butyric acid, Indomethacin, Ascorbic acid and their features were investigated. After extraction of RNA and cDNA synthesis, the expression of miR-134 was determined by the Real Time PCR technique.

Results : Through analysis of flow cytometry was specified that CD90,44,105 markers are positive while CD34,45 markers were negative. The accumulation of adipocyte vesicles in cells which were exposed to adipocyte medium is the indicator of their differentiation to adipocyte cells. Also, cells had showed calcium deposits when they were placed in osteocyte medium. after treating the amniotic membrane mesenchymal stem cells with the neural differentiation environment, we observed change in the morphology of mesenchymal stem cells which were differentiated to neural-like cells. The level of miR-134 expression in neural-like mesenchymal stem cells increased 15 time more than witness cells.

Conclusion : The study of neural-like cells is very important. Therefore, according to the results, it seems that using the differentiation cocktail amniotic membrane mesenchymal stem cells were differentiate into neural- like cells, which can be applied in treatment of neurological diseases and disorders such as Alzheimer, Huntington, Parkinson and the stroke in future.

Keywords : mesenchymal stem cells; differentiation; neural- like cells; amniotic membrane; miR-134

Count: 250
Abstract ID: 528
subject: Emotion, Motivation
and Behavior: Motivation and Emotion
Presentation Type: Oral

Comparison of short-term and long-term memory in Crystal addicts, addicts and healthy people in Sirjan addiction treatment centers

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Background and Aim : Drug use and its unpleasant side effects are one of the most important intellectual concerns and one of the major concerns. The most unfortunate social trauma of the present era is. Addiction as a social crisis and phenomenon Malevolent and house-burning, leading to many deaths and deaths worldwide Addiction is a physical, mental, social and spiritual illness and is a serious injury Substance abuse is a brain injury. The main purpose of this study was to compare short and long term memory in methamphetamine addicts, abandoned addicts and healthy individuals.

Methods : The research method is descriptive causal-comparative. The statistical population of the present study was divided into three categories The community of addicts is a community of drug addicts and the community of healthy people, among whom 30 are addicts, 28 are addicts and 30 are non-addicts. Data were collected using Memory Questionnaire (PRMQ). Multivariate analysis of variance (MANOVA) and Tukey post hoc tests were used for statistical analysis.

Results : The results showed that there is a significant difference between the mean of addicts, abandoned addicts and normal people in long-term memory performance. But there is no significant difference in short-term memory performance (P<0.05). The results of the Tukey post hoc test also showed that the mean of long-term memory in addicts is higher than in addicts and normal people.

Conclusion : Therefore, increasing the duration of addiction makes it more difficult for long-term memory to be lost and thus more difficult to quit

Keywords : Short term memory, Long term memory, Crystal, Addict, Abandoned addict, Healthy people.

Count: 251
Abstract ID: 388
subject: Neural Injuries and Neurodegenerative Disorders: Other
Presentation Type: Poster

Effect of Acellular Nerve Xenograft in a Rat Sciatic Nerve Injury Model

Submission Author: Zohreh Jahromi dastjerdi

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Background and Aim : Peripheral nerve injuries (PNIs) affect a large proportion of the global population, often causing significant morbidity and loss of function. The current "gold" standard for the treatment of PNI is the autograft, which poses some disadvantages. Allografts have therefore become a valid alternative option. In particular, acellular nerve allografts (ANAs) rather than fresh allografts do not need immunosuppression and appear to be safe and effective based on recent studies. However, the source of the allogeneic donor is restricted in clinical treatment. To explore sufficient substitutes for acellular nerve allografts (ANA), we investigated the effectiveness of acellular nerve xenografts (ANX) on repairing PNIs. On the other hand, no standard chemical decellularization method that is widely accepted exists to date. The objective of this study was to propose a modified chemical protocol of nerve decellularization.

Methods : The acellular nerves derived from bovine were prepared by the modified protocol. After decellularization, efficiency of protocol was tested in vitro by conventional staining, immunohistochemistry, and biochemical assays. Furthermore, a pilot in vivo study was performed; all the grafts were employed to bridge 7 mm rat sciatic nerve gaps. After eight weeks of transplantation, electrophysiological and functional tests were performed and the regenerated nerves were assayed morphologically.

Results : The decellularization method proved to be effective in vitro; the treatment removed axons, myelin, and cells, without altering nerve architecture. The in vivo study did not reveal any adverse effects. The functional analysis showed no statistical differences after 8 weeks in the sciatic functional index (SFI) in the autograft group, compared to the xenograft.The morphological analysis showed regenerated fascicles and bundles, and Schwann cells in xenograft were comparable with the autograft.

Conclusion : Based on these results, this decellularization protocol offers a reliable and encouraging approach for repairing peripheral nerve defects and deserves deeper investigations with further preclinical and clinical studies.

Keywords : sciatic nerve, bovine, detergent, Rat, xenograft, acellular scaffold

Count: 252
Abstract ID: 389
subject: Neural Injuries and Neurodegenerative Disorders: Neurotoxicity, Neuroprotection, Inflammation
Presentation Type: Poster

Investigation of Cinnamaldehyde effect on Functional Recovery after Sciatic Nerve Crush Injury in Rats

Submission Author: Zohreh Jahromi dastjerdi

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Background and Aim : Peripheral nerves injury is a common problem in the clinic. These injuries are caused by various factors such as trauma, tumor, and damage during treatment. These events cause chemical and inflammatory changes at the site of injury that lead to more degeneration in the nerve. Therefore, reducing these changes can lead to nerve protection after injury. In this study, we evaluated whether Cinnamaldehyde (Cin) administration can enhance the nerve regeneration process and improve functional outcome after sciatic nerve crush in rats.

Methods : 48 rats were divided into six groups including Sham, Injury, DMSO (vehicle group), and Cin (10, 30 and 90 mg/kg) groups. Crush injury in left sciatic nerve was induced by a small haemostatic forceps. Then, Cin was administered for 28 consecutive days after induction of crush injury. Sciatic functional index (SFI) was recorded weekly. Electrophysiological, histomorphometric evaluations, Gastrocnemius muscle wet weight and Serum Total oxidant status were assessed.

Results : Our data showed that Cin accelerated regeneration of sciatic nerve after crush injury ,and 30 mg/kg of Cin had better effect on SFI recover, muscle mass ratio, and myelin content. Inhibition of oxidative stress and inflammatory pathways, along with provocation of myelination and prevention of muscular atrophy might be involved in this effect of Cin.

Conclusion : In this study, we showed that the Cin have a positive effect in peripheral nerve regeneration. Cin treatment might be considered as a therapeutic agent for peripheral nerve regeneration and its functional recovery. However, more studies are required to determine the more appropriate dose for this purpose.

Keywords : Sciatic nerve, Cinnamaldehyde (Cin), Anti-oxidant, Anti-inflammation, Regeneration

Count: 253
Abstract ID: 207
subject: Neural Injuries and Neurodegenerative Disorders: Neurotoxicity, Neuroprotection, Inflammation
Presentation Type: Poster

Investigating the dopamine and monoamine oxidase gene expression during amphetamine addiction in male rats who were under treatment with buprenorphine

Submission Author: Nina Jajaei

Nina Jajaei[1], Jajaei Nina[2], Hatami Homeira[3], Khakpay Roghaieh[4], Khajehnasiri Nazli[5]

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Background and Aim : Amphetamine is an indirect dopamine agonist that promotes release of dopamine from vesicles and attenuates dopamine reuptake. Amphetamines are similar in structure to dopamine, and so can enter the presynaptic neuron via its dopamine transporters. By entering, amphetamines force dopamine molecules out of their storage vesicles. By increasing presence of dopamine both these lead to increased pleasurable feelings and addiction. Monoamine oxidases (MAO-A and MAO-B) are mitochondrial enzymes that oxidatively deaminate endogenous biogenic amine neurotransmitters such as dopamine, serotonin, norepinephrine, and epinephrine. Buprenorphine, a partial agonist at the mu opioid receptor, is licensed and widely used in many countries for the treatment of acute and chronic pain. Buprenorphine is also well established for the treatment of opioid dependence. The purpose of this study was to examine the acute and chronic effect of buprenorphine on the level of dopamine and MAO gene expression during methamphetamine-induced addiction in the spinal cord of male rats.

Methods : 84 male Wistar rats were randomly assigned into 12 experimental groups (n=7): Control, Saline, Methamphetamine (10 mg/kg, i.p. for 5 days), buprenorphine (6, 10 mg/kg, i.p.), methamphetamine+ buprenorphine with 2 doses for 5 and 14 days and Spontaneous methamphetamine withdrawal syndrome (72 hour later). The lumbar section of spinal cord tissue was assayed for the expression of dopamine and MAO gene using RT- PCR.

Results : Chronic administration of methamphetamine to control group increased the dopamine gene expression in comparison to control group (p<0.05). Acute administration of buprenorphine in both doses increased the level of dopamine (p<0.05). Chronic administration of buprenorphine did not have significant effect. In the spontaneous methamphetamine withdrawal syndrome group, the level of dopamine gene expression decreased in comparison to control and addicted group, but statically it was not significant. Also there was not any significant alteration in the level of MAO between groups.

Conclusion : The present work shows that methamphetamine toxicity increased the level of dopamine gene expression. Acute and chronic treatment of buprenorphine gently reduced this increase and tried to approach it to the control level. It seems the dose and the time course of methamphetamine and buprenorphine which are introduced in this study did not have enough potency to alter MAO gene expression.

Keywords : Dopamine, Monoamine Oxidase, Methamphetamine, Buprenorphine

Count: 254
Abstract ID: 513
subject: Neural Injuries and Neurodegenerative Disorders: Neurodegenerative Disorders
Presentation Type: Poster

Therapeutic potentials of human Wharton's jelly -derived stem cells on the rat model of Parkinson's disease

Submission Author: Maryam sadat Jalali

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Background and Aim : Parkinson's disease (PD) is a widespread neurodegenerative disorder with the oxidation of dopamine (DA), generates reactive oxygen species (ROS) and an imbalanced production of ROS, leading to oxidative stress (OS) and neuronal deathν .Recently the stem cell transplantation (SCT) has become an effective treatment for this disease and human Wharton's jelly-derived MSCs (hWJ-MSCs) have shown more beneficial effects to expand neural cells. In the present study we examined the effects of hWJ-MSCs on on locomotion, pallidal local EEG, and its frequency bands' power in a rat model of PD induced by 6-hydroxidopamine (6-OHDA).

Methods : PD was induced by injection of 6-OHDA (16 μg/2 μl) into the right medial forebrain bundle (MFB). Male Wistar rats were divided into 5 groups: Group 1 (control) : received saline Normal. Group 2(PD) [6-OHDA)], Group3 (PD+C): after lesion received HWJ-MSCs (1*106 Cells) i.v, Group 4 (PD+C+drug):after lesion treated by received HWJ-MSCs (1*106 Cells) and (10 mg/kg/levodapa, 30mg/kg/carbiodapa PO, for 60 days after PD induction, Group 5(PD +drug) (after lesion received 10 mg/kg/levodapa, 30mg/kg/carbiodapa PO). Motor activity was assessed by stride length, rotarod, muscle stiffness(Morpurgo), bar test and cylinder tests. Pallidal local EEG was recorded in freely moving rats.

Results : MFB lesion caused significant reduction of stride-length (P<0.001), bar decent latency (P<0.001) and frequency bands' power of pallidal EEG (P<0.001) and also increased the contralateral rotations (P<0.001) latency in bar and morprogo tests and also score of the cylinder test (P<0.001). hWJ-MSCs with Levodopa/Carbidopa significantly restored all above parameters

Conclusion : Although the use of Levodopa/Carbidopa or stem cells can improve the motor movements in PD but the best results were found in PD+cell+Drug group and it can be suggested that the use of drugs such as L-Dopa / Carbidopa and also hWJ-MSCs together can be a good treatment strategy in PD patients.

Keywords : Parkinson's disease, Stem cells, Motor disorder, Electroencephalogram(EEG)

Count: 255
Abstract ID: 491
subject: Emotion, Motivation and Behavior: Motivation and Emotion
Presentation Type: Poster

Effect of intraventricular injection of Neuregulin1β on emotional stress in Alzheimer model of rats

Submission Author: Marzieh Jalilzad

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Background and Aim : Neuregulin-1β (NRG1 β) is associated with various neurological disorders such as schizophrenia, depression and Parkinson's disease. However, its role in Alzheimer's (AD) has not been understood yet. Here, we have studied the effect of NRG1β and extracellular-signal-regulated kinase (ERK) signaling on emotional stress in AD model of rats.

Methods : Fifty six male Wistar rats were divided into eight groups of: Saline + Saline, Aβ+Saline, Aβ+NRG1β (5μg/5ul), Aβ+PBS, Aβ+NRG1β+PD98059 (PD, 5 μg/2 μl), Aβ+NRG1β+Saline and Saline+PD. AD model was induced by intracerebroventricular (ICV) injection of beta-amyloid protein (Aβ1-42, 4 μg/2 μl). The locomotors activity and emotionality of animals were considered in an Open field test. Data were analyzed by one way Anova and T-test.

Results : No significant between groups differences was found in emotional stress characteristics in open field, except the grooming numbers which were higher in Saline + PD compared with Saline + Saline (p=0.02).

Conclusion : Our findings indicate that NRG1β restores cognitive dysfunctions induced by amyloid β through signaling pathways with no significant change in anxiety, locomotion and vegetative activities.

Keywords : Alzheimer diseases, Rat, neuregulin1beta, Open field

Count: 256

Abstract ID: 621

subject: Novel and Cutting-Edge Technologies: Brain Mapping   (MRI, fMRI, PET, Brain Mapping, EEG, EMG, QEEG, FNIRS)

Presentation Type: Oral

Speech-ABR in contralateral noise: A potential electrophysiological tool to evaluate rostral part of the auditory efferent system

Submission Author: Mohanna Javanbakht

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Background and Aim : In parallel with the auditory afferent system, the auditory efferent system is active in all parts of the auditory pathways from auditory cortex to the cochlea. The auditory efferent system has two main segments: the rostral and the caudal parts. The rostral part, which starts from the cortical centers to thalamic nuclei and continues into collicular pathways in rostral brainstem, which sends its neural fibers to the main collicular nuclei especially inferior colliculus. The caudal part includes the olivocochlear bundle, which originates from the superior olivary complex and terminates on the cochlear hair cells. Most studies about the auditory efferent system have focused only on the caudal part using otoacoustic emission suppression test. Speech-evoked auditory brainstem response (S-ABR) as an electrophysiologic test that uses speech stimuli to simulate real-life auditory conditions, reflects the performance of rostral brainstem centers, so structurally seems to be an appropriate candidate to examine the rostral part of the auditory efferent system. Our hypothesis is that S-ABR in noisy condition, a typical condition for stimulating the auditory efferent system, has the potential to be used as an objective noninvasive electrophysiologic test for studying the rostral auditory efferent system in diagnosis and treatment/rehabilitation follow-ups. In addition, S-ABR can potentially reflect higher-order auditory functions and the effects of their dysfunctions on the lower brainstem. This characteristic makes S-ABR even more suitable tool for evaluation of the efferent system.

Methods : Eighteen normal hearing subjects in the age range of 18to25 were tested in a pilot study for S-ABR in quiet mode and three signal to noise ratios of +¬10,0 and -¬10 for both ears. Then we checked the correlation between the results of S-ABR in different conditions and scores of auditory behavioral tests that auditory efferent system is involved in them: Consonant-Vowel perception in noise, dichotic Consonant-Vowel-Consonant and sound lateralization in noise.

Results : The results of the study showed a significant correlation between S-ABR changes in noise with the scores of the behavioral tests in noisy or dichotic situations. Findings of the current study suggest that S-ABR with specific contralateral noise can be an appropriate option for evaluating the performance of rostral part of the auditory efferent system and may be suitable for top-down auditory training follow-ups, although the generalization of these results needs further studies in different groups with different auditory processing abnormalities or skills.

Conclusion : The findings of the current study revealed that in high challenging auditory situations, like speech perception in noise, dichotic hearing situations and auditory lateralization in noise, rostral part of

the auditory efferent system at upper brainstem levels plays a special role, especially in low SNRs. Our findings, obviously support that S-ABR/coN provide a useful tool for examining the rostral auditory efferent system and gives a screenshot of the collaboration between auditory afferent and efferent systems for processing complex auditory stimuli in the noisy situation at the level of upper brainstem.

Keywords : Speech evoked auditory brainstem response; Auditory efferent system; Speech in noise; Dichotic; Lateralization

Count: 257
Abstract ID: 622
subject: Neurorehabilitation and Regeneration: Other
Presentation Type: Poster

Speech-evoked Auditory Brainstem Response; Electrophysiological evidence of upper brainstem facilitative role on sound lateralization in noise

Submission Author: Mohanna Javanbakht

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Background and Aim : Sound localization is one of the most important auditory processing ability, which plays approved role in auditory streaming and speech perception in challenging situations like noisy places. In addition to the main role of lower brainstem centers like Superior Olivary Complex in sound lateralization, efferent auditory system effects on improving auditory skills in everyday auditory challenging positions were revealed. This study evaluated noise effects on lateralization scores in correlation with an objective electrophysiologic test (Speech-ABR in noise), which objectively shows cumulative effects of the afferent and efferent auditory system at Inferior Colliculus and upper brainstem pathway

Methods : Fourteen normal hearing subjects in the age range of 18 to 25 participated in this study. Lateralization scores in the quiet and noisy mode were evaluated. Speech-ABR in both ears for quiet mode and three different contralateral noise levels (SNR= +5, 0, -5) were recorded, too. Correlation of lateralization scores and Speech-ABR changes in noise were studied.

Results : Significant decrease of lateralization scores with latency increase and amplitude decrease of Speech-ABR transient peaks (V, A, O) were seen with noise presentation. A high positive correlation between lateralization decrease with latency increase of onset peaks (V, A) and amplitude decrease of transient peaks (V, A, O) were found in low signal to noise ratios.

Conclusion : The study revealed that in high challenging auditory situations like auditory lateralization in noise, upper brainstem centers and pathways play a facilitative role for main auditory lateralization centers in lower levels.

Keywords : Sound Lateralization, Speech evoked Auditory Brainstem Response, Noise, auditory efferent system.

Count: 258
Abstract ID: 619
subject: Neural Injuries and Neurodegenerative Disorders: Demyelinating Disorders
Presentation Type: Poster

Therapeutical effects of saffron on hippocampal BDNF and TNFα in experimental Multiple sclerosis in ovariectomized rat

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Background and Aim : Multiple sclerosis (MS) is a complex autoimmune disorder which characterized by demyelination and axonal loss in the central nervous system (CNS). Crocus sativus L. (saffron) is an herb that has anti-inflammatory effects. The anti-inflammatory properties of estrogens was investigated. The aim of present study was the treatment effect of ethanol extract of saffron on hippocampal tumor necrosis factor alpha (TNFα) and brain derived neurotrophic factor (BDNF) in the experimental autoimmune encephalomyelitis (EAE) rat's model of MS

Methods : Thirty adult male Sprague Daweley rats were used into five groups. Sham (intra dentate gyrus (DG) injection of 3μl normal saline); treatment control (EAE induction without treatment); treatment 1 (saffron 60mg/kg/day for 21 days); treatment 2 (EAE induction + saffron 60mg/kg/day for 21 days) and treatment 3 (EAE induction + saffron 60mg/kg/day for 21 days+ estradiol 2μg/kg/day). Ovariectomy were done in all group except sham and treatment 1. Induction of EAE was done by 3 μl of 1% ethidium bromide injection in DG. TNFα and BDNF concentration was measured by ELISA kit. Data were analyzed by one way ANOVA and Tuckey as post-hoc test. Significant levels was considered $P<0.05$.

Results : present data was shown that hippocampal BDNF in MS treatment control significantly was lower than sham, treatment 2 and treatment 3 groups, hippocampal BDNF in treatment two group was significantly ($P<0.05$) higher than another groups. In MS treatment control, treatment 2 and treatment 3 groups TNF? was significantly ($P<0.05$) higher than sham group

Conclusion : Present result were indicated that saffron improve the hippocampal BDNF and TNFα in MS without ovariectomy; therefore it has neuro-protective and anti-inflammatory effects. The effect of saffron in the ovariectomized rat with and without estradiol treatment has little effect. So it seems that saffron in present of intact ovary have beneficial effect; and in fact it need to not only estradiol but also all ovarian hormone for the best effect in MS

Keywords : Multiple sclerosis; experimental autoimmune encephalomyelitis; saffron; BDNF; TNFα

Count: 259
Abstract ID: 75
subject: Neural Injuries and Neurodegenerative Disorders: Neurodegenerative Disorders
Presentation Type: Poster

Therapeutic potential Mesenchymal Stem Cells derived from Human Wharton's Jelly in Alzheimer Rat Models

Submission Author: Amir Johari moghadam

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Background and Aim : Alzheimer's disease (AD) is the most common cause of dementia in adulthood, which is followed by cognitive impairment and behavioral deficits. Today, mesenchymal stem cell (MSC) therapy is a good platform for the development of regenerative medicine in neurodegenerative disorders including AD. The aim of this study is to assess the potential of the human umbilical cord-derived mesenchymal stem cells on progression of AD especially in Rat brain's hippocampus region and also evaluation of the NGF and BDNF and apoptotic genes expression in comparison with model.

Methods : After Establishing Alzheimer rat model, then intravenous injecting the MSCs were isolated from human umbilical cord, respectively. MSCs were confirmed by flow cytometry (FC) and immunocytochemistry (ICC), reverse transcription polymerase chain reaction (Real time PCR), were used to assess the expression of genes involved in Neurogenesis, such as the NGF and BDNF genes, as well as the genes involved in the apoptotic process Such as Bcl2, Caspase3, Bax. Level of dark and light cells were assessed by Nissl staining

Results : FC and ICC showed that More than 80% of the cells expressed mesenchymal markers. These cells also differentiated into both bone and fatty groups. In the treatment group, apoptosis genes expression decreased and NGF and BDNF expression increased. Human umbilical cord stem cells have improved effects on AD rats.

Conclusion : WJ-MSCs are readily isolated from the umbilical cord and proliferate rapidly in vitro. the application of MSCs can significantly improve the learning and memory. the expression of NGF and BDNF genes increased and apoptosis gene expression decreased. STZ injection into the brain ventricles causes severe learning and memory impairment.

Keywords : Alzheimer's model; mesenchymal stem cells; apoptotic markers; BDNF; NGF; Wharton's jelly

Count: 260
Abstract ID: 180
subject: Cognition: Neurolinguistics
Presentation Type: Oral

A study on prosody relation with syntactic processing in Persian language based on event-related potential technique

Submission Author: Nayereh Joodi

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Background and Aim : In this study, considering the role of the three acoustic features of prosodic boundaries (pause, duration, and pitch) in the processing and perception of syntactic structures, the correlation of speech prosody to syntactic processing in Persian was investigated using the event-related brain potential technique (ERP).

Methods : The brain signals of 12 men and 14 women (with an average age of 32) who were Persian-speaking university students were taken using 32 electrodes, while they listened to the test stimuli consisting of 333 sentences (two groups of declarative and conditional sentences spoken with natural speech, four groups of conditional sentences spoken with manipulated speech and three groups of filler sentences). The sentences were produced by a Persian-speaking female speaker and recorded by the PRAAT 6.0.56 software. The auditory stimuli were pseudo-randomly divided into three sections using Psychopy software then were played for subjects with a speaker. After performing the signal recording step and processing them using the Matlab software, the results were statistically analyzed by the 2019 version of the Minitab software.

Results : The results indicate that the rate of the N400 component emergence in sentences in which all three prosody features were manipulated, was significantly different in the timing of this component in declarative sentences with natural speech. It should be mentioned that N400 in the N400-P600 pattern reflects a prosody-syntax mismatch effect. The Persian speakers also did not react to the change in the duration of the vowel in the last syllable of the first clause because the time of N400's appearance in these sentences was exactly the same as the natural conditional sentences.

Conclusion : Considering the time of the emergence of component P600 as representing the syntactic re-analysis of the sentences in which the pause was specially manipulated, it can be concluded that the subjects responded more quickly to the violation in this component of the speech prosody processing of the conditional sentences. The CPS component was also observed in the processing of the Persian sentences' prosodic boundaries. The timing of the emergence of the CPS component in sentences with a manipulated fundamental frequency was closer to the timing of this component's emergence on subjects' brain signals in declarative sentences.

Keywords : Prosodic Features; Syntactic Processing; ERP Technique; N400; P600; CPS

Count: 261
Abstract ID: 472
subject: Cognition: Learning and Memory
Presentation Type: Poster

The Effects of Enriched Environment on Cognitive performance of Maternally Separated Male Rats

Submission Author: Sara Joushi

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Background and Aim : As maternal care is an important factor that affects cognitive performance later in life, researchers have been focused on the effects of maternal care adversity on various brain aspects. Maternal separation (MS) is an appropriate paradigm to study the effects of interruption in mother-infant relationship. Since positive experiences could reverse stress-induced impairments, we utilized enriched environment (EE) as a probable therapy to reverse detrimental effects of MS.

Methods : Rat pups underwent MS for 180 min/day from postnatal day (PND) 1-21. The EE paradigm was used after weaning (PND 22-34). Experimental groups (control, MS and enrichment groups) were assessed for learning, memory, locomotor activity and social interaction at PND 35 (adolescence).

Results : MS caused a significant impairment in spatial learning and memory, less locomotor activity and more anxiety in open field and impaired social interaction at adolescence. Meanwhile, MS didn't induce recognition memory impairment in novel object recognition task. EE reversed MS-induced impairments.

Conclusion : We concluded that EE could be considered as a supplementary therapeutic strategy in promoting cognitive function.

Keywords : Cognition, Maternal separation, Enriched environment, Adolescence

Count: 262
Abstract ID: 4
subject: Cognition: Learning and Memory
Presentation Type: Poster

Involvement of Serotonergic system of ventral hippocampus (CA3) on amnesia induce by ACPA in mice

Submission Author: Faezeh Kafi

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Background and Aim : Several studies indicated that cannabinoidergic system has a critical role in regulation of cognitive and non cognitive behaviors such as learning and memory formation in the different brain regions including hippocampus. Moreover, several neurotransmitter systems such as serotonin involved in the cannabinoid responses. Serotonergic fibers innervate a variety of brain regions including the hippocampus and thus influence hippocampal behaviors formation. Therefore, the aim of present study is, to investigate the effects of ventral hippocampal (CA3) serotoninegic system on ACPA (selective CB1 cannabinoid receptor agonist)-induced amnesia.

Methods : Male mice weighing 20-25g used in these experiments. The drug was injected into CA3 (bilaterally) in a total volume of 1μl/mouse (0.5 μl in each side) over a 60s period in mice, meanwhile, ACPA was injected intraperitoneally (i.p.) in a volume of 1ml/kg. We used step down task for assessment of memory formation.

Results : The results showed that ACPA injected intraperitoneally (2 and 5 ng/mouse) did not significantly alter on memory behavior, while in highest dose of the drug (10 ng/mouse) induced amnesia. Furthermore, intra-ventral hippocampal (CA3) injection of serotonin (5-HT-4) agonist on their own (0.625,1.25 ng/mouse) had no effect, but in highest dose (2ng/mouse) induced amnesia. However, sub threshold dose of (5-HT-4) agonist (0.625ng/mouse) with doses of ACPA(5,10 ng/kg) increased amnesia impairment of induced-ACPA.

Conclusion : The findings demonstrate that possible involvement of CA3 serotonergic system on ACPA induced amnesia.

Keywords : ACPA , serotonin , CA3 , memory , Mice

8th Basic and Clinical Neuroscience Congress
December 18-20, 2019   Razi Hall, Tehran, Iran

The Effectiveness of Group Hope Therapy on Cognitive Functions (Memory, Inhibitory Control) of Elderly with Alzheimer's Symptoms

Submission Author: Parisa Karami

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Background and Aim : The purpose of this study was to investigate the effect of group hope therapy on cognitive functions (memory, inhibitory control) in elderly with Alzheimer's symptoms.

Methods : This study is a quasi-experimental with pre-test and post-test design with control group and applied type. Statistical population of all elderly (district 1 of Tehran city with diagnosed psychiatrist with Alzheimer's symptoms) residing in one of the nurses. Elderly people were randomly selected and replaced in two groups of 10 each. The experimental group received hope therapy and the control group did not receive any intervention. The data collection tool was the Rescue Cognitive Functions Questionnaire (2013). The data were analyzed by SPSS software.

Results : The results showed that hope group therapy can significantly increase the cognitive functions (memory and inhibitory control) of the elderly with Alzheimer's symptoms. Practical theoretical perspectives will therefore be discussed.

Conclusion : Considering the efficacy of group hope therapy on cognitive functions (memory, selective attention) in the elderly with Alzheimer's symptoms, it can be concluded that in order to increase cognitive functions among the elderly, especially the elderly who have Alzheimer's symptoms, Hope Therapies was used as a workshop in nursing homes and psychology centers.

Keywords : Ahvaz Azad University Students, Existential Group Therapy, Psychological Well-being

Count: 264
Abstract ID: 170
subject: Neuropsychiatry and Psychology: Disorders of Executive Functions
Presentation Type: Poster

PECS and TEACCH Approach in Children with Autism Disorders

Submission Author: Fatemh Kargar

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Background and Aim : The aim of this study was to compare the effectiveness of PECS and TEACCH's methods on stereotypical behavior, interactivity and communication problems in children with autism. In this experimental study, the statistical population included all children of Qom school of autism in the second six months of the year 2016.

Methods : The sample size consisted of 29 children (21 boys and eight girls) aged six to 14 years old, a random sampling method was used and the PECS group (eight boys and two girls), TEACCH group (nine boys and one girl) and control group (four boys and five girls) were selected. The revised checklist and grading scale of autism gleam were used as materials of this study.

Results : Data were analyzed by using covariance statistical test. The results of this study showed that the mean of behavioral problems indexes of experimental groups by PECS and TEACCH's method significantly decreased strain compared to control group (P <0.01).

Conclusion : Also, comparing the two methods of PECS and TEACCH treatment, the mean scores decrease in the communication index is significant and meaningful in favor of PECS treatment (P<0.05).

Keywords : PECS, TEACCH, Autism, Social Interaction, Stereotyped Behavior, Communication.

Count: 265
Abstract ID: 366
subject: Social Neuroscience: Self perception and regulation
Presentation Type: Poster

The Role of Emotion in Judgments of Moral Dilemmas

Submission Author: Negar Karimi

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Background and Aim : Theories of moral judgment have tended to emphasize the influence of either reason or emotion to moral judgment. However, it is quite likely that both of these capacities play a role in everyday moral evaluation. The roles of both of reason and emotion are integrated in the dual-process theory of moral judgment. According to the dual-process theory, cold reasoning processes are recruited when making utilitarian moral judgments, but these judgments can be preempted by hot affective processes that lead people to make deontological moral judgments. Contemplating the violation of a moral rule elicits a strong negative emotional reaction that tends to elicit disapproval toward the violation. However, when violating the rule would bring about a better moral outcome, this prepotent response can be overridden by deliberative processes, leading to utilitarian approval for the action. The signatures of these two processes are thought to be evident in the so-called personal-impersonal distinction. This tension is nicely captured by a puzzle known as the ''trolley problem'' that has long interested philosophers and that has recently become a topic of sustained neuroscientific and psychological investigation. One version of the trolley problem is as follows: A runaway trolley is about to run over and kill five people. In the switch dilemma one can save them by hitting a switch that will divert the trolley onto a side-track, where it will kill only one person. In the footbridge dilemma one can save them by pushing someone off a footbridge and into the trolley's path, killing him, but stopping the trolley. In this study we hypothesized that people are less likely to approve of sacrificing one person to save others if a dilemma requires an "up-close-and-personal" action, such as physically pushing someone to their death, than if a dilemma requires an action that operates at greater distance, such as flipping a switch that leads to someone's death or not.
Methods : 83 participants responded to two high-conflict moral dilemmas in which killing a single person would save several others. The specific personal dilemma used was Footbridge and impersonal dilemma was Trolley. Participants judged the moral acceptability of the proposed utilitarian action in each dilemma using a 7-point scale ranging from 1 (completely not appropriate) to 7 (completely appropriate).
Results : The results illustrate that subjects in personal judgment made less utilitarian and more deontological judgment than impersonal judgment (t=-6.97, p=0.00).
Conclusion : People are less likely to approve of personal violations because they evoke strong emotional reactions compared to impersonal actions. Personal dilemmas have two key features. First, they elicit automatic emotional responses that support deontological disapproval. Second, compared with impersonal dilemmas, personal dilemmas elicit greater activity in the brain's "default network", which appears to be involved in the mental simulation of events beyond the here and now, as when people think about the past, the future, or the contents of other minds.
Keywords : moral dilemmas; dual process theory; personal force, impersonal force;

Count: 266
Abstract ID: 367
subject: Neural Injuries and Neurodegenerative Disorders: Demyelinating Disorders
Presentation Type: Poster

The Effectiveness of Group Metacognitive Therapy on Major Depression and Mental Health in Patients with Multiple Sclerosis

Submission Author: Negar Karimi

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Background and Aim : Multiple sclerosis (MS) is a central nervous system inflammatory or neurodegenerative disease of autoimmune cause that is often correlated with psychological disorders and cognitive deficits, exhaustion, tension, and psychosocial pressure. There has been a comprehensive analysis of proof for beneficial effects for cognitive and neuropsychological treatments. Metacognitive therapy (MCT) is a modern approach to psychotherapy which differs significantly from other types of psychotherapy in its emphasis on metacognitive mechanisms and metacognitive attitudes as well as on controlling thought patterns, as opposed to traditional cognitive therapy where cognitive content is the object of psychotherapeutic treatment. In this study, we aimed to examine the effects of group metacognitive therapy (MCT), on major depression and mental health in patients with Multiple Sclerosis.

Methods : The planning of this study is through a quasi-experimental method of pretest and posttest type with control group. The sampling method was first a census among the members of the MS Association of Tehran Province. 30 patients have been chosen by available (convenient) sampling and were randomly divided into two groups of experimental (n = 15) and control (n = 15). Beck Depression Inventory and Goldberg Mental Health Questionnaires were completed by subjects before and after treatment. Group metacognitive therapy was applied by trained psychotherapist for 8 sessions with a frequency of one session per week.

Results : Data analysis with one-way ANOVA illustrated that in subjects with group metacognitive therapy the level of depression significantly decreased (F = 3.58, P = 0.04) and the level of mental health improved (F = 4.48, p = 0.02) after the intervention. There is no difference observed in control group.

Conclusion : We demonstrated that Group Metacognitive Therapy has beneficial therapeutic roles in improving the mental health and reduction of major depression in multiple sclerosis patients. Further studies with larger groups and a randomized design are needed to confirm these promising initial findings.

Keywords : group metacognitive therapy; major depression; mental health; multiple sclerosis

Count: 267
Abstract ID: 321
subject: Emotion, Motivation
and Behavior: Motivation and Emotion
Presentation Type: Poster

The Role of Mindfulness and Empathy in Prediction of Marital Satisfaction

Submission Author: Negar Karimi

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Background and Aim : Family is the most important and influential institution among human societies, and marital satisfaction indicates the strength and effectiveness of couples' relationships. In this research we investigated the relationship between marital satisfaction with mindfulness and empathy in married students.

Methods : Statistical society of research included 822 of married students of International Imam Khomeini University in Qazvin city that selected with Hierarchical Sampling method. The last sampling included 260 student that 148 of them were woman and 122 of them were man. Three questionnaires were used in this study including Enriching and Nurturing Relationship Issues Communication and Happiness (ENRICH), Mindful Attention Awareness Scale (MASS) and Interpersonal Reactivity Index (IRI). This research has causal-comparative and after-effect method.

Results : Analysis of data showed that there were a statistical relationship between all factors in mindfulness and general scale of empathy and mindfulness in comparison with empathy showed more effect on marital satisfaction.

Conclusion : Marital Satisfaction, Mindfulness, Empathy, Interpersonal Reactivity

Keywords : Marital Satisfaction; Mindfulness; Empathy; Interpersonal Reactivity

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Count: 268
Abstract ID: 18
subject: Cognition: Executive Function (Decision Making, Reasoning, Problem Solving)
Presentation Type: Poster

Differential effects of the orexin-1 receptor blockade in the prefrontal cortex and lesion of the lateral hypothalamus on neuronal activity in the orbitofrontal and anterior cingulate cortices

Submission Author: SARA KARIMI

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Background and Aim : Several studies indicate that orexins may take a part in the regulation of a difference form of affective and cognitive processes during wakefulness. The prefrontal cortex (PFC) plays a key role in cognitive processes. Orbitofrontal cortex (OFC) and anterior cingulate cortex (ACC) as an important part of the PFC have a crucial role in reward and decision-making processes, and has a high density of orexin receptor type 1 (OX1Rs) in the PFC.

Methods : In the present study, for detecting the role of the OX1Rson OFC neurons firing rate, the OX1Rswereinhibited in this area after 10-min baseline recording. In the second part of the study, the lateral hypothalamus (LH) as a main source of orexinergic neurons, was inhibited and its effect on the firing rate and activity pattern of the ACC or OFC neurons were detected by using single-unit recording technique in the rats.

Results : Results showed that blockade of OX1Rs in the OFC could excite 8 neurons, inhibit 1 neuron and did not affect 2 neurons out of 11. Beside, the blockade of OX1Rs in the ACC could excite 6, inhibit 3 and did not affect 1neuron. Also, LH inactivation excited 5 out of 12 neurons and inhibited 6 neurons in the ACC. Also, it excited 8 and inhibited 6 neurons out of 14 neurons in the OFC.

Conclusion : These data suggested that blockade of theOX1Rs excited 72% of the neurons but LH inactivation had an excitation effect just in 50% ofneurons in two main part of PFC regions. It seems that the PFC neurons receive the orexinergic inputs from the LH and indirectly from other sources.

Keywords : Neuronal activity; Orexin-1 receptor; Lateral hypothalamus; Orbitofrontal cortex; Anterior cingulate cortex; Single-unit recording

Count: 269
Abstract ID: 152
subject: Epilepsy, Neural Excitability, Synapses, and Glia: Channels, Receptors, Transporters,
Presentation Type: Oral

Underlying mechanisms of long-term potentiation during the inhibition of the cannabinoid CB1 and GABAB receptors in the dentate gyrus of hippocampus

Submission Author: Seyed Asaad Karimi

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Background and Aim : It is important to determine the pre- and/or postsynaptic locus of Long-term potentiation (LTP) expression in order to study its underlying mechanisms. The aim of the present study was to investigate whether LTP induction acutely induced by cannabinoid CB1 and GABAB receptors antagonists occurs at the presynaptic or postsynaptic sites, or at both.

Methods : Male Wistar rats were randomly divided into following groups: Control (90% saline + 10% DMSO,), AM251, CGP55845, CGP55845 + AM251. After cannulation, AM251 and CGP55845 were microinjected into dentate gyrus (DG) of hippocampus, as antagonists of CB1 and GABAB receptors, respectively. LTP in the hippocampal area was induced by high-frequency stimulation (HFS) of the perforant path (PP). The population spike (PS) amplitude and slope of excitatory postsynaptic potentials (EPSP) were measured in DG area of adult rats in response to stimulation applied to the PP. The paired-pulse ratio (PPR) was measured before and after the induction of LTP in all groups.

Results : Statistical analysis using Two-Way ANOVA followed by Sidak's test for multiple comparison revealed that AM-251 produced significant increase in slope of EPSP and amplitude of PS ($p < 0.01$). Conversely, administration of CGP55845 produced decrease in slope of EPSP ($p < 0.01$). We observed that PPR was not affected by LTP induction in the presence of AM251 or CGP55845 either alone or their combination ($p > 0.05$).

Conclusion : Based on our results the site responsible for LTP expression is, at least partly, the postsynaptic site, because PPR is widely considered to be of presynaptic origin. It seems that contribution of CB1 and GABAB receptors to LTP have centered on NMDA receptor-dependent form of LTP because we observed that PPR was not affected by LTP induction in the presence of AM251 or CGP55845 either alone or their combination.

Keywords : Hippocampus, Paired-Pulse Ratio; Cannabinoid CB1 receptors, GABAB receptors; Long Term Potentiation

Count: 270
Abstract ID: 519
subject: Cognition: Executive Function (Decision Making, Reasoning, Problem Solving)
Presentation Type: Poster

Problem Solving Skills Training Using Illustrated Stories and Social Skills of Young Girls with Intellectual Disability in the City of Shahre Ray

Submission Author: Leila Kashani Vahid

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3. Assistant Professor, Azad University, Science and Research Branch

Background and Aim : Individuals with intellectual disability have problems in their social skills.

Methods : A life skills program based on illustrated stories was designed to help these children in practicing their everyday life skills. Effectiveness of this intervention was evaluated by a semi-experimental with pretest-posttest and a control group. 15 students (17-22 years old) in the experimental group participated in this program, and the control group did not receive any treatment. Parents' form of the Social Skills Rating Scale (Gresham and Elliott, 1990) was used to measure their social skills. The obtained data were analyzed using Analysis of the Covariance (MANCOVA).

Results : The findings showed significant differences ($p<0/05$) between the experimental and the control group in all subscales of social skills including cooperation, assertiveness, and self-control.

Conclusion : At the end, using illustrated stories for improving social skills was discussed. Further discussions as well as suggestions for future research are presented.

Keywords : Social skills, problem solving skills, young Girls with intellectual disability

Count: 271
Abstract ID: 95
subject: Cognition: Attention
Presentation Type: Poster

Effectiveness of Virtual Family-based Cognitive-Sensory-Motor Games on Attention of Children with ADHD.

Submission Author: Leila Kashani Vahid

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Background and Aim : Considering many children who are affected by Attention Deficit and Hyperactivity Disorder (ADHD), it is important to find efficient methods to improve the lives of these children. Consequently, in this study, a series of family-based cognitive sensory-motor games were developed and their effectiveness on the attention of the children with ADHD was studied.

Methods : In order to test the effectiveness of the approach, a sample group consisted of 20 elementary school students who were diagnosed to have ADHD by a psychiatric, were selected. Furthermore, Conner's Continuous Performance Diagnostic Test Questionnaire was used to make sure of the diagnosis. These children were randomly divided into two groups of 10 students. Then D2 Test of Attention (Brickenkamp, 1981) was used to evaluate the attention of the participating students. The experimental group participated in 10 intervention sessions, each for 60 minutes each, for 4 weeks. The control group stayed in the waiting list to receive the intervention after the study. The obtained data were analyzed using the Analysis of Covariance.

Results : The findings showed a significant difference ($p < 0/5$) between the attention of the experimental and the control groups.

Conclusion : In the end, using virtual family-based cognitive sensory-motor games for improving attention of children with ADHD was discussed. Further discussions, as well as suggestions for future research, are presented.

Keywords : Cognitive-sensory-motor games, attention, students with Attention Deficit and Hyperactivity Disorder.

Count: 272
Abstract ID: 128
subject: Cognition: Executive Function (Decision Making, Reasoning, Problem Solving)
Presentation Type: Oral

Effectiveness of Creative Problem Solving Program on Creativity of Working Boys with Behavioral Problems

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Background and Aim : The present study was designed to evaluate the effectiveness of creative problem solving training on creativity of working children with behavioral problems.

Methods : For this purpose, a quasi-experimental research with a pretest-posttest design with a control group was conducted. 20 working children were selected and assigned randomly to two experimental (10) and control (10) groups. The experimental group was trained for 12 sessions for two months. The control group received no intervention during the training sessions of the control group and waited in the waiting list. Torrance Creative Thinking Scale (1990) was used to measure the creativity of the working children.

Results : The findings showed significant differences ($p<0.5$) between the experimental and the control group in the creativity of the participating children.

Conclusion : In the end, using social problem solving training for improving the creativity of working children was discussed. Further discussions, as well as suggestions for future research, were presented.

Keywords : Creative problem solving training, creativity, working children with behavioral problems.

Count: 273

Abstract ID: 64

subject: Motor Systems and Movement Disorders: Movement Disorders (Parkinson, Huntington's, ALS, Ataxia, edication-induced Movement Disorders)

Presentation Type: Poster

Kinematic and Acoustic Analysis of Parkinson Disease

Submission Author: Ehsan Kaviani

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Background and Aim : Parkinson's disease (PD) is a neurodegenerative illness that characterized by impairment of basal ganglia function that affecting neuromotor systems responsible for speech motor control. The causes of Parkinson include perinatal injury, cerebrovascular accidents and neurodegenerative diseases, which damage brain areas involved in planning and executing speech gestures. The muscles activating speech and phonation such as jaw, tongue and lips, have shown to be highly affecting by this disease. Therefore, speech is considered a vehicular tool to detect and grade neuromotor deterioration. Acoustic and kinematic analysis are the most important analysis that many researchers have been used to show speech features and they can help to differentiate disorders correctly. Accordingly, the purpose of this study is to gain initial insights in speech muscles performance and acoustic features of person with Parkinson.

Methods : This review article is about kinematic and Acoustic analysis in Parkinsonism clients and the relevant articles were extracted from Science Direct, Pro quest and Pub med Data Bases. 20 articles had been selected according to inclusion criteria from 2000 to 2019 and 4 of them had been deleted by exclusion criteria.

Results : Different studies of kinematic analysis showed that the amplitude of movement in PD people were reduced related to normal group (NG). Although peak velocities were lower for the PD than the NG subjects, velocity changes were consistent with the reduced movement amplitude. The amplitude-velocity relationship was not different for the PD subjects compared to the NG subject. Another difference between the groups was in the segment duration. The segment duration in NG people was longer than PD people. Acoustic analysis pointed to the greater changes of jitter and shimmer in PD people related to NG people. Voice Onset Time (VOT) in PD was more than NG. Furthermore, the first vowel formant in PD was lower than NG and finally, the articulatory-acoustic vowel space (AAVS) measure, one of the most important acoustic component, was significantly lower in individual with PD.

Conclusion : The current study shows that Speech motor deficits can be described on the basis of acoustic and kinematic measures. Theses parameters can be used for speech motor disorders. Furthermore, Insight in speech motor performance pattern of persons with Parkinson can be used to optimize speech interventions that aim to maximize speech function. They can also lead to development of new treatment approaches for person with Parkinson.

Keywords : Kinematic – Acoustic – Dysarthria – Parkinson

Count: 274
Abstract ID: 438
subject: Neural Injuries and Neurodegenerative Disorders: Ischemia, Stroke, and Neurovascular Disorders
Presentation Type: Poster

Idiopathic Intracranial Hypertension (IIH), a case study

Submission Author: Fatemeh Kazemi

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3. Faculty of Medicine, Qazvin University of Medical Sciences, Qazvin, Qazvin, Iran.

Background and Aim : IIH is an idiopathic disease with increased pressure of CSF without secondary cause. It is observed in all age groups, especially obese young women and children with symptoms of vision loss, headache, double vision, papilledema. Here we reported a 32-year-old female case in Bu-Ali Hospital of Qazvin, Iran.

Methods : The patient had cold symptoms (22 days before admission), severe progressive headache and neck pain, followed by double vision and frequent vomiting and upper limb paresthesia but no fever and meningitis symptoms. Complete paralysis in horizontal movements of right eye with left environmental facial paresis and two-way papilledema in ophthalmoscopy were diagnosed. Power and tone of organs and reflexes were normal and +1 respectively, also plantar reflexes were normal without Babinski. No findings on paraclinics and OP=34cmH2O in Lumbar Puncture(LP) with decreased protein in CSF. Considering high ICP, Acetazolamide 250mgIV/BD was prescribed. Pain was relieved After LP and discharging of CSF, followed by the full recovery of eye movement in 3 days. In CSF analysis of the third day OP=18cmH$_2$O. The patient was discharged with full recovery. Polycystic ovary syndrome (PCOS) was reported in ultrasound findings.

Results : In neurological references, patients with IIH have ophtolmoparesis in outward movements but widespread paralysis of cranial nerves is rare and responded well to treatment.

Conclusion : In neurological references, patients with IIH have ophtolmoparesis in outward movements but widespread paralysis of cranial nerves is rare and responded well to treatment.

Keywords : Idiopathic Intracranial Hypertension, papilledema, headache

Count: 275
Abstract ID: 298
subject: Computational Neuroscience: Modeling and Simulation
Presentation Type: Poster

A Multi-Atlas Patch-Based Method for Neonatal Brain Extraction

Submission Author: Kamran Kazemi

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Background and Aim : Magnetic resonance (MR) imaging, a non-invasive method with high spatial resolution, provides useful information about different anatomical structures. The process of removing non-brain tissues including scalp, fat, muscle, neck and eyeballs from cerebral MR images is called brain extraction. Due to rapid changes in neonatal brain size, low spatial resolution and low contrast, brain extraction from head MR images of neonates is really challenging.

Methods : We presented a multi-atlas patch-based label fusion method for automatic brain extraction from neonatal head MR images. In this method, a number of atlases were first selected uniformly from training images. Then, a probabilistic gray level-coded brain mask was created by averaging the brain masks of the selected atlases, all aligned nonlinearly to the target image. The certain and uncertain voxels were defined based on their probability in the gray level-coded brain mask. The certain voxels belonged to the brain tissue with a probability of one (needed no more processing), while the uncertain voxels had a probability value of less than one (required further processing). The label assignment for uncertain voxels were done by considering their degree of uncertainty using a modified non-local patch-based label fusion method based on the integration of low-level and in-depth search patch selection strategies. The low-level search strategy was used for intensity and label dictionary construction for uncertain voxels with a lower degree of uncertainty, caused by registration errors. The in-depth search strategy was done by increasing the depth size for dictionary construction for uncertain voxels with a higher degree of uncertainty.

Results : Our proposed method was evaluated on T2-weighted MR images of 40 neonates (gestational age 37- 44 weeks) using the leave-one-out cross-validation method. The method achieved an average Dice, Jaccard and Conformity coefficients of 0.993,0.986 and 0.986, respectively. The proposed method achieved higher accuracy and produced less false positives in comparison with two well-known non-learning-based methods (i.e. brain surface extractor (BSE) and FSL's brain extraction tool (BET)) and two multi atlas-based methods (i.e. conventional Non-local patch-based (NLPB) and Multi-atlas skull stripping MASS).

Conclusion : Our multi-atlas patch-based label fusion method can be used to extract brain masks with high accuracy, an important preprocessing step before brain tissue segmentation in neonates.

Keywords : Neonatal brain MRI; Brain extraction; Multi-atlas; Label fusion.

Count: 276
Abstract ID: 360
subject: Emotion, Motivation and Behavior: Motivation and Emotion
Presentation Type: Poster

The role of Mindfulness, Emotion Regulation and Emotional Empathy in Alexithymia among female students of Urmia Azad University

Submission Author: Niloufar Kazemi

Niloufar Kazemi[1]

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Background and Aim : Alexithymia is one of the disorders in students that can lead to academic problems. The aim of this study was to investigate the role of mindfulness, emotion regulation and emotional empathy in alexithymia among female students of Urmia Azad University.

Methods : This is a descriptive- correlational study. The statistical population of the study was all female students of Islamic Azad University of Urmia in of 2018-2019 Academic year. A total of 360 students were selected by available sampling and completed the mindfulness questionnaire Bauer et al, Emotion Regulation of Garnefski et al, Emotional empathy of Parsian et al., and Alexithymia of Toronto questionnaire. Data were analyzed using Pearson correlation coefficient and multiple regression.

Results : The eesults showed a negative relationship between mindfulness ($p < 0.01$), positive emotion regulation ($p < 0.01$), and emotional empathy ($p < 0.05$) with alexithymia. There was a positive relationship between positive emotion regulation and alexithymia ($p < 0.01$) in female students. also Results of multiple regression showed that Research variables were able to predict %35 of the variance of alexithymia in female students.

Conclusion : According to the results, it can be concluded that mindfulness, emotion regulation and emotional empathy played an important role in alexithymia in female students. Accordingly, it can be said that through education and promotion of mindfulness, emotion management and empathy skills, the level of alexithymia is reduced in female students.

Keywords : Mindfulness, Emotion Regulation, Emotional Empathy, Alexithymia

Count: 277
Abstract ID: 131
subject: Cognition: Learning and Memory
Presentation Type: Poster

Effectiveness of Cognitive Computer Games (maghzineh) on Working Memory of the Students with Learning Disability in Reading

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Background and Aim : The present study was designed to evaluate the effectiveness of cognitive computer games on working memory of students with learning disabilities in reading.

Methods : . For this purpose, a quasi-experimental research with a pretest-posttest design with a control group was conducted. 20 learning disabled students were selected and assigned randomly to two experimental (10) and control (10) groups. The experimental group was trained for 20 sessions individually for a month. The control group received no intervention during the training sessions of the experimental group. The subscale of working memory in the New version of Tehran-Stanford-Binet Intelligence Scale was used to measure working memory. The obtained data was analyzed using Analysis of Covariance.

Results : The findings showed significant differences between the experimental and the control group in working memory in the participating students with learning disabilities in reading.

Conclusion : Finally, using cognitive games for improving working memory of the students with learning disability in reading was discussed. Further discussions, as well as suggestions for future research, are presented.

Keywords : Computer cognitive games, working memory, Learning disabilities

Count: 278
Abstract ID: 498
subject: Cognition: Learning and Memory
Presentation Type: Poster

Correlation of Spatial Memory Impairment and Apoptotic Cells Density in CA1 Region of Brain in the Aged Rats

Submission Author: Aytak Khabbaz

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Background and Aim : Aging is characterized by a progressive loss of physiological integrity, leading to impaired function and increased vulnerability to death. This study aims to evaluate the correlation between spatial memory impairment and apoptotic cells density in CA1 region of the aged rats' brain.

Methods : For this purpose, we used twelve aged (2 years old) and twelve young Wistar rats (2 months old). After a week of adaptation the five-day protocol Barnes maze test used for spatial learning and memory evaluation in animals. In the end, rats' brains were excised for evaluated the number of apoptotic cells in CA1 region by TUNEL staining of brain tissue then counted the number of the TUNEL positive cells under a fluorescent microscope.

Results : The present study showed a significant decrease in learning and spatial memory in aged rats rather than younger ones. It also showed an increase in number of apoptotic cells in aged rats. According to the results, a significant connection exists between the increasing number of apoptotic cells and spatial memory decreasing.

Conclusion : In conclusion, this study proved, an increase in apoptotic cells in the hippocampal region has a direct correlation with a decline in the learning and spatial memory in aged animals. Also, these data may prompt that the apoptotic cells in hippocampal as an inevitable outcome of aging and we can decrease the speed of this process with appropriate medication.

Keywords : Spatial Memory ; Apoptosis; Brain aging.

Count: 279
Abstract ID: 594
subject: Cognition: Attention
Presentation Type: Oral

Beta-high-gamma phase-amplitude coupling facilitates effective transmission of visuo-motor information in the macaque brain

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Background and Aim : Visuo-motor responses rely on flexible transmission of information between visual and frontoparietal associative areas in the human and non-human primate brain. However, it remains unclear how such transmission is dynamically controlled allowing an efficient guidance of the behavioral report.

Methods : We recorded extracellular activities from the medial temporal area (MT) of two macaque monkeys while they performed a visual motion change detection task. The animals were trained to report a brief change in one of two moving random dot patterns presented on a screen, while they fixated their eye gaze on a central fixation point. We divided the hit trials into fast and slow subsets based on the monkeys' reaction time in each trials. To study how the rhythmic synchronization of MT neurons may modulate behavioral speed, we extracted local field potentials (LFP) and single-unit spiking activities during the period before the direction change and calculated spike-phase coupling (SPC) as well as the phase-amplitude coupling (PAC) for different frequency pairs in each trial.

Results : Our results demonstrate that the strength of coupling between single-unit activities and the phase of high-gamma LFP oscillations ($>180\,$Hz) predicts the monkey's speed in reporting the change in stimuli. This suggests that spikes are more likely evoked at a specific phase of high-gamma oscillations in fast, rather than slow trials. Given that a previous study in the visual area V4 reported a similar observation, but in a different frequency band (gamma frequencies, 40-70Hz), we propose that visual pathways (dorsal vs. ventral) may use distinct frequency bands (high-gamma vs. gamma) for routing information into downstream areas, enabling them to distinguish input sources. Moreover, our results indicate that, power of high-gamma oscillations are more strongly modulated by beta rhythmic activities in fast compared to slow trials. This observation suggests that an increase of beta to high-gamma PAC could facilitate the transmission of sensory information to associative areas facilitating behavioral responses.

Conclusion : We concluded that beta coupled high-gamma synchrony could facilitate effective transmission of visuo-motor information in the macaque brain

Keywords : visual area MT, spike-phase coupling (SPC), phase-amplitude coupling (PAC)

Count: 280
Abstract ID: 476
subject: Social Neuroscience: Other
Presentation Type: Poster

The insular cortex and addiction: a new insight into therapeutic potential for addiction& bipolar disorder

Submission Author: Sara Khani

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Background and Aim : The insula lies deep in the floor of the lateral fissure ,and overlapped by a operculum .Cytoarchitectonically, three zones are recoginized within the insula. Anteriorly,the cortex is granular which surrounded by a belt of dysgranular cortex ,the posterior part of insular cortex is granular regions .The Insula has connections with cingulate gyrus, amygdale, basal ganglia, brain stem ,thalamus and parietal ,frontal, temporal lobes. According these connection, Insula involved in the integration of pain, viscerosensory, visceromotor , cognitive ,auditory , speech , self awareness, limbic and autonomic function.

Methods : This paper reviews the foundation for a role of the human anterior insular cortex (AIC) in addiction.

Results : The classical literature on the neurobiology of addiction has focused mainly on the subcortical system , such as the amygdala, the ventral striatum and mesolimbic system. However, recent evidence have supported the notion that addiction is regulated by cortical modulation. In additionally, studies indicates that AIC plays a crucial part in conscious usage of drugs. The neurotransmitter & receptors of the insula supports its role in motivation, emotion and addiction. AIC receives dopaminergic innervation , contains a high concentration of opioids and corresponding receptors. These receptors can have a role in use of drugs,pain ,neural plasticity and therapeutic potential for addiction.lesion studies on the function of insular indicated that damage to the insula disrupts addiction to cigarette smoking. Nicotine, cannabis , heroin, methamphetamine, cocaine , and alcohol have been shown to cause structural changes to the insula.Drug users had gray matter reductions in the insula. The duration of drug use was associated with changes gray matter in insula. Also, In bipolar disorder gray matter reduce in anterior cingulated gyrus and insula that regions implicated in emotional processing.

Conclusion : The insula may be involved in therapeutic potential for addiction & bipolar disorder.

Keywords : insular cortex,addiction, bipolar disorder

Overexpression of miR-133b and miR365b is associated with downregulation of the NMDA receptor signaling pathway in the striatum of morphine tolerant rats

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Background and Aim : MicroRNAs (miRNAs) are small non-coding RNAs that are involved in brain physiology and pathology. This type of small regulatory RNAs control gene expression via either degrading mRNAs after binding to their 3′ untranslated region (3′UTR) or inhibition of translation. In recent years, a growing body of research have focused on the role of miRNAs in morphine tolerance and addiction. According to many published pharmacological studies, morphine tolerance and addiction is associated with not only changes in the mu-opioid receptor signaling but also in the N-methyl-D-Aspartate (NMDA) receptor downstream signaling pathway. Striatum is a target of the mesocorticolimbic pathway and is involved in neural disturbances related to morphine tolerance and addiction. However, there is no report about role of miRNAs on gene expression of NMDA receptor and downstream signaling molecules in the striatum of morphine tolerant subjects. In this study, we aim to examine changes in the expression of miR133b and miR365b and their association with the GluN1 as the main subunit of NMDA receptors, calcium/calmodulin-dependent kinase II α (CamKIIα), nitric oxide synthase (NOS) and nuclear factor kappa B (NFκB) in the striatum of morphine-tolerant rats.

Methods : Two groups of male Wistar rats were used. Morphine tolerance was induced by injections of morphine (10 mg/kg) twice daily for 8 days. A control group also received saline (1 ml/kg) instead of morphine during the schedule. Induction of morphine tolerance was assessed using a hotplate test of analgesia on day 8. Two hours after the last injections on day 8, each rat was anesthetized, decapitated and the striatum was dissected on an ice-chilled surface. The expression of miR133b and miR365b as well as the gene expression of the GluN1, CamKIIα, NOS and NFκB was assessed using a real-time PCR method.

Results : The results of the hotplate test of analgesia confirmed induction of morphine analgesic tolerance after the 8 days treatments. The results of the real-time PCR indicated that the expressions of both miR133b and miR365b significantly increased in the striatum of morphine tolerant rats. The results also revealed that the mRNA level of the GluN1, CamKIIα, NOS and NFκB significantly decreased after morphine tolerance.

Conclusion : It can be concluded that morphine tolerance increases expression of miR133b and miR365b in the striatum that in turn may cause significant decreases in the gene expression of the NMDA receptor and downstream signaling pathway. Therefore, miR133b and miR365b should be considered as key regulators of the gene expression associated with morphine tolerance in the striatum.

Keywords : Morphine tolerance, MicroRNAs, NMDA receptor, Signaling Pathway, Gene expression, rat

Count: 282
Abstract ID: 239
subject: Integrative system: Neural Circuits and Connectivity
Presentation Type: Oral

Functional and directed connectivity of cortico-limbic network in mice in vivo

Submission Author: Zeinab Khastkhodaei

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Background and Aim : Basolateral amygdala (BLA), nucleus accumbens (NAC), prefrontal cortex (PFC) and ventral hippocampus (vHC) are known as the key structures in cortico-limbic network, which plays a central role in processing emotions and higher cognitive functions. Functional alterations in specific connections of this network has been reported in several psychiatric disorders. However, it is not clear whether these alterations occurring in the direct pathways or alternatively through indirect interactions.

Methods : Using multi-site probes and under light anesthesia, we performed extracellular recording in three brain regions simultaneously in BLA-NAC-PFC-vHC network. To investigate the functional connectivity of these five pairs we used spike count cross-correlation and time-resolved partial directed coherence analysis.

Results : Our results show that BLA, NAC, PFC and vHC are highly interconnected and synchronized during spontaneous activity. We show that in most of tested connections a considerable amount of synchrony is mediated by the third recorded region. Furthermore, for each paired brain region we determine the directionality of interaction by measuring the strength of feedback and feedforward connections. We find that although all tested connections are reciprocal, the strength of the information flow, depending on target area, is weighted toward either directions. These findings indicate that in a given region in BLA-NAC-PFC-vHC network, the dominant direction of information flow interaction changes according to the target region, which is an evidence of region-specific interaction in this network.

Conclusion : Our results in characterization of functional connectivity in four key brain regions in cortico-limbic network, not only can extend the previous findings on functional interaction, but also provide the basis to study alterations in this network in animal models of psychiatric disorders.

Keywords : Basolateral amygdala; nucleus accumbens; prefrontal cortex; ventral hippocampus; coherence; multi-electrode recording

Count: 283
Abstract ID: 290
subject: Novel and Cutting-Edge Technologies: Molecular, Biochemical, and Genetic Techniques & Gene . Therapy
Presentation Type: Poster

Methamphetamine administration impairs behavior, memory and underlying signaling pathways in the hippocampus.

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Background and Aim : Methamphetamine (METH) is a strong psychostimulant drug which can essentially affect different brain regions. Hippocampus as one of main components of limbic system plays key roles in processing of short term, long term and spatial memory.

Methods : Herein, we explored the changes in behavior, synaptic transmission and hippocampal volume along with gliosis following METH treatment. Besides, using genome-wide expression profiling, we applied a pathway-based approach to detect significantly dysregulated signaling pathways.

Results : In this regard, we found that METH administration interrupts spatial memory and long term potentiation (LTP). Additionally, stereological analysis revealed a significant alteration in hippocampal volume along with increased gliosis upon METH treatment.

Conclusion : We also identified several signaling cascades chiefly related to synaptic transmission which were considerably interrupted in the hippocampus of METH-treated rats. Taken together, our data suggests a potential link between behavioral disruptions and dysregulated signaling pathways.

Keywords : Hippocampus; Methamphetamine; Neurotransmission; RNA-seq

Count: 284
Abstract ID: 291
subject: Cognition: Executive Function (Decision Making, Reasoning, Problem Solving)
Presentation Type: Poster

Prediction of risk-taking by using cognitive task in the framework of signal detection theory

Submission Author: Ayda Khayyat Naghadehi

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Background and Aim : The purpose of this study was to predict the risk-taking of individuals, by using Go-Nogo cognitive task in the framework of signal detection theory (SDT). SDT is based on the fact that when one person perceive sensory experience, must also make a perceptual decision by answering "yes" or "no". SDT is generally used to measure perception, memory, and performance of specific tasks, and is used as a tool in separating the subject's behavior into two parts: sensitivity and response bias. This study applied the Go-Nogo task to predict the risk-taking, by using sensitivity and response bias of SDT.

Methods : For this purpose, 149 participants took part in the study. They performed the BART task, Barratt scale and two types of Go-Nogo task (simple and cued), Separately.

Results : : The results were compared and analyzed using Pearson correlation coefficient and discriminant analysis, and was shown that impulsivity (as one of the factors influencing risk-taking) was inversely correlated with the sensitivity index of the Go-Nogo task.

Conclusion : These results means that the high degree of impulsivity and accordingly risk-taking is related to sensitivity index. Also, the not cued Go-Nogo task, can identify high risk people from low risk one. But the cued Go/Nogo task is not able to identify the two groups from each other.

Keywords : Go-Nogo task; Sensitivity; Response Bias; Signal Detection Theory; SDT; Risk-Taking

Iran University of Medical Sciences

Iranian Neuroscience Society

Count: 285
Abstract ID: 649
subject: Cognition: Working Memory
Presentation Type: Poster

Evaluation of the effectiveness of worldview trauma training from Nahj al-Balagha's viewpoint on cognitive dysfunctions (worry, rumination), and autonomic nervous system of m

Submission Author: MASOOMEH KHAZAEE

MASOOMEH KHAZAEE[1]

1. Master of Clinical Psychology

Background and Aim : Autism spectrum disorder or autism spectrum disorder is characterized by significant degradation in the three domains of communication, social exchange, language skills, as well as the presence of restrictive and repetitive intolerant behaviors. The disorder, which usually appears in the early years of life until the age of three, ranges from mild to severe, including neurodevelopmental disorders. The purpose of this study was to evaluate the effectiveness of Nahj al-Balaghah traumatization training on dysfunctional cognitive components (worry, rumination), and the autonomic nervous system of mothers with autistic developmental disorders.

Methods : The study sample consisted of 33 mothers of children with neurodevelopmental disorder (AIDS) who were educated in the Medical Center of Mashhad in 69-69 years. In this study, the Pennsylvania Worries Questionnaire, Nolen-Hoxma Rumination Questionnaire and Automated Nervous System Questionnaire (Heart Rate, Blood Pressure) were used. Statistical analysis of covariance was used to analyze the data.

Results : The results showed that the pre-test covariance analysis for all variables was higher for the training group than the post-test, which was more significant for worry and rumination. Therefore, it can be concluded that education had a positive effect on these variables.

Conclusion : Based on the findings of this study, it can be concluded that teaching worldly traumas to mothers of children with neurodevelopmental disorders can help them to accept their problems and improve cognitive dysfunctions (worry, rumination), as well as their nervous system (blood pressure, heart rate).

Keywords : worry, rumination, neurodevelopmental disorders, autonomic nervous system

Count: 286
Abstract ID: 414
subject: Neural Injuries and Neurodegenerative Disorders: Other
Presentation Type: Poster

Chronic buprenorphine treatment and PGC-1α gene expression during methamphetamine addiction in male rat

Submission Author: Deniz Khodabakhsh ghazani

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Background and Aim : The prevalence of methamphetamine (MA) use has increased in recent years. The effects of methamphetamine (METH) on pro-oxidant processes and on the production of reactive oxygen species were examined in vivo in the rat brain. Oxidative stress plays a role in MA-induced neurotoxicity. Buprenorphine offers some potential pharmacologic advantages over methadone in the management of opioid addiction. PGC1-α is a master regulator of ROS scavenging enzymes. PGC1-α is also involved in mitochondrial biogenesis that is vital for cell survival. The primary aim of this study was therefore to investigate the alteration of PGC-1α gene following methamphetamine addiction in male rats that were under treatment of buprenorphine.

Methods : 49 male Wistar rats were randomly assigned into seven experimental groups (n=7): Control, Saline, Methamphetamine (10 mg/kg, i.p. for 5 days), Buprenorphine (6 and 10 mg/kg, i.p.), Methamphetamine + Buprenorphine (6 and 10 mg/kg for 14 days). Brain stem tissue was assayed for the expression of P2X4 receptor gene using RT- PCR.

Results : amphetamine administration decreased the level of PGC-1a gene in comparison to control group but it was not significant. The expression of PGC-1a gene did not change after the buprenorphine (6 and 10 mg/kg) administration in comparison to control group.

Conclusion : Data shows that methamphetamine activate oxidative stress. Changing the level of PGC-1a gene expression indicate the involving of mitochondria in meth toxicity.

Keywords : Buprenorphine, Amphetamine, PGC-1a gene

Count: 287
Abstract ID: 516
subject: Cognition: Neurolinguistics
Presentation Type: Poster

Protective effects of Chrysin against neurological deficit, infarct size and cerebral hyperemia after cerebral ischemia/reperfusion injury in rats

Submission Author: Maryam Khombi Shooshtari

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Background and Aim : Cerebral ischemia/reperfusion injury (I/R) is one of the major causes of neurological deterioration, mortality, and disability worldwide. Chrysin (5,7-dihydroxyflavone) is a well-known member of the flavonoid family with antioxidant and neuroprotective effects. In the present study we aimed to investigate the probable effects of Chrysin (CH) on some physiological parameters including cerebral hyperemia, neurological deficits and infarct size induced by bilateral occlusion of the common carotid arteries and reperfusion in rats.

Methods : Adult male Wistar rats (250–300 g) were randomly divided into five groups: and submitted to cerebral I/R or a sham surgery after three-weeks of pretreatment with chrysin (CH; 10, 30 and 100 mg/kg; P.O.) and/or normal saline containing %5 DMSO. Subsequently, sensorimotor scores, local cerebral blood flow, and infarct size were evaluated following I/R.

Results : Data showed that pretreatment with chrysin significantly improved sensorimotor signs, and attenuated reactive hyperemia ($p < 0.001$). Furthermore, chrysin pre-treatment significantly decreased the infarct size ($p < 0.01$).

Conclusion : This study demonstrates that chrysin may have beneficial effectson some physiological parameters and help recover the brain dysfunction induced by I/R.

Keywords : Chrysin; Cerebral ischemia/reperfusion; Infarct size; Reactive hyperemia

Count: 288
Abstract ID: 208
subject: Integrative system: Neurogenetics
Presentation Type: Poster

Identification of key gene modules and hub genes associated with the fast development of Amyotrophic lateral sclerosis by weighted gene co-expression network analysis (WGCNA)

Submission Author: Azad Khosh

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Background and Aim : Amyotrophic lateral sclerosis (ALS) is a progressive neurodegenerative disease that is caused by degeneration and death of motor neurons in the brain and spinal cord. Weighted gene co-expression network analysis (WGCNA) is a novel and powerful method that detects gene interactions according to their co-expression similarities. In the present study, WGCNA was used to identify the gene modules and hub genes particularly correlated with the development of ALS in mouse models.

Methods : A gene expression dataset was downloaded from the Gene Expression Omnibus (GEO) database and used WGCNA to dynamically study the changes of co-expression genes in the rapidly progressing mutant SOD1 mice models (129Sv-SOD1G93A) and the slowly progressing mutant SOD1 mice models (C57-SOD1G93A). Modules that highly correlated with ALS development, were carried out functional enrichment analysis for annotation, visualization, and integration discovery. Cytoscape software was used to construct a co-expression network and extracted the hub genes of modules. Differential gene expression analysis was done by the limma R package to obtain the expression level of hub genes.

Results : Ten modules were detected in total and the brown module was extraordinarily correlated with ALS development (cor=0.97, P=1e?200). The top three functions of this module included: regulation of inflammatory response (P=1e?06), positive regulation of response to external stimulus (P=1e?06) and regulation of tumor necrosis factor production (P=1e-06). Cytoscape software identified the top four hub genes of the brown module that included: CLEC7A, CCL6, MPEG1 and AU020206. The expression levels of mentioned hub genes were significantly up-regulated in the rapidly progressing mutant SOD1 mice models compared to the slowly progressing mutant SOD1 mice models.

Conclusion : The present study demonstrated that hub genes such as CLEC7A, CCL6, MPEG1 and AU020206 are highly correlated with the ALS development and may be used as new targets for the detection or treatment of ALS.

Keywords : ALS development ; WGCNA; Differential gene expression; hub genes

Count: 289
Abstract ID: 121
subject: Neural Injuries and Neurodegenerative Disorders: Ischemia, Stroke, and Neurovascular Disorders
Presentation Type: Poster

Neuroprotective effects of vanillic acid against oxidative stress induced by cerebral hypoperfusion in male rats

Submission Author: Seyed Esmaeil Khoshnam

Seyed Esmaeil Khoshnam[1]

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Background and Aim : Free radical-induced neural damage implicated in the pathogenesis of ischemic stroke and antioxidants have protective activity, and neuroprotective strategies investigated to minimize oxidative stress after ischemic events. In the present study, we aimed to investigate the neuroprotective potential of vanillic acid (VA) in an animal model of transient bilateral common carotid artery occlusion and reperfusion (BCCAO/R)

Methods : Adult male Wistar rats (250–300 g) randomly divided into four groups and submitted to either cerebral hypoperfusion-reperfusion or a sham surgery after two-weeks of pretreatment with VA and/or normal saline. To induce the animal model of hypoperfusion, bilateral common carotid arteries occluded for 30 min, followed by 72 h of reperfusion. Subsequently, animals decapitated under deep anesthesia and their hippocampi removed for ELISA assays

Results : The results showed that cerebral hypoperfusion significantly increased the level of malondialdehyde (MDA) and decreased enzymatic [glutathione peroxidase (GPx), superoxide dismutase (SOD), and catalase (CAT)] antioxidant activity in the hippocampus of vehicle- pretreated group as compared to the sham-operated group ($p < 0.01$, $p < 0.01$, $p < 0.05$, and $p < 0.01$ respectively). While, pretreatment of rats by VA significantly decreased MDA levels and also increased GPx, SOD and CAT enzymatic activity in BCCAO/R rats compared with untreated rats ($p < 0.01$, $p < 0.01$, $p < 0.05$, and $p < 0.01$ respectively)

Conclusion : Our data confirm that VA has antioxidant activity against cerebral hypoperfusion-induced oxidative stress via enhancement of cerebral antioxidant defense, and it can potentially serve as an antioxidant agent against cerebrovascular insufficiency states

Keywords : Vanillic acid, Cerebral hypoperfusion, Oxidative stress, Rat

Count: 290
Abstract ID: 313
subject: Emotion, Motivation
and Behavior: Reward and the Brain
Presentation Type: Poster

Role of orexin-1 receptors within the nucleus accumbens in acquisition and expression of methamphetamine-induced conditioned place preference in the rats

Submission Author: Elahe Khosrowabadi

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Background and Aim : • The orexins are hypothalamic neuropeptides and it has been revealed that orexinergic system, which has an essential role in learning, sleep, arousal, feeding, stress and pain processing, is also involved in addiction and reward-related behaviors. It has been found that both orexin-1 and −2 receptors are distributed throughout the reward circuitry such as nucleus accumbens (NAc), ventral tegmental area (VTA), hippocampus and prefrontal cortex and it has been found that orexins antagonists has been reduced the self-administration of heroin and ethanol.Accordingly, the present study aimed to survey the effects of the intra-NAc microinjection of SB334867 (a selective OX1R antagonist) in the acquisition and expression of CPP induced by methamphetamine in rats in order to extend our knowledge about the role of orexin receptors within the NAc.

Methods : . fifty-three adult male Wistar rats (220–250 g) were entered in a CPP paradigm. Bilateral microinjections of different doses of SB334867 (1, 10 and 30 nM/0.5 DMSO) into the NAc were done 10 min before subcutaneous injection of methamphetamine (1 mg/kg) during 5-day conditioning (acquisition) phase. The CPP scores and locomotor activity of animals were recorded by video tracking system and Ethovision software.

Results : As a result, we find out that the orexinergic receptors in NAc are associated with the acquisition and expression of methamphetamine-induced CPP.

Conclusion : The antagonist may be a potential and promising therapeutic agent to suppress drug-related behaviors in the rats.

Keywords : • Reward, Orexin receptors, Nucleus accumbens, methamphetamine, Acquisition, expression, Conditioned place preference, Rat.

Count: 291
Abstract ID: 540
subject: Emotion, Motivation
and Behavior: Neural Basis of Human Behavior
Presentation Type: Poster

The effect of relaxation on the psychological well-being of people with Parkinson's disease

Submission Author: Yaser kiani rad

Yaser kiani rad[1]

1. MA in clinical psychology

Background and Aim : The purpose of this study was to investigate the effect of relaxation on the psychological well-being of people with Parkinson's disease. Was.

Methods : The research design was quasi-experimental with pretest-posttest with experimental and control group. The population of this study, all patients with Parkinson's disease 34 to 50 years old in Imam Khomeini Hospital in Ilam in the second half of 2018.Thirty people were selected by convenience sampling and assigned to experimental and control groups. . After selecting the sample group, pre-test was administered before relaxation training and after one month, post-test was performed. The instrument used in this study was Reif psychological well-being questionnaire. Data were analyzed using covariance statistical method.

Results : The mean scores of the two groups in the post-test with pre-test effects were significantly different in the psychological well-being of people with a history of Parkinson's disease.

Conclusion : The results showed that relaxation (muscle relaxation) was effective on increasing the level of psychological well-being in people with a history of Parkinson's disease.

Keywords : Relaxation, Psychological Well-being, Parkinson.

Count: 292
Abstract ID: 376
subject: Computational Neuroscience: Computational Tools
Presentation Type: Oral

MirTarget computational algorithm in prediction and identification of miRNA target genes for neuroscience research

Submission Author: Maryam Koraei

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Background and Aim : MicroRNAs (miRNAs) are small noncoding RNAs that regulate gene expression by mRNA degradation or preventing translation. They function by binding to 3′ untranslated region (3′UTR) on target mRNAs. Nowadays, miRNAs are considered as one of the main regulators of many biological processes in animals including early development, cell differentiation, proliferation, and apoptosis. According to previous researches, miRNAs are highly expressed in central nervous system and involved in many neural functions and diseases. There is also an increasing interest to examine role of different miRNAs in brain physiology and pathological conditions. For functional miRNA analysis, one critical first step is to identify genes targeted by the miRNA. Identification of miRNAs targets by computational analysis has low cost compared to the experimental molecular methods. In the past decade, some algorithms and databases have been designed and developed to help researchers in predicting miRNA target genes. However, reliable microRNA target prediction is an important and still unsolved computational challenge. All of the developed predicted algorithms employ microarray profiling data or crosslinking and immunoprecipitation (CLIP) sequencing data. Although CLIP data is widely employed in the prediction of microRNA target genes but it has been revealed that miRNA binding to target genes do not result necessarily in functional downregulation of the target genes. One of the other strategies in target prediction is identification of transcripts downregulated by overexpression of miRNAs.
Methods : In this study, we assessed a new computational algorithm known as MirTarget in identification of miRNA targets. This algorithm is accessible via miRDB site (www.miRDB.org). This algorithm combines CLIP binding dataset and miRNA overexpression data to detect miRNA target genes. All datasets including 96 features of miRNAs is combined to design the target model of MirTarget, which is important for both miRNA binding and target functional downregulation. The final model of MirTarget uses both data of microRNA binding and downregulation of target genes to compute a probability score that reflects the statistical assessment of the prediction accuracy for an individual target site.
Results : The predicted target genes by MirTarget model are ranked in an output table in which each target gene takes a score from 0-100 range. Genes with score above 50 are possible targets for an individual miRNA and the score of 100 is the target gene with the highest probability as a target gene of the interested miRNA.
Conclusion : Based on the results of the prediction of miRNA transcript target by MirTarget model and comparing it to other previous algorithms, we conclude that MirTarget algorithm is more accurate than the other previous models like TargetScan and miRWalk in predicting the correct and functional targets. Finally, we can propose MirTarget algorithm for miRNA target prediction in neuroscience researches.
Keywords : microRNA;Target prediction;Bioinformatics;Computational tools;Neuroscience Research

Count: 293
Abstract ID: 569
subject: Pain and Sensory Systems: Vision
Presentation Type: Oral

Long-Term Plasticity of Corticogeniculate Projection Neurons in Layer VI of the Mouse Visual Cortex

Submission Author: Masoumeh Kourosh Arami

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1. Iran University of Medical sciences

Background and Aim : Most neurons in layer VI of the visual cortex project to the dorsal lateral geniculate nucleus (dLGN). These corticogeniculate projection neurons (CG cells) receive top-down synaptic inputs from upper layers (ULs) and bottom-up inputs from the underlying white matter (WM). Use-dependent plasticity of these synapses in layer VI of the cortex has received less attention than in other layers.

Methods : In the present study, we used a retrograde tracer injected into dLGN to identify CG cells, and, by analyzing EPSPs evoked by electrical stimulation of the UL or WM site, examined whether these synapses show long-term synaptic plasticity. Theta-burst stimulation induced long-term poten-tiation (LTP) of activated synapses (hom-LTP) and long-term depression (LTD) of nonactivated synapses (het-LTD) in either pathway.

Results : The paired-pulse stimulation protocol and the analysis of coefficient variation of EPSPs suggested postsynaptic induction of these changes except UL-induced het-LTD, which may be presynaptic in origin. Intracellular injection of a Ca 2 -chelator suggested an involve-ment of postsynaptic Ca 2 rise in all types of long-term plasticity. Pharmacological analysis indicated that NMDA receptors and type-5 metabotropic glutamate receptors are involved in WM-induced and UL-induced plasticity, respectively. Analysis with inhibitors and/or in transgenic mice suggested an involvement of cannabinoid type 1 receptors and calcineurin in UL-induced and WM-induced het-LTD, respectively.

Conclusion : These results suggest that hom-LTP and het-LTD may play a role in switching the top-down or bottom-up regulation of CG cell function and/or in maintaining stability of synaptic transmission efficacy through different molecular mechanisms.

Keywords : Plasticity,Corticogeniculate ,Layer VI , Visual Cortex

Count: 294
Abstract ID: 643
subject: Development: Evolution of Developmental Mechanisms
Presentation Type: Poster

Modeling the human cognitive impairment candidate genes in Drosophila Melanogaster: report on a systematic study on olfactory classical conditioning behavior test

Submission Author: Ramin Lashani zadegan

Ramin Lashani zadegan[1], Mohammad Reza Habibi[2], Kimia Kahrizi[3], Hossein Najmabadi[4], Farzaneh Larti[5]

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Background and Aim : Basic biological, physiological, and neurological properties are conserved between human and Drosophila Melanogaster. About 75% of human disease-causing genes have a functional homolog in Drosophila. The mechanism of memory formation and learning process are also similar between human and fruit fly. Drosophila Melanogaster can recognize and remember odors to make a response, based on neurotic plasticity. Studies of olfactory learning in Drosophila have provided key insights into the brain mechanisms underlying learning and memory.

Methods : One type of olfactory learning, olfactory classical conditioning, consists of learning the contingency between an odor with an aversive or appetitive stimulus. In the frame of a series of experiments to investigate the role of novel intellectual disability (ID) candidate genes in cognitive behavior, we used Pavlovian conditioning in a T-Maze apparatus. The expression of orthologues of candidate genes were decreased in Drosophila neurons by UAS-GAL4 knock-down system, with the help of a pan neuronal GAL4 (elav).

Results : Learning and short term memory following a conditional stimulus were tested. Our primary results showed that knock down of the orthologue of YIF1B (Yip1 interacting factor homolog B) gene in neurons of Drosophila Melanogaster is lethal in late pupal stage, and impaired the olfactory behavior and thus short term memory formation

Conclusion : Further investigations into the role of other cognitive impairment candidate genes including RABAC1(prenylated Rab acceptor protein 1), and RHBDF1(rhomboid 5 homolog 1) are ongoing.

Keywords : Drosophila melanogaster ; Functional Study, Olfactory learning ; Pavlovian conditioning

Count: 295
Abstract ID: 186
subject: Emotion, Motivation and Behavior: Motivation and Emotion
Presentation Type: Oral

Ego Depletion in Learning (Brain Fatigue): Why don't some people go on doing long-term activities? (An Idea based on Ego Depletion)

Submission Author: Saadi Lotfali

Saadi Lotfali[1], Behnam Javandel[2]

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Background and Aim : In order to achieve certain goals, people need to work continuously for a long time such as studying for one year to pass the university entrance examination or language tests such as IELTS and TOEFL or other similar activities. However, some people cannot complete this route and leave their activity in the middle of the route, thus their planning is not implemented. The present study investigates the idea of Ego Depletion on this topic to propose a relationship between this fact and Ego Depletion.

Methods : In the present study, 37 articles and scientific resources related to Ego Depletion were studied, and the results of researches on the effects of this phenomenon on self-control behaviors and volition in different cases were studied. Then, the physical and mental status, study process, and lifestyle of 5 people who were troubled in the course of their work were evaluated through interview.

Results : Individuals with mental activity (long-term study) have progressed well at first, but when they reached their best (ideal conditions) or after a while, they became weaker and stopped studying. In addition to the lack of severe physical exhaustion, they had no subjective elasticity of study at all. The mental abilities involved in learning and motivation have been declined. These conditions appear to be very similar to the Ego Depletion phenomenon and have been like the complete depletion of mental energy including memory in storing new information as in brain saturation from study and Lack of capacity for new information being studied. Under these conditions, people stop working for a relatively long time and stop studying. After a long time, the motivation to restart is also reduced, and sometimes there is a feeling of inadequacy, failure and hopelessness.

Conclusion : The cognitive functions involved in learning appear to have a certain capacity and unbalanced activity stops the activity of these parts. Therefore, as with Ego Depletion and its occurrence that is necessary to observe the required points, it is essential to be careful in studying and utilizing the cognitive functions involved. Thus, paying attention to the factors that influence ego Depletion in continuous and long-term activities can enable people to work for a long time and achieve their goals. Lack of attention causes them stop in the middle of the way. Therefore, it is recommended to adopt a lifestyle based on Ego Depletion for long-term activities.

Keywords : Ego Depletion, Self-Control, Learning, Long-Term activities, Cognitive functions

Iran University of Medical Sciences

Iranian Neuroscience Society

Count: 296
Abstract ID: 187
subject: Neurorehabilitation and Regeneration: Psycho-cognitive Rehabilitation
Presentation Type: Oral

Comparing the features and effectiveness of traditional and local games with rehabilitation software

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Background and Aim : Traditional and local games are activities that involve cognitive and physical functions. Some studies have shown the effectiveness of these activities on enhancing cognitive and psychological abilities. The present study aims to investigate the characteristics of traditional and local games as well as rehabilitation software and computer games and then compares them.

Methods : The present study has studied scientific resources including books, articles, the research on the nature and effectiveness of traditional and local games as well as rehabilitation software and video games. Then it compares the results obtained and finally it concludes by arguing about them.

Results : Traditional and local games involve multiple physical and mental abilities. In most traditional games there is movement. In addition to motor cortex; attention and concentration; memory, speed, fine and large muscle movements; sensory functions are involved in these games as well. Psychologically, these games, due to being in a group and interpersonal or group interactions, promote social skills. Natural situations, objective tools, real interpersonal relationships, social interactions and the ability to learning not only make these games more appealing, but also practice skills in real life situations. The scope of these games is wide-ranging and needs to be monitored to improve the abilities of those involved. Rehabilitation games and software often incorporate and reinforce the above functions. These tools directly affect the intended cognitive functions such as attention, memory, and the like, while being systematically and explicitly performed in an unrealistic or virtual space. There is no real interpersonal relationship thus later it is necessary to apply the skills in the real environment. The effectiveness of these tools is very precise and their scope is quite specific and limited to the content and purpose of the intervention software. Performing these exercises require technology such as computers, software, and sometimes the supervision of a rehabilitation expert or psychologist.

Conclusion : Traditional and local games, such as rehabilitation software, are capable of enhancing cognitive functions. Therefore, according to the benefits of each study, this study offers three suggestions. First, design rehabilitation programs that include traditional and local games (no need for technology). Second, traditional games should also be used alongside with rehabilitation software (combining games with software). Third, to design new (local) games that incorporates cognitive functions and uses them as cognitive rehabilitation techniques.

Keywords : Traditional games, Cognitive rehabilitation, software, Rehabilitation, Games

Count: 297
Abstract ID: 35
subject: Emotion, Motivation and Behavior: Behavioral Pharmacology
Presentation Type: Poster

Effect of Risperidone on Emotion Regulation in Children with Autism Spectrum Disorder

Submission Author: Gohar Lotfi

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Background and Aim : Autism is a neurodevelopmental disorder that impresses on social interaction, verbal and nonverbal communication and stereotyped behavioral patterns. For people with autism spectrum disorder (ASD), difficulties in social-emotional understanding have been identified as the key problem areas. Various clinical trials suggested that risperidone (RIS) was beneficial in the treatment of autism spectrum disorder (ASD) in children and adolescents. Literature focusing on the cognitive effects of atypical antipsychotics in children and adolescents is exceptionally sparse. In this study, we tried to examine effect risperidone on emotion regulation abilities of ASD

Methods : The research method was quasi-experimental with pretest-posttest. According to inclusion and exclusion criteria, 10 autistic participants (10 to 16 years old) selected. Participants diagnosed with ASD according to Diagnostic and Statistical Manual of Mental Disorders, fifth edition (DSM-5). They received intervention (RIS) for three months. Participants were tested before and after intervention by emotion regulation and social skills questionnaire (ERSSQ).

Results : Findings of study showed (according to c analysis between before and after of intervention in participants) there is no significant changes in social cognition ability in children with ASD.

Conclusion : the result of this study indicated RIS might have no impressive effect on social skills and emotion regulation ability in autistic children. Therefore, this result recommended for specialist who interested in working with autistic children

Keywords : emotion regulation, social cognition, autism spectrum disorder

Count: 298
Abstract ID: 116
subject: Emotion, Motivation
and Behavior: Motivation and Emotion
Presentation Type: Poster

The Effectiveness of Mindfulness Training on Anger Control, Perceived Stress and pain perception in Students with Migraine

Submission Author: Mohsen Lotfi

Mohsen Lotfi[1]

1. Department of Psychology, Instructor of Shahid Mofteh University of Culture, Iran & Tehran

Background and Aim : Studies have also shown the relationship between anger and stress with migraine. The purpose of this study was to evaluate the effectiveness of mindfulness training on controlling anger, perceived stress and pain perception in students with migraine.

Methods : The present study is a quasi-experimental study. The study population consisted of students of Azad University of Tehran, 50 of whom were selected and assigned into intervention and control groups. Participants in both groups completed the Cohen's Perceived Stress Scale, pain Perception scale and Spielberger's Anger at pre-test, post-test and follow-up. The intervention group received 8 sessions of mindfulness training, the control group was given only the usual information about the migraine. Data were analyzed using SPSS-20 software and ANOVA with repeated measures.

Results : showed that in the intervention group the mean scores of anger control, Pain perception and perceived stress after mindfulness training were significantly lower than the control group ($P < 0.001$). The results in follow-up were also significant ($P < 0.001$).

Conclusion : Regarding the effectiveness of mindfulness training in migraine, it is recommended to use non-pharmacological interventions such as mindfulness along with medication treatments.

Keywords : mindfulness, anger, perceived stress, pain perception, migraine

Count: 299
Abstract ID: 115
subject: Emotion, Motivation
and Behavior: Motivation and Emotion
Presentation Type: Poster

The Effectiveness of Mindfulness Training on Rumination, Anxiety and Quality of life in Mothers of Children with Nephrotic Syndrome

Submission Author: Mohsen Lotfi

Mohsen Lotfi[1]

1. Department of Psychology, Instructor of Shahid Mofteh University of Culture, Iran & Tehran

Background and Aim : This study aimed to The Effectiveness of Mindfulness Training (MT) on Rumination, Anxiety and Quality of life in Mothers of Children with Nephrotic Syndrome.

Methods : In this semi-experimental study, pre-test and post-test, 52 mothers of children with Nephrotic Syndrome referred to Children Medical Center who were selected, randomly. The MT group was received 8 session of Mindfulness skills. While the control group did not receive any interventions. To collect data, Beck Anxiety Inventory (BAI), ruminative response scale (RRS) and sf-36.

Results : After the intervention, the mean scores of anxiety and rumination in the MT group were significantly lower than the control group. In addition, the mean scores of quality of life in the MT group were significantly higher than the control group ($P < 0.001$).

Conclusion : These findings suggest that Mindfulness Training is an effective intervention in reducing anxiety and rumination and promoting quality of life for Mothers of Children with Nephrotic Syndrome.

Keywords : Mindfulness, Anxiety, Rumination, Quality of life, Nephrotic Syndrome

Count: 300
Abstract ID: 300
subject: Emotion, Motivation
and Behavior: Motivation and Emotion
Presentation Type: Poster

Anxiety and testosterone and estradiol Changes in Transient Congenital Hypothyroidism Rats: The Effects of Treadmill Exercise and Sex Hormones Treatment

Submission Author: Diman Mahdi

Diman Mahdi[1], Leila Derafshpour[2], Abbas Ali Vafaei[3], Ali Rashidy-Pour[4]

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Background and Aim : Mother's transient thyroid abnormalities during pregnancy and lactation exhibit behavioral disorders in offspring in adulthood. On the other hand, in offspring, changes in sex hormones have been observed due to changes in thyroid hormones, which can exacerbate these disorders. The beneficial effects of exercise and sex hormones treatment on anxiety are well-known. The present study examined the effects of the combined treatment of treadmill exercise and sex hormones treatment on anxiety-like behaviors and serum sex hormones levels in transient congenital hypothyroid rats.

Methods : Hypothyroidism induced by 6-propyl-2-thiouracil by adding to the drinking water from the 6th day of gestation to the 21st postnatal day (PND 21). From PND 28 to 47, 17β-estradiol treatment in female and testosterone in male rat pups began and the rats were forced to run on treadmill for 30min once a day. On PND48, the anxiety-like behaviors of all rats tested.

Results : Hypothyroidism induced by 6-propyl-2-thiouracil by adding to the drinking water from the 6th day of gestation to the 21st postnatal day (PND 21). From PND 28 to 47, 17β-estradiol treatment in female and testosterone in male rat pups began and the rats were forced to run on treadmill for 30min once a day. On PND48, the anxiety-like behaviors of all rats tested.

Conclusion : These findings showed the developmental hypothyroidism adverse effects in adulthood and it is likely that the effects of various treatments in adulthood will be influenced by the critical periods of Brain development.

Keywords : transient hypothyroidism, exercise, spatial memory, BDNF, rat, estrogen, testosterone

Count: 301
Abstract ID: 404
subject: Development: Other
Presentation Type: Oral

Neonatal isolation increases anxiety-like behavior in developing and adult male rats

Submission Author: Maryam Mahmoodkhani

Maryam Mahmoodkhani[1], Fatemeh Rezaei[2], Maedeh Ghasemi[3], Leila Derafshpour [4], Nasrin Mehranfard [5]

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Background and Aim : Neonate is suggested to represent a developmental period of increased vulnerability to stress due to the immaturity of adaptive processes of coping. An inability for proper adaptation to stressors during the developmental period has been proposed to contribute to psychiatric disorders in adulthood.

Methods : In this study, we examined the effects of a type of early life stress; i.e. maternal separation or neonatal isolation, in which rat pups are isolated individually for 3 h per day during postnatal days (PND) 2–11 on anxiety-like behaviors in adolescence (PND 35) and adult (PND 60) male rats. Anxiety tests were conducted in an open field arena and total distance traveled and relative time spent in the center of the open field were recorded.

Results : Results indicated that neonatal isolation significantly decreased time spent in the open field center in both adolescence and adult rats compared to control rats. Furthermore, adolescence and adult rats with neonatal isolation exhibited decreased activity levels in open field relative to non-handled control rats.

Conclusion : These results are consistent with increased anxiety levels in both developing and adult rats exposed to neonatal isolation, and suggest that early life stress likely can cause persistent changes in controlling systems related to adaptive response to the stressors, which in turn adversely affect future social behaviors in subsequent periods of life.

Keywords : stress, neonatal isolation, anxiety, development , adolescence

Count: 302
Abstract ID: 278
subject: Cognition: Learning and Memory
Presentation Type: Oral

Diagnostic manifestations of total hemispheric glucose metabolism ratio in neuronal network diaschisis: diagnostic implications in Alzheimer's disease and mild cognitive impairment

Submission Author: Alireza Majdi

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2. Department of Nuclear Medicine, Odense University Hospital, Odense, Denmark
3. Department of Nuclear Medicine, Odense University Hospital, Odense, Denmark

Background and Aim : We tested the hypothesis that lateralized hemispheric glucose metabolism may have diagnostic implications in Alzheimer's disease (AD) and mild cognitive impairment (MCI)

Methods : We performed FDG-PET/CT in 23 patients (mean age 63.7 years, range 50–78, 17 females) diagnosed with AD (n = 15) or MCI (n = 8) during a six-month period in 2014. Ten neurologically healthy individuals (HIs) (mean age 62.5 years, range 43–75, 5 females) served as controls. A neuroimaging expert provided visual assessment of diaschisis. The total hemispheric glucose metabolism ratio (THGr) was calculated, and with area-under the curve of receiver operating characteristics (AUC-ROC) we generated a BNetwork Diaschisis Test (NDT)^.

Results : The qualitative detection of cerebral (Ce) and cerebellar (Cb) diaschisis was 7/15 (47%), 0/8 (0%), and 0/10 (0%) in AD, MCI, and HI groups, respectively. Median cerebral THGr was 0.68 (range 0.43–0.99), 0.86 (range 0.64–0.98), and 0.95 (range 0.65–1.00) for AD, MCI, and HI groups, respectively (p = 0.04). Median cerebellar THGr was, respectively, 0.70 (range 0.18–0.98), 0.70 (range 0.48–0.81), and 0.84 (range 0.75–0.96) (p = 0.0138). A positive NDT yielded a positive predictive value of 100% for the presence of AD or MCI and a 86% negative predictive value for healthy brain. Moreover, the diagnostic manifestation of THGr between MCI and AD led to a positive predictive value of 100% for AD, but a negative predictive value of 42.9% for MCI.

Conclusion : Patients with AD or MCI had more pronounced diaschisis, lateralized hemispheric glucose metabolism and lower THGr compared to healthy controls. The NDT distinguished AD and MCI patients from HIs, and AD from MCI patients with a high positive predictive value and moderate and low negative predictive values. THGr can be a straightforward source of investigating neuronal network diaschisis in AD and MCI and in other cerebral diseases, across institutions.

Keywords : Diaschisis . Neuronal network . FDG-PET/CT . Alzheimer's disease . Mild cognitive impairment

Count: 303
Abstract ID: 576
subject: Neuropsychiatry and Psychology: Evidence-Based Psychology
Presentation Type: Poster

The effect of relaxation on depression in elderly people with Alzheimer's disease

Submission Author: Marzieh Makhdoomi

Marzieh Makhdoomi[1], saeed salehi[2]

1. MA in psychology
2. PhD candidate in clinical psychology

Background and Aim : Alzheimer's disease is one of the most common causes of loss of mental function.The purpose of this study was to investigate the effect of relaxation on depression in the elderly with Alzheimer's disease.

Methods : The research design was quasi-experimental with pretest-posttest with experimental and control group. The population consisted of elderly patients with Alzheimer's welfare center in Sari in 2018.Thirty people were selected by convenience sampling and divided into two experimental and control groups. The instruments used in this study were Beck Depression Inventory. After selecting the sample group, pre-test was administered before relaxation training and after one month, post-test was performed.

Results : The mean depression score of the elderly with Alzheimer's at the post-test increased compared to the pre-test.

Conclusion : The results showed that relaxation had an effect on depression in the elderly with Alzheimer's disease.

Keywords : Relaxation, depression, elderly people with Alzheimer's disease.

Count: 304
Abstract ID: 264
subject: Neuropsychiatry and Psychology: Obsessive Compulsive Disorders
Presentation Type: Oral

Fluvoxamine combination therapy with tropisetron for obsessive-compulsive disorder patients: A placebo-controlled, randomized clinical trial

Submission Author: Farzaneh Malekpour

Mohammadreza Shalbafan[1], Farzaneh Malekpour[2], Borna Tadayon Najafabadi[3], Kiandokht Ghamari[4], Seyed-Ali Dastgheib[5], Arash Mowla[6], Elham Shirazi[7], Mehrdad Eftekhar Ardebili[8], Shahin Akhondzadeh[9]

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Background and Aim : About 50% of obsessive-compulsive disorder patients still suffer significant symptoms even after the recommended first-line therapy. This demonstrates the necessity to investigate strategies to improve alleviation of symptoms. The main objective of this study was to investigate the efficacy of a 5-hydroxytryptophan 3 receptor antagonist, tropisetron, as an adjuvant therapy to selective serotonin reuptake inhibitors, in ameliorating obsessive-compulsive disorder symptoms.

Methods : Men and women between the ages of 18–60 years diagnosed with obsessive-compulsive disorder, based on DSM5, who had a Yale-Brown obsessive compulsive scale score of more than 21 were recruited in a double-blinded, parallel-group, placebo-controlled, clinical trial of 10 weeks to receive either tropisetron (5 mg twice daily) and fluvoxamine (100 mg daily initially followed by 200 mg daily after week 4) or placebo and fluvoxamine. The primary outcome of interest in this study was the Yale-Brown obsessive compulsive scale total score decrease from baseline.

Results : One hundred and eight participants were equally randomized into two groups; 48 participants in each group finished the trial. The Yale-Brown obsessive compulsive total score significantly dropped in both groups while the tropisetron group participants experienced a significantly higher decrease in their scores (Greenhouse-Geisser $F(1.53–65.87)=3.516$, p-value=0.04). No major adverse effect was observed in any of the groups.

Conclusion : This trial showed a significant efficacy for tropisetron over placebo in treatment of obsessive-compulsive disorder symptoms when added to fluvoxamine.

Keywords : Serotonin 5-HT3 receptor, obsessive-compulsive disorder, randomized controlled trial, selective serotonin reuptake inhibitors, tropisetron

Count: 305
Abstract ID: 596
subject: Neural Injuries and Neurodegenerative Disorders: Demyelinating Disorders
Presentation Type: Poster

Dietary intakes of antioxidants and IgG-NMO in patients with neuromyelitis optica; is there any correlation?

Submission Author: Mohammad Bagher Maljaei

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Background and Aim : Neuromyelitis optica (NMO) is a severe relapsing inflammatory CNS demyelinating disease that predominantly affects the optic nerves and spinal cord. The discovery of specific immunoglobulin G (IgG) antibodies binding to CNS astrocytic membranes identified the target as the water channel aquaporin-4 (AQP4) and Studies have demonstrated the pathogenic potential of these autoantibodies. Immune-mediated inflammation and oxidative stress are involved in the pathology of autoimmune disease, and dietary antioxidants have the potential to alleviate autoimmune disease symptoms by targeting inflammation and immune modulation.The aim of This study was to investigate the relation between dietary intakes of antioxidants and IgG-NMO titration in serum.

Methods : Dietary intake of antioxidant components (vitamin E, Vitamin C, zinc, selenium, beta-carotene and alpha-tocopherol) were assessed with food frequency questionnaire (FFQ) with 168 items and investigate with IgG-NMO titration in 29 patients with NMO.

Results : IgG-NMO titration in 9 patients was positive and in others was negative. Dietary intakes in all components of antioxidants, in patients with negative IgG-NMO was more than in patients with positive IgG-NMO but only dietary intakes of vitamin C was significant between patients with positive and negative IgG-NMO (p= 0. 033) and in others components does not significant different between two groups. Age and gender were not confounder variables.

Conclusion : Physiological variation in dietary intakes of antioxidants may exert a major impact on IgG-NMO synthesis and inflammation in patients with NMO and antioxidants may dose play role in prognosis of NMO.

Keywords : neuromyelitis optica ; Immunoglobulin G ; antioxidant ; nutrient

Sun exposure, vitamin D intake, serum vitamin D and IgG-NMO in patients with NMOSD; Are the any association?

Submission Author: Mohammad Bagher Maljaei

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Background and Aim : Neuromyelitis optica Spectrum Disease (NMOSD) or Devic's disease is a recurrent disease of the central nervous system (CNS) that affects mainly the optic nerves and spinal cord. In recent years, the condition has raised enormous interest among scientists and clinical neurologists, fuelled by the detection of a highly specific serum immunoglobulin (Ig)G autoantibody (NMO-IgG) targeting the most abundant astrocytic water channel AQP4The immunological significance of vitamin D was first recognised when the vitamin D receptor (VDR) was identified in lymphocytes in both T- and B cells. The aim of this study was to investigate the relationship between sun scale exposure, dietary vitamin D,serum vitamin D levels and IgG-NMO titration in serum.

Methods : 25-hydroxyvitamin D (25(OH)D) and IgG-NMO were assessed in serum in 29 patients with NMO. Also dietary intake of vitamin D were assessed with food frequency questionnaire (FFQ) with 168 items and average sunshine exposure was measured using a questionnaire to quantify the amount of time patient spent in the sun.

Results : IgG-NMO titration in 9 patients was positive and in others was negative. All of dietary intakes of witamin D, sun exposure scale and serum levels of vitamin D in patients with negative IgG-NMO is more than positive IgG-NMO; although sun exposure scale different was not significant. Age, gender and latitude were not confounder variables.

Conclusion : Physiological variation in vitamin D may exert a major impact on IgG-NMO synthesis in patients with NMO and vitamin D may dose play role in pathogenesis of NMO.

Keywords : Neuromyelitis optica ; vitamin D ; Diet ; Sun exposure ; Immunoglobulin G

Count: 307
Abstract ID: 213
subject: Neuropsychiatry and Psychology: Other
Presentation Type: Oral

Environmental Enrichment: A Double-Edged Sword Therapeutic Approach for Autistic-Like Behaviors

Submission Author: Monireh Mansouri

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5. Centre for Perinatal Medicine and Health, Institute of Neuroscience and Physiology, Sahlgrenska Academy, University of Gothenburg, Gothenburg, Sweden

Background and Aim : Enrichment of the environment has been suggested as a possible treatment for neurodevelopmental disorders such as autism. Although the benefits of this therapeutic method have been reported in some animal models and human studies, given the unknown pathophysiology of autism as well as a number of conflicting results, the potential for further studies is still open. To date, no results have been reported regarding the effects of environmental enrichment on autism-related behaviors induced by maternal separation in animal models.

Methods : In this study, 40 newborn Wistar rats were divided into 4 groups of 10 each. To develop the autism model, pups were separated from the mother for the first 14 days of life for 3 hours daily (9-12 am). In the treated groups, rats were housed in enriched environment from weaning day (PND 21) to the dates of behavioral tests. At adolescence (PND42-50), behavioral tests including direct social interaction, sociability, repetitive behaviors, anxiety behavior, and locomotion were performed on the rats. Plasma BDNF level was also measured by ELISA technique.

Results : This study showed that maternal separation leads to autistic-like and anxiety behaviors with elevated plasma BDNF levels (p <0.05). Environmental enrichment was effective in reducing repetitive behaviors induced by maternal separation (p <0.05). But it did not improve impaired social and anxiety behaviorseven decreased social interaction and increased anxiety in control rats (p <0.05). Enriched environment also increased plasma BDNF level in both control and maternal separation groups (p <0.05).

Conclusion : Factors such as animal model, genetic background, details of enrichment of environment including periods of treatment, age can affect the quality of the results. Therefore, more extensive studies in this area are needed. But, the important thing is that the response to a treatment is not always the same between individuals. Accordingly, in psychological disorders especially with an unknown etiology such as autism, many aspects must be considered for the indicating suitable therapeutic approach.

Keywords : Environmental enrichment; Autism; maternal deprivation

Count: 308
Abstract ID: 549
subject: Emotion, Motivation
and Behavior: Motivation and Emotion
Presentation Type: Poster

The Effectiveness of Cognitive-Behavioral Group Therapy on Stress Acceptance in Veterans with Post Traumatic Stress Syndrome

Submission Author: Esmayil Mardani zadeh

Esmayil Mardani zadeh[1], Pezhman Barimani[2], Alireza Islami[3]

1. PhD candidate in clinical psychology
2. PhD candidate in clinical psychology
3. MA in clinical psychology

Background and Aim : The purpose of this study was to determine the effectiveness of cognitive-behavioral group therapy on stress acceptance in veterans with post-traumatic stress syndrome.

Methods : The design of this study was pretest and posttest with control group. The statistical population included all those who referred to the Veterans Affairs Unit of Shahr-e-Kord in the first three months of the year. Based on the purpose of the research and the research design used, a sample of 30 veterans who were referred to the Veterans Affairs Unit of Shahr-e-Kord Foundation was selected by purposeful sampling.Subjects were randomly divided into two experimental and control groups (15 as experimental group and 15 as control group). Questionnaires used for data collection were standardized stress questionnaire (DASS-21). Subjects in the experimental group received group cognitive behavioral therapy for 8 weeks each week in one hour treatment session and the control group did not receive any intervention.

Results : The mean score of stress acceptance of post traumatic stress disorder war veterans in post-test was significantly different from pre-test.

Conclusion : The results showed that group cognitive-behavioral therapy had an impact on the acceptance of stress in veterans with PTSD.

Keywords : Cognitive-behavioral group therapy, Acceptance of stress, Veterans, Post-traumatic stress.

Count: 309
Abstract ID: 377
subject: Cognition: Learning and Memory
Presentation Type: Poster

The effects of Olibanum on memory impairment induced by Scopolamine in rats

Submission Author: Narges Marefati

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Background and Aim : Olibanum as a resin of Boswellia serrata (B. serrata) from Burseracea family has been proposed as an effective anti-inflammatory and antioxidant agent. We are suggested that this resin can attenuate the generation of oxidant agents and reinforce the anti-oxidant agents to improve memory impairment induced by scopolamine.

Methods : Forty male Wistar rats were divided into four groups (n=10 each group): Control (diluted DMSO + saline), Scopolamine (diluted DMSO + 1mg/kg Scopolamine), Scopolamine- Oliban 100 and Scopolamine- Oliban 200 (Olibanum 100 mg/kg or 200 mg/ kg before Scopolamine). Learning and memory performance and biochemistry data were evaluated in all groups.

Results : Scopolamine administration increased the duration and distance to find the platform in the Morris water maze(MWM) test in compare to control group in 5 days ($P<0.05$ to $P<0.001$) while, scopolamine decreesed the latency to enter to the dark compartment after receiving the sock in passive avoidance (PA) test ($P<0.001$). Pretreatment with both doses of Olibanum enhanced performances of the rats in MWM ($P<0.05$ to $P<0.01$) and PA test ($P<0.01$ to $P<0.001$). scopolamine also increased hippocampal MDA levels ($P<0.001$) while, decreased CAT, SOD and thiol ($P<0.001$). Olibanum increased hippocampal CAT, SOD and thiols ($P<0.01$ to $P<0.001$).

Conclusion : Olibanum showed an anti-inflammatory and antioxidant properties. It could improve memory impairment induced by scopolamine.

Keywords : Boswellia serrate, Olibanum, Memory impairment, oxidative stress

Count: 310
Abstract ID: 237
subject: Neural Injuries and Neurodegenerative Disorders: Neurotoxicity, Neuroprotection, Inflammation
Presentation Type: Poster

: Study the effect of milnacipran on neuropathic pain induced by cisplatin in mice

Submission Author: Jino Marufi

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Background and Aim : cisplatin is used as an antineoplastic agent to treat solid tumor. However, it significantly develops peripheral neuropathy (dose-limiting side effect). In this study we investigated the effect of milnacipran on cisplatin-induced neuropathic pain in mice.

Methods : Cisplatin was injected intra-peritoneally (2.3 mg/kg) once per day for 5 days followed by 5 days of rest for 2 cycles. Mice received milnacipran, intraperitoneally (i.p., 20 mg/kg) every day for 15 consecutive days. Naloxone was administered to evaluate milnacipran's mechanism of action. Withdrawal response to thermal stimulation was measured to evaluate allodynia and hyperalgesia with hot plate and tail flick tests.

Results : Repeated injection of cisplatin significantly induced neuropathic pain. Milnacipran at the dose of 20 mg/kg demonstrated analgesic effect in a significant manner. So that, milnacipran caused an increase in time latency when it was co-administered with cisplatin. Additionally, intra-peritoneal coadministration of naloxone with milnacipran did not suppressed the analgesic effect of milnacipran.

Conclusion : The result of this study indicated that consecutive intra-peritoneal administration of milnacipran produces analgesic effect in chemotherapy-induced neuropathic pain. The author suggests the milnacipran as a promising treatment for chemotherapy-induced neuropathic pain. However, more experimental and clinical trial is needed to address this issue.

Keywords : milnacipran, cisplatin, neuropathic pain

Count: 311
Abstract ID: 70
subject: Emotion, Motivation
and Behavior: Reward and the Brain
Presentation Type: Oral

MicroRNAs including Let7C1, mir133b and mir365b in the prefrontal cortex are involved in the development of morphine tolerance

Submission Author: Kayvan Masoudi

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Background and Aim : The mesocorticolimbic dopaminergic system from the midbrain to the nucleus accumbens, striatum, aymgdala and prefrontal cortex (PFC) has a pivotal role in reward related learning and addiction to the opioids. A significant amount of evidence also indicates that microRNAs (miRNAs) play an important role in drug addiction. However, few studies have examined the expression of miRNAs in the PFC under conditions of chronic morphine treatments. In his study, we aim to examine the expression of miRNAs including Let7C1, mir133b and mir365b in the PFC after repeated administrations of morphine.

Methods : Two experimental male Wistar rats received a regimen of 8 days treatments of saline (1 ml/kg) or morphine (10 mg/kg) twice daily. The analgesic tolerance to the repeated injections of morphine was assessed with a hotplate apparatus on day 8 of the schedule. Then, the expressions of miRNAs including Let7C1, mir133b and mir365b were evaluated by using a qPCR method.

Results : Hotplate test of analgesia confirmed the induction of morphine tolerance after 8 days of the repeated injections. The qPCR results revealed that the expression of Let7C1, mir133b and mir365b in morphine tolerant group were significantly increased compared to the saline-treated group.

Conclusion : We conclude that the increases in the expression of miRNAs including Let7C1, mir133b and mir365b are involved in changes in the gene expressions in the PFC underlying morphine addiction and tolerance.

Keywords : Morphine tolerance, miRNAs, Prefrontal cortex, Let7C1, mir133b, mir365b

Oral & Poster Presentations

8th Basic and Clinical Neuroscience Congress
December 18-20, 2019
Razi Hall, Tehran, Iran

Iran University of Medical Sciences

Iranian Neuroscience Society

Count: 312
Abstract ID: 40
subject: Neuropsychiatry and Psychology: Addiction (Drug, Alcohol, Internet, Food) and Gambling
Presentation Type: Poster

Early maternal deprivation alters the properties and neuronal responses of lateral paragigantocellularis nucleus to morphine

Submission Author: Hossein Masrouri

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Background and Aim : Genetic and environmental factors play a significant role in drug addiction. Early maternal deprivation (MD) is one example of early-life stress and can make long-term alterations in brain circuits, particularly in brain regions that are involved in drug abuse. In MD animals, increment in susceptibility to drug dependence and abuse has been reported. In this study, the effect of MD on the basic activity and neuronal response to acute morphine exposure in lateral paragigantocellularis (LPGi) nucleus was studied.

Methods : Male Wistar rats were used in this study. On postnatal day one (PND1), the litters were assigned to a MD paradigm. For this purpose, pups were separated from their dams daily for 3h during 14 days and taken care of until the experiment day (PND 70). Then, the basal firing rate and neuronal response to acute morphine administration of the LPGi nucleus were recorded by in vivo extracellular single unit recording.

Results : Attenuation of morphine-induced inhibition and also enhancement of the onset latency of morphine effect on inhibitory LPGi neurons were observed in MD rats compared to control animals. MD also attenuated coefficient of variation of interspike intervals in LPGi neurons, inhibitory and excitatory response to morphine.

Conclusion : We have shown that MD during infancy induces long-term alterations in neuronal properties of the LPGi nucleus, which are involved in opiate tolerance and dependence. Therefore, early maternal deprivation may change susceptibility to drug of abuse in adulthood.

Keywords : Maternal deprivation, morphine, extracellular single unit recording , LPGi

Count: 313
Abstract ID: 144
subject: Motor Systems
and Movement Disorders: Posture and Gait
Presentation Type: Poster

Psychometric properties of the Berg balance scale in idiopathic Parkinson' disease in the drug off-phase

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Background and Aim : Having an appropriate tool for assessment of the balance status during the drug off-phase in idiopathic Parkinson's disease (PD) is relevant for clinical and research settings. Our objective was to assess the clinimetric properties of the Berg balance scale (BBS) during drug off-phase in PD.

Methods : The balance of 98 PD patients (mean age ± SD, 59.19 ± 10.88 years) was evaluated with the BBS. Other assessments in the study included the Fall Efficacy Scale-International (FES-I), Functional Reach Test (FRT), Section II of the Unified Parkinson's Disease Rating Scale-3.0, Parkinson's Disease Questionnaire-39 (PDQ-39), and Schwab and England Activities of Daily Living Scale. All evaluations took place during the drug off-phase. Internal consistency and inter- and intra-rater reliability were evaluated by Cronbach's alpha coefficient and intraclass correlation coefficient, respectively. Dimensionality was explored by factor analysis. Discriminative validity was tested by comparing BBS scores between PD patients with and without a history of falling.

Results : Internal consistency was high ($\alpha = 0.98$), as were intra- and inter-rater reliability (ICC = 0.98 and 0.95, respectively). Factor analysis identified only one dimension for the BBS, whose convergent validity with FES-I, FRT, and domain mobility of the PDQ-39 were moderate or high (rS = |0.60–0.74|). Correlation of BBS with functional scales and PDQ-39 Summary Index was moderate (rS = |0.45–0.62|). Finally, the BBS showed a moderate strength to discriminate between PD patients with and without a history of falling.

Conclusion : Our study suggests that BBS has satisfactory internal consistency, reliability, and construct validity for measuring functional balance in people with PD during the drug off-phase.

Keywords : Psychometric properties . Berg balance scale . Parkinson' disease . Drug off-phase

Count: 314
Abstract ID: 143
subject: Motor Systems
and Movement Disorders: Movement Disorders (Parkinson, Huntington's, ALS, Ataxia, edication-induced Movement Disorders)
Presentation Type: Poster

Reliability and validity of Fall Efficacy Scale-International in people with Parkinson's disease during On- and Off-drug phases

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Background and Aim : Since fear of falling may be one of the main problems in people with Parkinson's disease (PD), its assessment with valid tools is necessary in both drug phases. This study was carried out to investigate the psychometric attributes of the Fall Efficacy Scale-International (FES-I) in people with PD, both in On and Off phases.

Methods : One hundred twenty-four patients with PD (mean age±standard deviation, 60.33±12.59 years) were assessed with the FES-I, both in On- and Off-drug phases. Dimensionality, internal consistency, and test-retest reliability were respectively explored by means of factor analysis, Cronbach's alpha, and Intraclass Correlation Coefficient. Convergent validity of FES-I was established with Visual Analog Scale-Fear of Falling, Berg Balance Scale, Functional Reach Test. Parkinson's Disease Questionnaire-39 and Unified Parkinson Disease Rating Scale-Activities of Daily Living were also applied. Discriminative validity was tested between patients with and without a history of falling.

Results : Factor analysis showed two factors for On- and one factor for Off-drug phase. Internal consistency (α=0.96, On phase; 0.98, Off phase) and test-retest reliability (0.94; 0.91) were satisfactory in both drug phases. A moderate/high correlation (rS=|0.50-0.70|) between FES-I and Visual Analog Scale-Fear of Falling, Berg Balance Scale, Functional Reach Test. Parkinson's Disease Questionnaire-39 and Unified Parkinson Disease Rating Scale-Activities of Daily Living was achieved in both drug phases too. The sensitivity of FES-I to discriminate Parkinson's disease with and without falls showed moderate effect size in both phases.

Conclusion : This study verified that FES-I is unidimensional, reliable and valid to measure the Fear of Falling during On- and Off- drug phases in people with PD.

Keywords : Fall Efficacy Scale-International, Parkinson's disease, On- and Off- drug phases

Count: 315
Abstract ID: 83
subject: Cognition: Learning and Memory
Presentation Type: Poster

Effect of probiotics mixture on memory function, inflammation markers and oxidative stress in Alzheimer's disease rats

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Background and Aim : The most important pathogenesis of Alzheimer disease (AD) is linked to $A\beta$ deposition, inflammation markers and oxidative stress. Probiotics are microorganisms that are believed to be benefits to human and animals. Probiotics reduced some oxidative stress biomarkers and inflammatory cytokine in some cases. For this reason the aim of this study was to determine effects of probiotics mixture on biomarkers of oxidative stress and inflammatory factors in AD model rats.

Methods : In this study 50 rats were randomly divided to 5 group: control group, sham group , control+rivastigmine, AD group injected the $A\beta1\text{-}40$ intra-hippocampal and the AD+probiotics group, which was injected $A\beta1\text{-}40$ intra-hippocampal and 2ml (1010 CFU) probiotics (Lactobacillus reuteri ,Lactobacillus rhamnosus, Bifidobacterium infantis) orally once a day for 10 weeks. Memory and learning were measured by Morris water maze, for detection of beta-amyloid plaque, we used congored staining, oxidative stress measured by malondialdehyde level (MDA) and superoxide dismutase activity (SOD) and for assessment of inflammation marker (IL-1β and TNF-α) in the hippocampus, used ELISA kits.

Results : . In treatment group spatial memory significantly was improved measured by Morris water maze. Probiotic administration decreased beta amyloid plaques in AD brain rats. MDA decreased and SOD increased in treatment group. Finally our result showed that probiotics reduced IL-1? and TNF-? as inflammation markers that have important role in AD.

Conclusion : This study showed probiotics could improve memory deficit, decrease beta amyloids formation, inflammation and oxidative stress in Alzheimer model.

Keywords : Alzheimer, probiotic, inflammation, stress oxidative

Count: 316
Abstract ID: 270
subject: Emotion, Motivation
and Behavior: Stress and the Brain (Stress-modulated Pathways, Stress and Cognition, Stress Related Disorders)
Presentation Type: Poster

The assessment of prior stress effects on spatial working memory in the animal model of demyelination

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Background and Aim : Considering the increasingly stressful lifestyles and the frequency of day-to-day emotional disturbance in modern societies, numerous studies have focused on the effects of stress as an important risk factor in progression or even in the onset of many disorders such as Multiple Sclerosis. In this study, the effect of psychological and physical stress concerning myelin degradation was investigated. The spatial working memory assessment as evidence of brain demyelination severity in response to stress exposure in the cuprizone-induced model of Multiple Sclerosis was investigated and the response related to the demyelination extremity.

Methods : healthy female Wistar rats were randomly divided into 4 groups (i.e. control group (Cont), non-stress cuprizone treated (N-CPZ), physical stress- cuprizone treated (P-CPZ) and emotional stress-cuprizone treated (E-CPZ), n=7 per group. At 5 weeks of age, a witness stress foot-shock paradigm was used to induce stress for 5 days. Followed by demyelination through 6 weeks of cuprizone administration, the Y-maze test was performed to assess the spatial working memory.

Results : proportional to the Y-maze task analysis, both P-CPZ and E-CPZ groups revealed more impaired spatial memory compared to the N-CPZ group (p <0.01). Importantly, spatial memory deficiency was remarkable in the E-CPZ group (p <0.01).

Conclusion : the oligodendrocyte death, the disintegration of the myelin sheath and consequently neurodegeneration leads to memory deficit and locomotion impairment. It is reflected by lower scores on the novel arm visits in the Y-maze test. Severe degeneration in both E-CPZ and P-CPZ groups, particularly the E-CPZ rats, reveals the deteriorating impacts of the background stress.

Keywords : Stress; Demyelination; Working memory; Y- maze

Count: 317
Abstract ID: 238
subject: Neural Injuries and Neurodegenerative Disorders: Demyelinating Disorders
Presentation Type: Poster

Elevation of HIF-1α in whole brain of the animal model of Multiple Sclerosis may be a potential target for controlling of this disease

Submission Author: Seyed Alireza Mesbah-Namin

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Background and Aim : Experimental autoimmune encephalomyelitis (EAE) is the best known and available animal model of multiple sclerosis (MS) and useful model for studying the mechanisms of this disease and other autoimmune disorders. A plenty of evidence indicated that mitochondrial dysfunction may be involved in cell death of white and gray matters of CNS in the patients with MS. The aim of this study was to evaluate specific activity of the cytochrome oxidase (COX), ATP, and hypoxia-inducible factor 1 alpha (HIF-1α) in whole brain tissues of the EAE mouse model of MS disease.

Methods : Nine mice for inducing EAE model using Hooke kit, EK-2110, MOG 35-55/CFA emulsion, Pertossis toxin (PTX), 6 mice as the control group (with CFA and PTX injections) and 6 mice as the sham group (with injection with PBS). Measurement of specific COX activity, ATP and HIF-1α levels were performed in all of the mice's brain tissues.

Results : The data indicated that specific COX activity and ATP levels were decreased significantly in EAE mice, whereas HIF-1α levels increased significantly in EAE compared to the sham and negative control mice. Decreasing COX activity and ATP levels could be due to the mitochondrial dysfunction in whole brains of the EAE mice and an imbalance between energy demands might be additional reason for neuronal loss in MS lesions. Meanwhile, significant elevation levels of HIF-1α in the hypoxia-like injuries of EAE mice brains reinforce the hypothesis that the HIF-1α induction may provide prevention of neuronal death by compensating energy loss under hypoxia-like conditions in EAE mice brains.

Conclusion : This preliminary study concluded that the HIF-1α induction in whole brains of EAE mice model of MS may be a potential target for controlling of progression of the MS disease.

Keywords : Multiple Sclerosis; EAE; Cytochrome oxidase; ATP; HIF-1α

Count: 318
Abstract ID: 226
subject: Neural Injuries and Neurodegenerative Disorders: Neurodegenerative Disorders
Presentation Type: Oral

Neuroprotective effect of exogenous melatonin on the noradrenergic neurons of adult male rats' locus coeruleus nucleus following REM sleep deprivation

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Background and Aim : Melatonin is primarily secreted by the pineal gland in dark phase of the circadian rhythm. In addition to its role as an internal sleep facilitator, melatonin acts as an antioxidant, anti-inflammatory and neuroprotective agents. Recently (how recent do you mean? it's not recent) melatonin has been introduced as a therapeutic strategy for sleep disorders. Hence, in the present study, we studied the neuroprotective effects of pre- and post-treatment of melatonin in locus coeruleus nucleus (LC) of rapid eye movement (REM) sleep deprived (REM-SD) male adult rats

Methods : Adult male rats of control, sham and trial groups were used in this study. By using flower-pot technique, short term REMSD was induced. Exogenous melatonin (ExMe) was intraperitoneally injected in two forms of pre and post treatment. The protein level of cleaved caspase-3, the number and density of tyrosine hydroxylase (TH) positive neurons and the microglia population in LC were studied by western blot and immunohistochemistry respectively. Morphological changes of LC nucleus and its neurons were also studied by using stereological analysis.

Results : The number of neurons and volume of LC was reserved in animals that had received post-RSD ExMe. Apoptosis significantly was decreased comparing to RSD and Pre-RSD animals. Melatonin post-treatment of RSD rats also decreased cleavage of caspase-3 and increased reduced glutathione content in LC. Moreover, immunohistochemistry analysis showed an increase in the number of TH positive neurons and a decrease in microglia migration.

Conclusion : Based on our findings antioxidant properties of exogenous melatonin could play a critical role in certain types of sleep disorders

Keywords : Locus Coeruleus, Exogenous melatonin, REM sleep deprivation

Count: 319
Abstract ID: 363
subject: Cognition: Learning and Memory
Presentation Type: Poster

How infrared transcranial laser photobiomodulation affect chronic stress-induced learning and memory impairment in comparison with methylene blue in mice

Submission Author: Reza Meynaghizadeh zargar

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Background and Aim : Methylene-blue (MB) and transcranial Photobiomodulation (tPBM) protect neural cells by stimulating the mitochondrial function. Both of these interventions force the complex IV of the electron transport chain. In this study, we examined the effects of tPBM and MB alone or combined with each other in chronic stress-induced learning and memory impairment.

Methods : Animals were randomly assigned into 5 groups (12 BALB/c mice in each group) (i) "control", (ii) "laser Sham + normal saline (NS)", (iii) "tPBM + NS", (iv) laser "Sham + MB" and (v) "tPBM + MB". All animals, rather than animals in the control group, were undergone unpredictable chronic mild stress (UCMS) conditions for 4 weeks. At the same time, the treatments involved tPBM (810 nm, 10Hz pulsed, 8 J/cm2 each section; three times per week) and MB (daily intraperitoneal, 0.5 mg/kg) were administered in corresponding groups. The anxiety was measured by the elevated plus maze (EPM) test. Also, learning and memory performance were measured by novel object recognition (NOR) and Barnes maze tests. The molecular levels of nitric oxide (NO) in brain tissue and serum levels of cortisol were measured by spectrophotometric methods.

Results : Results of EPM tests revealed that UCMS caused anxiety-like behaviors by decreasing the Open Arena Entrance (%OAE) and Open Arena Time (%OAT). Learning and memory impairments were also observed in NOR and Barnes maze tests. The exploration time of the novel and familiar objects were the same in the "Sham + NS" group. Also, the discrimination index (DI) of the "Sham + NS" group in the NOR test was also significantly less than the control group. Time spent in the target quadrant and correct/wrong relative time was also significantly decreased in the "Sham + NS" group compared to "control" animals. Treatment with tPBM and MB alone or in combination has significantly returned these behavioral impairments to normal conditions. The levels of NO in the brain as well as serum cortisol levels significantly increased in the "laser sham + NS" animals compared to the "control" group. tPBM and MB treatments were capable of reversing these changes to normal conditions.

Conclusion : Treatment with tPBM and MB alone or in combination showed significant therapeutic effects on learning and memory impairments under UCMS conditions. The improvements in "tPBM + MB" group were also the same as single treatments. This could be due to the fact that single treatments completely reversed the damage of UCMS to normal conditions and the combined treatment could not go more ahead.

Keywords : Transcranial Photobiomodulation, Methylene Blue, Unpredictable chronic mild stress, Learning and Memory

Count: 320
Abstract ID: 420
subject: Development: Neurogenesis and Gliogenesis
Presentation Type: Poster

Study of Expression of miR-124 in Neural-like cells Differentiated of Mesenchymal Stem Cell Derived from human Amniotic membrane (hAMSCs).

Submission Author: Seyede sepideh Mir Mohammad hosseini ooshani

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Background and Aim : The amniotic membrane is the innermost of the three layers forming the fetal membranes and a valuable source of mesenchymal stem cells. The mesenchymal stem cells isolated from amniotic membrane have unique features including Self-Renewal ،developing and repairing damaged tissues and failure to stimulate the immune system. they are easily available and do not cause any controversial issues in their recovery and applications. Since the nervous system after injury who limited capacity to repair itself, For this reason in this study, amniotic membrane-derived mesenchymal stem cells were differentiated into nerve cells to investigate their differentiative features.

Methods : After the isolation of stem cells from amniotic membrane in order to approve their mesenchymal features, their surface marker were evaluated by flow cytometry. Then, they were differentiated to osteocyte and adipocyte to assess their differentiative potential. Finally, the cells were exposed to the neural differentiation medium including Retinoic acid and ascorbic acid and at last was studied morphology of cells. The expression of miR-124 were studied with Real-Time PCR method.

Results : Flow cytometry analysis showed that the expression of CD73, CD44, CD29, CD105 and CD73 markers was positive and the expression of CD34 and CD45 markers was negative. Calcium accumulation and adipose vesicles respectively showed the differentiation of mesenchymal cells to osteocyte and adipocyte. Morphology of mesenchymal cells was spindle shaped that was changed under the influence of neural differentiation medium and tails similar to axon and dendrites were observed in them. Real-Time PCR results showed the expression of miR-124 increase in the neural like-cells compared to the control group.

Conclusion : According the results, since miR-124 was identified as one of the up-regulated miRNAs in the mammalian brain, it was identified as a neurogenic initiator.thus increasing of miR-124 indicate the differentiation of mesenchymal stem cells toward neural cells.

Keywords : Mesenchymal Stem Cell, Amniotic membrane, Neural- like Cell, miR-124.

Count: 321
Abstract ID: 641
subject: Cognition: Other
Presentation Type: Poster

The Role of Mind Wandering and Cognitive Flexibility in Predict of Subjective Optimism in High School Girl Students

Submission Author: Iraj Mirkhan

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Background and Aim : Having a sense of satisfaction and optimism among students can provide a basis for improving the performance of female students. The purpose of this study was to investigate the role of mind wandering and cognitive flexibility in predicting the subjective optimism of female high school students.

Methods : This study was a descriptive-correlational one. The statistical population of the study is 7600 high school female students in the first semester of 2018-2019 in Urmia. Using a cluster random sampling method, 370 students were selected and completed the Career et al mind wandering questionnaire, denis et al cognitive flexibility and Scheier et al subjective optimism scale. Data were analyzed using Pearson correlation coefficient and multiple regression.

Results : The results showed that there was a positive relationship between cognitive flexibility and students' subjective optimism ($P < 0.01$) and a negative relationship between mind wandering and subjective optimism ($P < 0.05$). Also, %24 of the variance of students' subjective optimism was predicted by research variables.

Conclusion : The results indicated the role of mind wandering and cognitive flexibility in predicting the subjective optimism of female students. therefore, according to the results and by promoting cognitive flexibility and reducing the level of mind wandering, one can promote the subjective optimism of female students.

Keywords : Mental Wandering, Cognitive Flexibility, Subjective Optimism

Count: 322
Abstract ID: 645
subject: Neuropsychiatry and Psychology: Other
Presentation Type: Poster

Comparison of Quality of Life and Uncertainty Intolerance in Infertile and normal women

Submission Author: Iraj Mirkhan

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Background and Aim : Infertility is a phenomenon that has a wide range of negative psychological consequences that can affect quality of life and personality traits such as uncertainty intolerance. The purpose of this study was to compare the quality of life and uncertainty intolerance in infertile and normal women.

Methods : The study was causal-comparative. The statistical population of the study includes all infertile women in Urmia during the second 6 months of 1977. 35 infertile women and 35 normal married women were selected through available sampling method and completed the questionnaires of quality of life and uncertainty intolerance.

Results : The results showed that there was a difference between the quality of life of infertile and normal women (P <0.05) and the quality of life of normal women was better. The results also showed that there was no difference between uncertainty tolerance in infertile and normal women (P <0.05).

Conclusion : According to the results, it can be said that infertility has a negative effect on the quality of life of the affected women and reduces it. Therefore, emphasizing on the results can be provided by plans to improve the quality of life of this group of women.

Keywords : Quality of Life, Uncertainty Intolerance, Infertile Women

Count: 323
Abstract ID: 219
subject: Neural Injuries and Neurodegenerative Disorders: Ischemia, Stroke, and Neurovascular Disorders
Presentation Type: Oral

Evaluation of the preventive effects of Gallic acid on behavioral disorders and oxidative stress of brain following global cerebral ischemia/reperfusion in rats

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Background and Aim : Global cerebral ischemia/reperfusion (I/R) may occur after any of several clinical conditions such as cardiac arrest and coma due to accident. In the present study we aimed to investigate the probable effects of gallic acid (GA) on spatial memory, depressive-like behavior, and oxidative stress induced by permanent arteria vertebralis heat-blocked and temporary carotid arteries occlusion/reperfusion (4VO) in rats.

Methods : Fifty six male Wistar rats (250-300 g) were divided randomly into four groups; 1) Sham, 2) I/R, 3) GA + I/R and 4) Sham + GA. 4VO was induced after 10 days of pretreatment by GA. 72 h later 4VO induction behavioral tests, and oxidative stress evaluation were done.

Results : The data showed that GA administration improved the spatial memory and depressive-like behavior in rats that were damaged by 4VO-I/R. In addition biochemical observations showed that the oxidative stress in the brain tissue were significantly improved in injured rats by 4VO-I/R who got GA (p <0.01).

Conclusion : Our findings suggest that GA pretreatment can reverse behavioral disorders and reduce oxidative stress. These actions may induce by its antioxidant and anti-inflammatory properties.

Keywords : cerebral ischemia; gallic acid; oxidative stress; behavioral disorders; rat

Count: 324
Abstract ID: 492
subject: Neural Injuries and Neurodegenerative Disorders: Spinal Cord Injury
Presentation Type: Poster

Possible role of probiotics in treatment of nerve injuries

Submission Author: Mehrnaz Moattari

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Background and Aim : The gut microbiota is defined as all microorganisms including yeasts and bacteria and their respective genetic material in the GI tract that have been applied as supplements to other medications or as alternative treatments for patients suffering from nerve injuries. This review focused on the possible effects of probiotics in treatment of nerve injuries.

Methods : This literature review is based on English-language articles sourced from PubMed without date limitation using the following terms. Microbiom composition, Nerve injury, Probiotics, Spinal cord injury.

Results : The association between microbiota and nerve injuries is reported by mediation of spinal cord. In the "super systems" which is referred to spinal cord, intestine and immune system, the microbiom composition in the intestine is reported to be changed after thoracic spinal cord injury as follows. Alternations in the sequencing of 16s rRNA showed reduction in filum Bacteroidetes, enhancement of filum Firmicutes as major bacterial taxa and a mild change in Anaeroplasmatales, Turicibacterales, and Lactobacillales as minor bacterial taxa.

Conclusion : Gut dysbiosis following nerve injuries varies at different times, also depends on level and severity of injuries. Since nutrition has an important role in the gut microbioata composition, possible utility of approved probiotics including natural sources such as yogurt, kefir, or sauerkraut can be effective and accessible treatments would benefit millions of people who suffer from nerve injuries globally. The mechanism can be explained by a reduction in differentiation of CD4+ T cells into Th2 cells, and inhibition of inflammatory cytokines such as TNF-α.

Keywords : Nerve injury, Probiotics, Spinal cord injury

Count: 325
Abstract ID: 487
subject: Neural Injuries and Neurodegenerative Disorders: Other
Presentation Type: Poster

Effects of Wharton's Jelly Mesenchymal Stem Cells and Chitosan/Poly ethylene Oxide after Sciatic Nerve Injury

Submission Author: Mehrnaz Moattari

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Background and Aim : Inflammation and oxidative stress are considered to be important physiological conditions associated with the development of sciatic nerve injury. There have been attempts to alter the status of severest sciatic nerve injury in different investigations, but none of which have reliably altered the outcome. Nuclear factor erythroid 2-related factor 2 (Nrf2)/antioxidant response element (ARE) signaling pathway plays an important role in the central nervous system.

Methods : Thirty rats of severely damaged sciatic nerve have been operated for end-to-end suture and reconstruction of the sciatic nerve using SCs and Chitosan/poly ethylene oxide (Cs/PEO). Cs/PEO serves to maintain the position of the SCs. An average of 5×104 of non-autologous Wharon's jelly SCs. Total RNA was extracted from tissues using TRIzol, according to the manufacturer's instructions to analysis of Nrf2 expression. Data are presented as specific ratio between the gene of interest and the reference gene (glyceraldehyde-3-phosphate dehydrogenase, GAPDH) normalized to vehicle-treated group (control).

Results : Nrf2/ARE pathway was found to mediate Akt-enhanced nerve growth factor-induced axon growth. Our results showed that mRNA expression of Nrf2 was increased by real-time PCR compared to control and sham groups ($p < 0.05$).

Conclusion : Using a mixture of SCs and Chitosan/Poly ethylene Oxide (Cs/PEO) as a synthetic scaffold had the neuro-protective effects after SNI-induced oxidative stress and inflammatory response was mediated by activation of Nrf2.

Keywords : Synthetic scaffold; Non-autologous stem cells;Sciatic nerve injury

Count: 326
Abstract ID: 99
subject: Cognition: Working Memory
Presentation Type: Poster

The effect of social support, and peer rejection on working memory performance in middle school

Submission Author: Mahdi Moazzen

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Background and Aim : Evidence is accumulating that working memory performance and development, which is important for children's learning, does not only influence social experiences, but also can be altered and influenced by social experiences. Specifically, positive social interactions with peers, teachers and parents may promote working memory, while negative interactions with these important social actors may hinder working memory. The current study, by using an experimental approach, investigates whether parent and teacher support buffer the negative effect of peer rejection on working memory performance.

Methods : Children from seventh to ninth grade (aged 11–15, n=151) filled out questionnaires and completed an experiment. Working memory performance (Spatial Span (SSP)) was measured at the beginning of the experiment. Next, peer rejection was manipulated (Cyberball Task), followed by a manipulation of parent and teacher support (video / audio message) and a posttest measure of working memory.

Results : Our results demonstrated no main effect of peer rejection and parent or teacher support (F=1.15, p=.284). Social acceptance did moderate the buffering effect of teacher support for working memory performance (F=7.44, p=.007). Meaning, for children who score at the high end of the perceived social acceptance scale, teacher support seems to have a positive effect, while working memory performance is stable in the control conditions.

Conclusion : Although experiences of social rejection may have negative impacts on children's social and emotional functioning, results of the current study suggest that in general there is no difference in working memory performance before and after a single experience of social exclusion by an unknown peer. Results do indicate that for children who feel socially accepted a supportive teacher can promote working memory performance. So teachers should be aware of the role of their relational support for children's cognition and learning. As such, schools should be aware of the importance of social factors for children's cognitive functioning and learning and incorporate actions to assure a positive social environment within the school and classroom contexts.

Keywords : Working memory, Peer rejection, Teacher-child relationship, Parent-child relationship, Relational support

Count: 327
Abstract ID: 48
subject: Motor Systems
and Movement Disorders: Motor Neurons and Muscle
Presentation Type: Poster

Motor imagery as a valid complementary method for medical therapies

Submission Author: Jahangir Mobarezpour

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Background and Aim : Imagination is a cognitive process that is based on internal brain information and not on external environment data by sensory system. Motor imagery is an imagination method which relates to motor system in brain. An important feature in brain motor system is that all of four acts of execution, observation, imitation and imagination of movement have common neural network. For this reason, this neural network is called mirror neuron system. With using this common feature, This paper shows the motor imagination can be used as a complementary for different medical therapies.

Methods : The meta analysis of many studies in current years which obtained from PubMed data source show that motor imagery can be used a complementary method for medical therapies in different fields.

Results : Results of using of motor imagery in different medical fields contain brain-computer interface (BCI) systems to help the paralyze persons; to improve the motor functions for stroke patients; to recover motor quality of the elderly; to rehabilitate the post-surgical of the upper or lower limb immobilization; and to reduce the chronic musculoskeletal or neuropathic pains. At BCI systems, after training of disable persons, they learn how a motor imagination for a limb is coded for a special function. In this systems, the motor imagery signals for any limb movement is obtained and translated to machine code to perform a special function, such as different functions of a wheelchair. Motor imagery signals at this systems can be the EEG, ECOG or intracortical recording. Of course, the EEG technique as a noninvasive method is more user-friendly and easy to use; but on the other hand it needs a powerful feature extraction and classification technique, because the EEG signals have low signal to noise ratio (SNR).The advantages of BCI system based on motor imagery in comparison to other methods are less training and less attention by disable persons which can be tedious. The logic of using motor imagery for different patients that suffer from immobility is that the imagination a movement causes to reactivate the neural motor network for that movement. This amplifies its circuit and reorganize it to be gained better movement quality. Of course in these cases, studies show that combination of motor imagery and observation of action have more efficiency for rehabilitation. This is due to strengthening the neural motor network by these two methods which called explicit and implicit methods, respectively. The mirror therapy and using the rubber hand illusion are examples for these cases. About reducing chronic pains, although the correlation between pain neural circuit and neural motor system is unclear, but the pain can play the role as a biomechanic constraint for actual movement of the body limbs. So with having this negative correlation, studies show using motor imagery for increasing the motion range of body limbs can reduce chronic pains.

Conclusion : So according these up to date results, it is recommended that motor imagination as a complementary medical method to be used more in our country. It is because, using this method is easy and inexpensive and can improve the therapy quality.

Keywords : Motor imagery; Brain-computer interface; Brain stroke; post-surgical limbs immobilization; chronic pains

Count: 328
Abstract ID: 122
subject: Motor Systems
and Movement Disorders: Other
Presentation Type: Poster

The Effect of Virtual Family-based Sensory Integration Intervention on the Fine and Gross Motor Skills of Children with Down Syndrom

Submission Author: Hanieh Moftakhari Khalili Nejad

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1. Author
2. Supervisor
3. Supervisor
4. Advisor

Background and Aim : The aim of this study was to evaluate the effect of virtual family-based sensory integration intervention on fine motor and gross motor skills of children with Down Syndrome

Methods : The research was semi-experimental and the design was pretest, post-test with a control group. 30 of children with Down syndrome who were under 12 years old and their IQ were between 50 to 70 were selected and were randomly assigned to the experimental and the control groups. Then Lincoln Oseretsky Motor Development Scale (1950) was conducted on all of these students. The students in the experimental group experienced virtual family- based sensory integration intervention (based on Ayres and Down theories) for 20 sessions (10 sessions at school and 10 sessions on skype) in 75 days and the control group received no intervention and waited in the waiting list. After these sessions, in the posttest step, Oseretsky scale was done on the control and experimental groups. The collected data was analyzed using spss software and analysis of variance.

Results : The findings showed that virtual family-based sensory integration intervention can significantly increase motor skills (gross skills, fine skills and equilibrium skills) of children with Down syndrome.

Conclusion : It can be concluded that this intervention can be used for developing motor skills in children with Down syndrome.

Keywords : Sensory integration, Family-based, Virtual, Motor skills, Down syndrome.

Count: 329
Abstract ID: 351
subject: Cognition: Working Memory
Presentation Type: Oral

Transcranial Direct Current Stimulation (tDCS) on Prefrontal and Parietal Areas Enhances Motor Imagery

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Background and Aim : Previous studies have reported dorsolateral prefrontal cortex (DLPFC) and posterior parietal cortex (PPC) activation during spatial working memory (SWM) performance, so we decided to investigate the effect of Transcranial direct current stimulation (t-DCS) in order to comparing between these two areas

Methods : Sixty healthy right-handed students (30 female, 29 male with mean age= 24 years) were randomly assigned in anodal (A=30) and sham group (S= 29) and each of them into F4 and P4 subgroups respectively. Computerized Corsi Block Tapping task (CBT) has been used to measure the spatial working memory. T-DCS intervention consists of 5 daily sessions with a 24-hour interval between them and in each session direct current of 1.5 mA for 15 minute over F4 and P4 area

Results : A significant enhancement of SWM span and faster response were seen after anodal tDCS in both forward and backward direction. Moreover in comparison right DLPFC stimulation could induce faster reaction time than right PP

Conclusion : DLPFC as an element of fronto-parietal network is activated in stimulus neural processing during retention stage. Our finding provide new evidence in comparison of stimulation between two main activated cortical areas (PP & DLPFC) during visuospatial WM

Keywords : Transcranial Direct Current Stimulation;motor imagery; Prefrontal;Parietal

The relationship of metacognitive voice with learning style preference and dominant behavioral type

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Background and Aim : Learning styles have a close relationship with academic and job performances. It has been also accepted that behavioral types, in an organized condition, can improve the performance. Learning styles and behavioral types may have the relations. This study evaluates the relationship between learning styles and behavioral models in the students of Ferdowsi University of Mashhad, Iran.

Methods : The statistical population included all the undergraduate students in disciplines of Engineering, Basic Science and Human Science at the Ferdowsi University of Mashhad, Iran. The sample size was determined using Cochran's formula and the respondents were selected by classical sampling method. The data were collected using Kolb's learning style and also DISC behavioral types questionnaires and analyzed using SPSS 23 and LISREL softwares.

Results : The results showed that the most students studied have outcome-oriented behavioral types. The engineering students showed task-oriented and extraversion behavioral types, suggesting that the students with extraversion behavioral model have convergent style and the students with task-oriented behavioral types have accommodator behavioral style. The results also showed that Basic Science students have an analytical-introversion behavioral type and task-oriented model. Preference- accommodator learning style is observed in the analytical behavioral style, but the preference-assimilator learning style is observed in the task-oriented behavioral style. Most Human Science students showed a people-oriented behavioral style. The divergent style is the preferred learning style in people-oriented behavioral style, but the accommodator style is the preferred learning style in people-oriented and task-oriented behavioral style.

Conclusion : Taken together, there is a significant relationship between learning styles and behavioral types in the students studied. The results can be used for academic and job successes.

Keywords : Behavioral models, Individual differences, Learning styles, Metacognition

Count: 331
Abstract ID: 344
subject: Special topics: Converging Technologies   (NBIC: Nano-Biotech-Information-Cognitive), euroscience and Nanotechnology, Neuroscience and Biotechnology, Neural Tissue Engineering
Presentation Type: Poster

Contrast and spatial frequency modulation for diagnosis of amblyopia: An electrophysiological approach

Submission Author: Alireza Mohamadi

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Background and Aim : Amblyopia is a developmental disorder of central visual pathways and occurs when an amblyogenic factor affects the visual system of a growing child and diminishes the normal development of the visual nervous system.In this study, we evaluated the diagnostic value of Visual Evoked Potentials and compared it with psychophysical contrast sensitivity measurements to introduce an electrophysiological protocol for diagnosis of amblyopia and to find out which test setting has the most sensitivity and specificity for amblyopia diagnosis.

Methods : Thirty-three adult anisometropic amblyopes were intended in this study and were tested for visual evoked potentials with different stimulus conditions including three spatial frequencies [1, 2, and 4-cycles-per-degree (cpd)] at four contrast levels (100, 50, 25, and 5%). We also tested psychophysical contrast sensitivity and compared the results with electrophysiological ones. We plotted Receiver Operating Characteristic (ROC) curve for each VEP recording and psychophysical contrast sensitivity to evaluate the area under the curve, sensitivity, specificity, and cut-point value of each test stimulus for detecting amblyopic eyes.

Results : Thirty-three amblyopic and 33 non-amblyopic eyes were examined for psychophysical contrast sensitivity and VEPs. Area under the ROC curve (AURC) findings showed that VEP with different stimulus settings can significantly detect amblyopic eyes, as well as psychophysical contrast sensitivity test. We found that P100 amplitudes had the largest AURC in response to stimuli of 2-cpd spatial frequency at 50 (P < 0.001) and 25% (P < 0.001) contrast levels, respectively. Cut-off amplitudes for these stimuli were 8.65 and 4.50 µV, which had a sensitivity of 0.758 and 0.697 and a specificity of 0.788 and 0.848, respectively. The sensitivity and specificity of VEP P100 amplitude in response to the stimuli with 2 cpd spatial frequency and 50 and 25% contrast were greater than the findings obtained from psychophysical contrast sensitivity test.

Conclusion : According to our findings, assessment of VEP amplitudes in response to stimuli of 2-cpd spatial frequency at 50 and 25% contrast levels can best detect amblyopia with highest sensitivity and specificity and thus, are the protocols of choice for detection of amblyopic eyes.

Keywords : Visual evoked potentials, Contrast sensitivity, Amblyopia, central visual pathways

Count: 332
Abstract ID: 22
subject: Cognition: Attention
Presentation Type: Oral

Attentional Demands of Postural Control in Chronic Ankle Instability, Copers and Healthy controls: A Controlled Cross-sectional Study

Submission Author: Somayeh Mohamadi

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Background and Aim : It has been shown that cognitive loading affects postural control in different populations. However there is limited and conflicting information about dual task challenge on postural control in chronic ankle instability (CAI).

Methods : A descriptive, analytic, controlled cross-sectional study, was undertaken in 75 individuals. They were assigned in to three matched groups including CAI, copers and healthy control. Postural control variables were collected during Single leg standing on force plate with and without auditory Stroop task and vision (eyes open-eyes closed). Parameters of Center of pressure (COP) including, mean velocity, range, area and sway index were measured. Also, cognitive task performance was assessed with calculating the reaction time and error ratio . The mixed model ANOVAs were used to determine the main effects of group and testing conditions.

Results : Significant main effect of vision was observed for all COP parameters, with greater COP sway (velocity, range, area and sway index) during eyes closed compared to eyes open ($P<0.05$). The main effect of cognitive task was significant as well, with reduced COP sway velocity, range, area and sway index while performing the secondary cognitive compared to single task in the all three groups ($P<0.05$). Also, the CAI group demonstrated greater COP sway parameters compared to other groups during both conditions with and without cognitive task. The results of auditory stroop task revealed longer reaction times and higher error ratio in CAI groups compared to the copers and healthy individuals ($p<0.05$).

Conclusion : Considering the effect of cognitive loading on postural control deficits in CAI especially in eye- closed condition and effects of cognitive loading, may can guide us to improve postural control in those with CAI with proprioceptive and neurocognitive training. Furthermore, no difference between coper and healthy groups may imply successful compensatory postural control mechanism in copers.

Keywords : Chronic ankle instability; Postural control; Cognitive task

Count: 333
Abstract ID: 390
subject: Neural Injuries and Neurodegenerative Disorders: Neurotoxicity, Neuroprotection, Inflammation
Presentation Type: Poster

Alpha-lipoic acid decreases oxidative stress indexes in the hippocampal methamphetamine-induced neurotoxicity model

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Background and Aim : Alpha -Lipoic acid is an organosulfur compound which is made in animals normally, and is essential for aerobic metabolism. It acts as a potent antioxidant and scavengers free radicals in the body. It was demonstrated that acute exposure to methamphetamine induces oxidative stress in the brain and responsible for cognitive deficit such as memory in rats. In this study, preventive effect of intraperitoneal injection of alpha-lipoic acid on memory impairment in the model of methamphetamine-induced neurotoxicity was investigated.

Methods : Forty five rats were divided into 6 groups: control, saline + saline, saline (as methamphetamine solvent) + sunflower oil (as alpha-lipoic acid solvent), methamphetamine + sunflower oil, and two methamphetamine groups under treatment with alpha-lipoic acid (10, and 40mg/kg). Rats received methamphetamine repeatedly (20 mg/kg, ½ hour interval). Alpha-lipoic acid was injected 30 min, 24 h and 48 h after the last methamphetamine injection. After preparation of hippocampal homogenates, oxidative stress indexes such as (malondialdehyde, catalase, SOD) was evaluated. SPSS software was used for data analyzing.

Results : Statistical analysis showed that injection of saline or sunflower oil did not affect malondialdehyde amounts or catalase and SOD enzyme activity. Methamphetamine increased malondialdehyde and decreased catalase and SOD enzyme activity in the hippocampus. Effectively, alpha-lipoic acid injection significantly reduced malondialdehyde and increased catalase and SOD enzyme activity in the dose-dependent manner.

Conclusion : Our results showed that injection of alpha-lipoic acid decreased hippocampal oxidative stress in the methamphetamine-induced neurotoxicity model.

Keywords : Methamphetamine, Alpha-lipoic acid, Hippocampus, Oxidative stress

Count: 334
Abstract ID: 589
subject: Epilepsy, Neural Excitability, Synapses, and Glia: Seizure and Epileptic Disorders
Presentation Type: Poster

N-Acetylcysteine protects hippocampal neurons against kainate-induced Temporal lobe epilepsy

Submission Author: Ekram Mohammadi

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Background and Aim : Temporal lobe epilepsy (TLE) is recognized as the most frequent form of acquired epilepsy in adults. Partial evidence indicates that one of the main complaints of patients with TLE; is hippocampal sclerosis. Hippocampal sclerosis is characterized by the loss of neurons, specifically in the CA1/CA3 and the hilus areas of the hippocampus. Apparently, prolonged seizures lead to progressive hippocampal neuronal death. N-Acetylcysteine (NAC) is a thiol-containing compound that has been used in clinical practice since the mid-1950s.It has the molecular formula $HSCH_2 CH (NHCOCH_3) CO_2 H$, and is currently being further investigated across a range of illnesses as an antidote for specific toxins, as a protective agent against oxidative stress and ischemic injury, and as a treatment for certain mental and physical illnesses. It has also reported that NAC treatment has reversed neuronal degeneration in Alzheimer's disease model rats. In this study, we wanted to estimate NAC effect in the kainate-induced temporal epilepsy model.

Methods : NAC was dissolved in physiological saline and administered intraperitoneally at 50 mg/kg and 100 mg/kg dosage, starting from one week prior to surgery and one day following the surgery. Status epilepticus (SE) was induced by i.c.v. injection of kainic acid (KA). KA (0.8 μg in 1.0 μl saline) was injected at a speed of 0.2 μl/min. The KA-treated rats were behaviorly monitored for 3 h after recovery from anesthesia. Seizures were rated according to Racine's scale. Three days later, animals were sacrificed. Their brain sections were then stained with %1 Cresyl violet to count the number of surviving neurons in the CA3 and hilar regions. Live cells were quantified at 400× magnification.

Results : There was no significant difference between the KA and KA+NAC groups for seizure intensities, this could imply that the NAC had no anticonvulsive effect at least at this dosages. However, a significant difference in the latency to the onset of seizure activity was shown after treatment with NAC (50 & 100 mg/kg).The histological analysis showed that NAC can significantly reduce the number of necrotic and degenerating neurons in CA3 and Hilar areas at 50 & 100 mg/kg dosages.

Conclusion : This study demonstrates that NAC has protective effects against KA-induced status epilepticus in rat. NAC was also effective in retarding the onset of seizure activity, although it could not attenuate seizure severity. It minimized neuronal loss in hippocampus and probably would be effective in improve of memory impairment in epilepsy.

Keywords : N-acetyl cystein; epilepsy; hippocamp

Count: 335
Abstract ID: 562
subject: Social Neuroscience: Other
Presentation Type: Poster

Pain modulation by Nitric Oxide in the empathic pain

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Background and Aim : Empathy for pain depends on the ability to feel, recognize, comprehend and share painful emotional conditions of others. In this study, for evaluation of a rat model of empathic pain and to investigate the role of NO, male Wistar rats were used.

Methods : Pain was socially transferred from the sibling demonstrator (SD) in pain (received five times formalin injection) to the naïve sibling observer (SO) through observation of pain group. SO groups received L-NAME or L-Argnine prior to observing animals in pain. Then Nociception and concentrations of NO metabolites (NOx) in the serum, left and right hippocampus, prefrontal cortex, and cerebellum were evaluated.

Results : It was seen that nociceptive response was significantly increased in the pain-observing groups. measuring NOx levels 24h after last pain observation by Griess method, indicated that observing pain resulted in decreased and increased NOx concentrations in the left hippocampus and cerebellum, respectively. There was a uniform increase in tissue concentrations of NOx in cerebellum and prefrontal cortex in both pain and observer groups 7 days after the fifth formalin injection.

Conclusion : Our results suggest that NO may be involved in development of empathic hyperalgesia and observation of sibling's pain also can change NO metabolites in different brain regions of the observer rats.

Keywords : empathy, NOX, pain

Count: 336
Abstract ID: 201
subject: Cognition: Learning and Memory
Presentation Type: Oral

Peripheral inflammatory pain increases microglia activity and apoptotic cell death in the hippocampus

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Background and Aim : Cognitive impairment is commonly associated with the pain experience. This impairment represents a major obstacle to daily activities and rehabilitation, especially in the chronic pain population. It has been suggested that inflammatory persistent pain led to microglia activation, but there is no evidence to learning and memory impairment. Therefore, the aim of the study is the Investigation of the relationship between microglial activity variation with apoptotic cell death, spatial memory during persistent peripheral inflammation

Methods : Animals were randomly distributed to 3 groups, the groups were as including, first group as control group second group as CFA group (received 100 µL CFA) third group as CFA+Minocyclin group (received 100 µL CFA+40mg/kg/day minocycline). These groups also divided to 3 subgroups day 0(CFA0), 7(CFA7) and 21(CFA21) to assess different time points of study and each subgroup including 6 rats. Thermal hyperalgesia and the spatial memory was assessed using the radiant heat and Morris water maze respectively. To determine the potential mechanisms, hippocampal microglia activity was assessed by immunohistochemistry and apoptotic cell death of hippocampal neurons were measured using Western blot.

Results : our results that CFA-induced inflammatory pain impaired spatial learning and memory associated with increase hippocampal microglia activity and apoptotic cell death in the hippocampus during first week of study. Also administration of Minocycline can effectively reduce pain-induced hippocampal microglia activity after CFA injection associated with the slower cell death rate

Conclusion : Therefore, we can suggest that peripheral inflammation lead to hippocampal microglia activation, which in turn impaired cognitive performance through neuron death in hippocampus.

Keywords : Microglia, apoptosis, pain, inflammation

Count: 337
Abstract ID: 398
subject: Computational Neuroscience: Modeling and Simulation
Presentation Type: Oral

Geometrical analysis of codimension-1 bifurcations of rest state in two-dimensional neuronal models and the role of bifurcations in determining the class of neuronal excitability

Submission Author: Safar Mohammadi

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Background and Aim : the intrinsic properties of nerve cells, along with the synaptic properties of connections between neurons and the topology of network connectivity play an important role in determining the neuronal population rhythms.neurons are considered as a nonlinear dynamical systems which look at the synaptic input through the prism of their own intrinsic dynamics. That is, they respond to input according to their inherent features, that this response may be in the form of subthreshold oscillations or repetitive spikes. In this paper we view neurons from the perspective of dynamical systems, and we use geometrical methods to illustrate codimension-1 bifurcations of rest stat in two-dimensional neuronal models. Also, we study the role of bifurcations in determining the neuro-computational properties, particularly neuronal excitability classes.

Methods : here we investigate bifurcations of rest state occurred in two-dimensional neuronal models using geometric analysis of phase space, and also we refer to the essential role of the nullclines in locating the equilibria and in determining the shape of vector field in the neighborhood of stable equilibrium in the moment of bifurcation. In addition we use canonical models to illustrate the dynamics of class 1 excitable systems.

Results : A strange situation regarding to class 1 excitable neurons occurs when the threshold manifold curves around the rest state and a strong inhibitory input can evoke spike. Also a class 2 excitable system near an Andronov-Hopf bifurcation possesses an substantial information processing capability. System's response to a pair (or a sequence) of stimuli depends on the timing between the stimuli. A pair of relatively strong pulsed perturbations (a doublet), may or may not evoke an action potential depending on its interspike interval. When the interval is close the period of the damped oscillations, then the effect of the perturbations can accumulate. On the other hand, when the interval is less or more than the period of the damped oscillations, afterward the perturbations may effectively cancel each other. Thus, the interspike interval in doublets plays an important role in eliciting response in postsynaptic neurons depending on their frequency. This provides a powerful mechanism for selective communication between such neurons. In particular, such neurons can multiplex; i.e. send many signals via a single transmission line.

Conclusion : the bifurcations determine excitable properties of neurons, and hence their neuro-computational properties. Class 1 neural excitability corresponds to the resting state disappearing via saddle-node on invariant circle bifurcation, and action potentials can be generated with arbitrarily low frequency. In contrast, class 2 neural excitability corresponds to the rest state disappearing via saddle-node (off invariant circle) bifurcation or losing stability via subcritical or supercritical Andronove-Hopf bifurcation, which action potentials are generated in a certain frequency band.

Keywords : Neuronal model, Andronove-Hppf bifurcation, Saddle-node on invariant circle bifurcation, Class 1 neural excitability, Class 2 neural excitability

Count: 338
Abstract ID: 108
subject: Cognition: Other
Presentation Type: Poster

The Effects of an Electronic Story telling Program on Communication Skills of Children with Autism Spectrum Disorder

Submission Author: Sahar Mohammadi

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Background and Aim : Children with autism spectrum disorder have difficulty in emotion regulation. In this study, an electronic story-telling program is proposed to help these children in practicing their emotion regulation skills.

Methods : The effectiveness of this intervention was evaluated by a semi- experimental study, using pretest-posttest and a control group. 10 students in the experimental group participated in this program, and the control group stayed in the waiting list. Sheilds & Cicchetti Emotion Relation Checklist (1998) was used to measure emotion regulation skills in the two groups. The obtained data were analyzed using Analysis of Covariance

Results : The findings showed significant differences ($p < 0/5$) between the experimental and the control group in emotion regulation

Conclusion : In the end, using electronic story telling program for improving emotion management and social skills was discussed. Further discussions as well as suggestions for future research are presented

Keywords : Emotion regulation, electronic story telling program, children with autism spectrum disorder.

Count: 339
Abstract ID: 255
subject: Neural Injuries and Neurodegenerative Disorders: Ischemia, Stroke, and Neurovascular Disorders
Presentation Type: Poster

An evaluation of optogenetics stimulation on alterations of microRNA 124a as neurogenesis marker in animal model of stroke

Submission Author: Sanaz Mohammadi

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Background and Aim : Worldwide stroke is the second leading cause of mortality. Stroke has maintained its status as the largest element of disability and lethal in the last 15 years and the figures are still growing. Notably, stroke stand out as one of the prominent economic and social burden for society. Stroke is mainly provoked by a temporary and permanent blockage of the middle cerebral carotid artery and could interrupt the blood flow. Therefore, it could lead to neuronal death and sensory-motor and cognitive impairment due to decreasing in brain glucose and oxygen levels. This study was carried out for the purpose of evaluating efficiency of optogenetics as a new method in treatment of stroke, succeeding reduction of injury. Finding of this research showed that there was an improvement in the sensory-motor deficits and a significant reduction in epigenetic factors involved in the neurogenesis process through, stimulation of glutamatergic neurons of the brain striatum before stroke induction.

Methods : In order to achieve the goal, lentiviruses carrying pLenti-CaMKIIa-hChR2 (H134R) - mcherry-WPRE were injected in the right striatum of rats for increasing the level of synaptic glutamate. The animals were light-stimulated 30 minutes for 6 consecutive days by using 473 nm a blue laser light 26 days after injection. The middle cerebral artery occlusion (MCAo) were induced on stroke rat model 24 h after the last light stimulation. 24 hours after reperfusion, the animals' sensory-motor deficits were assessed by the neurological sensory-motor deficits index (NSS). Furthermore, the expression level of neurogenesis epigenetic marker (microRNA 124a) was evaluated using RT-qPCR technique.

Results : The results showed that pretreatment with optogenetic stimulation of glutamatergic striatum neurons could increase the sensory-motor function of mice and neuronal survival in the striatum, cortex and hippocampal areas. Also, the expression levels of the miR-124a showed that modulation their specific signaling pathways leads to changes in the processes of neurogenesis and contributes to the improvement of the disease as well.

Conclusion : According to the results, optogenetics pretreatment can be used as a therapeutic method for controlling and preventing further injury through the optogenetic stimulation of glutamatergic neurons of the striatum and epigenetic factors such as microRNAs.

Keywords : Stroke, Optogenetics, miR124a, Epigenetics, Glutamate, Neurogenesis

Count: 340
Abstract ID: 346
subject: Neuropsychiatry and Psychology: Other
Presentation Type: Oral

Improvement of autistic-like behaviors in adult rats prenatally exposed to valproic acid through early suppression of NMDA receptor function

Submission Author: Somaye Mohammadi

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Background and Aim : Autism spectrum disorder (ASD), the fastest growing neurodevelopmental disorder, is characterized by social deficits, repetitive/stereotypic activity, and impaired verbal and nonverbal communication and is commonly diagnosed at early stages of life. Based on the excitatory-inhibitory imbalance theory of autism, some recent animal experiments have reported amelioration in autistic-like phenotypes in adult animals following acute treatment of NMDA antagonists. However, we suggested the neonatal period as a critical period for NMDA antagonist intervention

Methods : The model of autism was induced by subcutaneous administration of valproic acid (600 mg/kg) to pregnant rats at gestational day 12.5. The effects of MK-801 (0.03 mg/kg, from postnatal day 6–10) in correcting ASD-associated behaviors in male offspring were assessed by open-field, three-chambered social interaction tests. Moreover, the nociceptive threshold was measured by tail flick and hot plate. Behavioral tests were performed on PND 55–60. Nissl staining was performed to confirm the safety of 0.03 mg/kg MK-801 for the brain.

Results : We reported that MK-801 rescued social deficits, repetitive behaviors (self-grooming), anxiety-related behavior, and the low nociceptive threshold in the VPA-treated rats. Further, histological examination showed that there were no significant differences among all the groups in terms of the neuronal survival rate

Conclusion : Our results showed that postnatal low-dose MK-801 improved ASD-associated behaviors in the VPA-treated rats and that early exposure to NMDA antagonist resulted in permanent changes in adult behavior.

Keywords : Autism . Valproic acid . MK-801 . NMDA antagonist . Postnatal period

Count: 341
Abstract ID: 450
subject: Neuropsychiatry and Psychology: Mood Disorders
Presentation Type: Poster

The risk of suicide in patients with mood disorders and ways of prevention : a systematic review

Submission Author: Zahra Mohammadi

Zahra Mohammadi[1]

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Background and Aim : Suicide and suicidal behaviors are increased in mood disorders .About one-half to two-third of all suicides are by people who suffer from mood disorders.Also suicide is a common endpoint for many patients with severe psychiatric illness. The aim of this paper is to identify the best ways of prevention such behaviors in these patients. And understanding factors underlying suicide risk is necessary for rational preventive decisions.

Methods : We searched pubmed , Scopus, Cochrane library and other important databases up to December 2019. And we found 8 articles about our topic . The studies on prevention factors for completed and attempted suicide among subjects with mood disorders was reviewed

Results : Consequently ,early recognition and successful acute and long-term treatment of mood disorders is essential for suicide prevention .understanding suicidal thinking and decision making is necessary for advancing treatment and prevention. Also studies show that appropriate pharmacotherapy markedly reduces suicide morbidity and mortality even in high risk population .other studies represent that the importance of the collaboration between primary care and mental health providers to better treatment.

Conclusion : Adequate management of suicidal risks in mood disorder patients requires comprehensive ,clinically,skillful monitoring and timely intervention .

Keywords : Suicide,mood disorders,suicide prevention,suicide attempt,suicidal behaviors

Count: 342
Abstract ID: 348
subject: Neurorehabilitation and Regeneration: Psycho-cognitive Rehabilitation
Presentation Type: Oral

Supplementary role of once a week transcranial direct current stimulation session on visual processing rehabilitation after brain tumor: could it be unexpected additional benefit? case study.

Submission Author: Azar Mohammadzadeh

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Background and Aim : Around 28% of patients with a brain tumor report a problem with their vision (visual impairment). This could be a direct result of the tumor, or its treatments and resection. Severity of deficit is depending on the location and treatment of the brain tumor. Brain tumor resection side effects can include blurred or double vision, abnormal eye movements, restricted field of view and rarely complete loss of vision. The aim of this study is to report a single case who's blindness as side effect of tumor surgery is recovering by slow and step by step with our visual –neuro psychological rehabilitation along with single session per week of transcranial direct current stimulation (tDCS).

Methods : A 41-year-old male with resection of brain tumor on bifrontal area, three years ago, suffering from Complete loss of right eye vision, the sight of left eye is to the extend of shadow, and Complete loss of sense of smell. The intervention contains single session anodal tDCS (2 mA, 30 min) in occipital area combined with visual rehabilitation was implemented one times per week, 1 hours each, for 16 weeks (the study is on going)with every day 3 hours training program for home. In order to assess visual improvement function before and during the intervention, due to the extent of the impaired and low vision, the only method of measuring progress was retinal and perimeter examination which was conducted, and the family's report of a gradual improvement of patient's daily living complemented our information.

Results : Delivery of combined tDCS with visual perception training was feasible and safe. High-resolution perimeter revealed an admissible shift in visual field. Patient also showed effective recovery of function in activities of daily living. He was able to identify colors that he did not recognize at all after surgery in the main three colors means blue yellow and green. In addition, he is able to read letters, Single digit numbers and math symbols written in large font (45 font) from 40 cm distance monitor or paper.

Conclusion : Results of this intervention suggest that occipital cortical tDCS may enhance recovery of visual function associated with concurrent visual perception rehabilitation even if the location of damage is in anterior visual pathways. Also, if the occipital area is modulated in conditions that are not directly impaired, the anterior pathway of visual system of the brain will benefit from this reinforcement. In fact, because of the networked nature of the visual pathways, this property can be used tDCS that means indirect stimulation of visual system can help far location of damage. This single-case study demonstrates for the first time that combined application of tDCS (as shadow treatment method) and restorative training may enhance improvements in measures of visual perception. Future studies, need to find how much could be efficient single session tDCS per week as adjuvant therapy compared to other protocol.

Keywords : one a week tDCs session, vision neurppscholigy rehabilitation, vision restoration, transcranial direct current stimulation

Count: 343
Abstract ID: 427
subject: Neural Injuries and Neurodegenerative Disorders: Neurotoxicity, Neuroprotection, Inflammation
Presentation Type: Poster

COMPARISON OF MELATONIN AND CURCUMIN EFFECT AT THE LIGHT AND DARK PERIODS ON REGENERATION OF SCIATIC NERVE CRUSH INJURY IN RATS

Submission Author: Farshad Moharrami kasmaie

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Background and Aim : Being one of the acute clinical problems, peripheral nerve injury can bring about a number of consequences in- cluding severe disability, reduced Quality of life (QOL) and immense costs. Currently, melatonin and curcumin are widely applied because of their immunomodulatory, anti-inflammatory, neuro-protective and antioxidant prop- erties. The present study aims to compare the effects of melatonin and curcumin during light and dark periods on sciatic nerve crush injury repair.

Methods : Accordingly, rats received IP injections of curcumin (100 mg/kg) and melatonin (10 mg/kg) over two periods of light (9:00 a.m.) and dark (9:00 p.m.) for 4 weeks. In order to evaluate rats, func- tional (walking track analysis and electrophysiological measurements), histomorphometric and gastrocnemius muscle mass investigations were administered.

Results : No statistically significant difference was identified between dark and light curcumin groups while curcumin groups displayed better results than did melatonin groups. In addition, dark melatonin group displayed better results than the light melatonin.

Conclusion : On the whole, this study found that mela- tonin and curcumin can be used to quicken neural recovery and help treat nerve injury. It was also found that better neuroregeneration or nerve regeneration was induced when rats were treated by melatonin during the dark period while effects and injection time did not correlate in curcumin application.

Keywords : Melatonin, curcumin, nerve injury, anti-inflammatory, antioxidant, crush

Count: 344
Abstract ID: 386
subject: Development: Neurodevelopmental Disorder (ADHD, Autism, Learning Disorders)
Presentation Type: Oral

Does maternal separation make rats more prone to methylphenidate addiction?

Submission Author: Fatemeh Mohtashami Borzadaran

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Background and Aim : Maternal separation is an animal model for studying neglect and abuse. Rodents are highly dependent on maternal care on the first days after birth. Depriving the pup of such care renders the animal with HPA dysfunction and these animals are more susceptible to anxiety and stress. These effects are due to abnormal brain development in these animals.

Methods : The animals were divided into maternally separated and control group and then tested for drug preference with methylphenidate. Conditioned place preference is designed to measure drug reward learning and memory and the target location under study is ventral striatum. The first day (day1) the preference of the rat is evaluated. For 5 days the non-preferred compartment is paired with the target drug. The other compartment, which is different in texture, is paired with saline. On the 7th day the change in the preference is evaluated.

Results : 5 consecutive days of methylphenidate injection with a dosage of 5mg per kg induced preference for the drug compartment in both groups.

Conclusion : A dosage of 5mg per kg of methylephnidate can induce place preference in maternal separation and control group.

Keywords : maternal separation, place preference, HPA axis

Count: 345
Abstract ID: 110
subject: Development: Other
Presentation Type: Poster

Evaluation of anti-anxiety and anti-depressant effects of Mentha spicata and carvone using experimental model in male mice

Submission Author: Faraz Mojab

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Background and Aim : Depression, anxiety and sleep disorders are the major psychological problems in the human life. Although there are several effective medications to treat or control these psychiatric disorders, but most of these medications have limited efficacy and unwanted side effects. Researchers are always looking for new drugs, especially those of natural origin, and they hope that the investigation for newer medications, especially natural products, could be helpful to solve these problems.

Methods : In this study we investigated the anti-anxiety, anti-depression, sedative-hypnotic and muscle relaxant effects of Mentha spicata essential oil and carvone, using experimental models including elevated plus maze, pentobarbital induced sleep and forced swimming and grip strength tests. Forced swimming test was carried out on Swiss male mice, while other tests performed on NMRI mice with a body weight of 20–25 g (n=10 in all groups). The M. spicata essential oil and carvone were prepared and then administered intra-peritoneally to mice at different doses. The effects of different doses of M. spicata essential oil and carvone were compared with the control group.

Results : In the elevated plus maze test, M. spicata essential oil showed significant effect at the dose of 200 mg/kg. M. spicata essential oil and carvone at different dose increased the sleeping time induced by pentobarbital and decreased the immobility time in the forced swimming test and increased the muscle relaxant effect by grip strength test in mice compared to the control group.

Conclusion : The results indicate that the essential oil and carvone have the anti-depressant, muscle relaxant and sedative-hypnotic activities. However, More studies are needed to find the exact mechanism involved in these activities.

Keywords : Mentha spicata essential oil, carvone, Sedative-hypnotic, anti-anxiety, anti-depressant, Mice.

Count: 346
Abstract ID: 160
subject: Neural Injuries and Neurodegenerative Disorders: Demyelinating Disorders
Presentation Type: Poster

Evaluation of Reproductive and Pregnancy Health in Women with Multiple Sclerosis

Submission Author: Fatemeh Mokhtari

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Background and Aim : Multiple sclerosis (MS) is a chronic disease of the central nervous System (CNS). It is more prevalent in women than men. Typical age of onset in the third or fourth decades. Most women with MS are diagnosed during their reproductive ages. Therefore, the aim of this study was evaluation of reproductive and pregnancy health in women with multiple sclerosis.

Methods : A retrospective descriptive-analytical study was conducted on 110 women suffering from MS with a history of pregnancy in Isfahan, Iran in 2018. The subjects had become pregnant within the recent decade and were selected via random sampling. After receiving their consent, they completed a researcher-constructed questionnaire by telephone. The questionnaire consisted of three parts: demographic information, MS and its symptoms and its treatment, and the third part was related to the fertility profile and the history of pregnancy associated with MS. Data were analyzed by SPSS software version 16 using Chi-square, ANOVA and t-test.

Results : The mean age of women with MS in this study was 32.4 years. Most of the subjects studied were married (98.2%), had undergraduate and graduate education (51.8%), and of the ordinary social classes (86.4%). The most common primary symptom of the disease in this population was blurred vision (42.7%). 81.5% of the patients suffered from the recurrent and declining kind of the disease. In this population, the average number of pregnancies was 1.61, the number of deliveries was 1.35, the number of abortions was 0.24, the history of ectopic pregnancy was 0.01, the number of alive children was 1.36 and the number of dead children was 0.01. Most of them had no history of infertility (95.4%). The average time of the last MS attack before the pregnancy was 21.36 months. The most commonly used drug before pregnancy was Sinox (43.4%). Most of the subjects discontinued the medication after planning for pregnancy (97.3%), of which 88.1% had no recurrence of the disease during pregnancy. 86.2% of pregnant women did not suffer from MS attacks. Fatigue (24.5%) was the most common symptom exacerbated during pregnancy. MS symptoms improved in 55.0% of subjects in the second trimester.

Conclusion : MS had no effect on the pregnancy status, such as the number of abortions, ectopic pregnancy, the number of alive and dead children, the state of infertility, and the duration of pregnancy. Therefore, MS does not have a negative effect on pregnancy. Also, the symptoms of the disease are improved during pregnancy with respect to pre-pregnancy and postpartum. The symptoms of the disease are improved during pregnancy (especially in the second trimester). Therefore, pregnancy has a protective role against MS.

Keywords : Multiple Sclerosis, Reproductive, Pregnancy, Health.

Count: 347
Abstract ID: 590
subject: Emotion, Motivation and Behavior: Behavioral Pharmacology
Presentation Type: Oral

Differences in the time course of anxiolytic and sedative effects of Alcea aucheri in rats

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Background and Aim : Medicinal plants of the Alcea genus from Malvaceae family such as Alcea rosea L., A. officinalis L, and A. aucheri (Boiss.) Alef. have long been used traditionally as mucilage for treatment of irritated oral and pharyngeal mucosa, respiratory and gastrointestinal disorders. They have been also used as a diuretic agent as well as sedative remedy. This study was designed to evaluate the time course of behavioral effects of an aqueous flower extract of A. aucheri on elevated plus-maze test (EPM) in rats.

Methods : Male Wistar Rats (180-200 gr; Pasture institute) were randomly divided into five groups to receive saline (control), diazepam (1.2 mg/kg; positive control) or the extract of A.aucheri at doses of 35, 70 or 175 mg/kg intraperitoneally, once daily for four consecutive days. Then, 24 h after the last injection each rat was tested during a 5 min period in EPM. Futhermore, in two groups of rats similar paradigm was performed but the animal was tested after 48 or 96 h of the last injection. The sessions were recorded by a camera positioned right above the maze hanging from the ceiling. Data were obtained using Ethovision software (version 7), a video tracking system for automation of behavioral experiments. Increase in the percentage of time spent on open arms and/or of open arms entries were (was) considered as index of lower anxiety behavior. Moreover, total distance travelled (cm) and velocity were recorded. Decrease in these parameters was considered as sedative effect.

Results : ANOVA showed that the extract significantly increased open arm activity, i.e. the percentage of time spent on open arms and/or open arms entries compared with saline, in time 24 h and time 48 h. In addition, the extract at its highest dose and diazepam, induced a significant decrease in the total distance travelled and velocity of rat, compared with saline in time 24 h.

Conclusion : The present results suggest that firstly, repeated dosing with A. auchei has anxiolytic and sedative effects in rats, and secondly, time courses of anxiolytic effect and sedative effect were different. The differences may be representative of different mechanisms involved in each effect.

Keywords : Alcea aucheri; elevated plus-maze; Sedative effect; anxiolytic effect

Count: 348
Abstract ID: 471
subject: Neuropsychiatry and Psychology: Anxiety Disorders and PTSD
Presentation Type: Poster

The Relationship between Perceived Pain and Stress and Anxiety in Osteoarthritis Patients

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Background and Aim : Osteoarthritis is a common disease and one of the most important causes of disability in the elderly. One of the most important factors for the debilitating disease patients' perception of pain caused by this problem. Identifying the cause of the disease and modifying its risk factors at this age can prevent or delay the onset of the disease. Psychological factors are among the many factors involved in the initiation or progression of this disease. The purpose of this study was to investigate the relationship between perceived pain with stress and anxiety in patients with osteoarthritis. Thus, psychological interventions can reduce the disabling pain in these patients.

Methods : This is a descriptive study. 125 elderly people referred to health centers in Golpayegan that previously had arthritis specialist, were selected randomly to fill out questionnaires. Questionnaires used in this study are Depression and Anxiety Questionnaire (DASS-21) and Chronic Pain Questionnaire. Data were analyzed using SPSS-20.

Results : Findings of this study showed that perceived pain had a direct and significant relationship with anxiety (r=0.381) and stress (r=0.374) (P<0.000). In addition, the results of multiple linear logistic regression analysis show that in this model, only 20% of the dependent variable (perceived pain) is estimated by independent variables (stress and anxiety).

Conclusion : Based on the findings of this study, the perceived pain level of patients with osteoarthritis is directly related to mental health variables. Therefore, working on improving mental health variables such as stress and anxiety will improve mental health and consequently improve the disability of patients with chronic pain such as osteoarthritis.

Keywords : Osteoarthritis; Stress; Anxiety; Perceived Pain

Count: 349
Abstract ID: 316
subject: Novel and Cutting-Edge Technologies: Brain Stimulation Methods   (ECT, rTMS, TDCS, DBS)
Presentation Type: Oral

Reduction of tinnitus in rat animal model using photobiomodulation

Submission Author: Katayoon Montazeri

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Background and Aim : Both inhibition as well as stimulation of biological processes could be therapeutically useful, so the term "photobiomodulation" (PBM) is being accepted instead of low level laser therapy. Tinnitus is a conscious phantom perception of sound in the absence of a corresponding external acoustic stimulus. The efficacy of PBM on treatment of tinnitus in majority of human clinical studies was reported only by some tinnitus questionnaires as well as the laser parameters which used for therapy were too wide. On the other hand in these studies the authors did not indicate whether excitatory or inhibitory effect of laser light was intended for treatment of tinnitus. These gaps encouraged us to work on rat animal models using objective evaluative tools, optimizing laser parameters as well as identifying therapeutic mechanism of PBM. Several theories have been proposed to explain the mechanisms underlying tinnitus. This research is based on neural plasticity theory (Salvi 2000). According to this theory loss of afferent auditory inputs in peripheral auditory pathways of tinnitus sufferers leads to compensatory changes in central auditory system. These changes include a down regulation in inhibitory system and an up regulation in excitatory system. Accordingly the hypothesis of this project is based on the ability of laser light to modulate these compensatory changes and to reestablish inhibition/excitation balance.

Methods : The first phase of project is photoacoustic stimulation of auditory nerve in normal and noise induced tinnitus rats. Optical stimulation was described as a possible alternative to electrical stimulation in cochlear prosthesis and the ability of laser light to evoke auditory potentials was confirmed in many researches. The hypothesis of this part is that if low level laser be able to evoke auditory potentials in tinnitus rats; it seems to be logical to expect therapeutic effect of it in tinnitus. Since the duration of tinnitus in majority of human cases is more than three months, chronic type of tinnitus will be induced by noise trauma in animal models. The laser device is MDL-lll-808 IR from CNI Company which was synchronized with Audiology Lab Electrophysiology instrument. This device will be used for registering electro encephalographic (EEG) waves simultaneous to irradiation. Auditory brain stem response (ABR) will be derived offline using MATLAB software. Arising tinnitus and absence of hearing loss in animals will be confirmed by startle test. In the second part of phase 1 therapeutic PBM protocol (specified in main text) will be performed in tinnitus rats and the results will be evaluated by startle test.

Results : During the second phase three tests will be performed before and after therapy to objectively confirm therapeutic effect of PBM. Single unit registration will identify alteration of single neuron firing; Western blot technique will determine protein changes and immunohistochemistry tests will identify changes of Doublecortin as a biomarker of neural plasticity.

Conclusion : At the end of this project therapeutic effect of PBM on chronic tinnitus in rat animal model will be objectively determine and this can potentially lead to new treatment approaches in human tinnitus sufferers.

Keywords : neural plasticity - photobiomodulation- tinnitus

The Effect of Nigella sativa on Behavioral and weight change in Cuprizone Model of Demyelination

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Background and Aim : Multiple sclerosis (MS) is the major, immune-mediated, demyelinating neurodegenerative disease of the central nervous system (CNS). Nigella sativa (NS) has been suggested to have antioxidant and neuroprotective effects. This study aimed to investigate the therapeutic effects of Nigella sativa (N. sativa) seeds (2.8 g/kg body weight) on weight change and behavioral dysfunctions in the cuprizone toxic model of demyelination.

Methods : In this experimental study, young adult male C57Bl/6 mice (N=30, at 8 weeks of age) with average bodyweight of 22/5-30gr were divided into three groups: Control, MS and treatment group (MS+Nigella Sativa). C57BL/6J mice were fed a chaw containing 0.2 % cuprizone for 6 weeks and received a daily oral administration of N. sativa after the appearance of the first demyelination signs in corpus callosum until the end of the experiment. The presence of demyelination in the corpus callosum of cuprizone-treated mice was evaluated using Luxol Fast Blue (LFB) staining of formalin-fixed sections.

Results : Body weights of the mice were measured weekly throughout the experimental period. After 1 week of cuprizone administration, the treated animals had lost 5/01% body weight, while animals on a normal diet had gained 5.75%. The differences between the control and the treated mice were statistically significant (P < 0.001). Over the next several weeks treated animals regained some weight. Treated animals had an overall increase of 14.83% in body weight with respect to initial values while control animals achieved a 21/7% increase (ANOVA treated animals versus controls, P< 0.001). To evaluate the effect of Nigella sativa on motor impairment, the behavior of mice was assessed by open-field test (OFT) and pole test at the end of the 6th week of experiment. All groups were assessed by open-field test for distance moved and movement velocity. Animals (each group, n=8) were placed in an open-field box, and locomotion was tracked over a 3-min period. Nigella sativa enhanced distance moved and movement velocity in mice affected by cuprizone compared to the MS group (P < 0.01). Pole test was used to assess the locomotors coordination of mice. After the end of the 6th week, each mice was placed tenderly head?up facing the apex of the vertical pole. The time taken to reach the bottom of the pole after climbing over (touchdown time) was recorded for analysis. The cut?off time was 60 seconds for touchdown time. In

every test, two consecutive trials were conducted and the average time of two trials was recorded. Pole test showed that CPZ feeding increased the time spent on touchdown ($P < 0.01$), which was significantly shortened by N.Sativa treatment compared to the CPZ group ($P < 0.01$).

Conclusion : These results showed that administration of Nigella sativa improved motor behavior deficits and weight loss that induced by cuprizone diet.

Keywords : Nigella sativa; Cuprizone Model;Multiple Sclerosis

Count: 351
Abstract ID: 407
subject: Neuropsychiatry and Psychology: Disorders of Neurobehavior
Presentation Type: Poster

Early life stress effects on oxytocinergic system in rat brain

Submission Author: Ali Mousavi

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Background and Aim : Early-life environmental conditions significantly affect the offspring's development. Maternal deprivation (MD) can induce persistent changes in the brain. The oxytocin hormone that is produced in the central nervous system and some tissues could reduce stress-induced anxiety and depression. The purpose of this study was to investigate the effect of MD on serum oxytocin level, and expression level of oxytocin and oxytocin receptor in the brain.

Methods : Male offspring of Wistar rats (n=8 per group) were subjected to 3h of daily MD during postnatal days 1–14. In adulthood, serum oxytocin level was measured by ELISA method. The expression level of genes was determined by quantitative PCR (qPCR).

Results : The results of this study showed that MD can decrease the serum level of oxytocin. Also, a significant decrease in oxytocin and a significant increase in oxytocin receptor mRNA level was observed in the brain of maternal-deprived rats.

Conclusion : Our results suggest that MD induces alterations in the serum oxytocin levels and the expression of oxytocin and oxytocin receptor.

Keywords : Maternal deprivation, Serum oxytocin level, Oxytocin and Oxytocin receptor expression

Count: 352
Abstract ID: 285
subject: Neuropsychiatry and Psychology: Evidence-Based Psychology
Presentation Type: Poster

Does religion affect prosocial behavior of the believers? Evidence from a laboratory experiment

Submission Author: Zahra Mousavi

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Background and Aim : Various studies have shown that religion has an effect on prosocial behavior such as charitable giving, and this effect can be measured by experimental design. Religious priming is used to measure the causal effect of religion on prosocial behavior and refers to a technique whereby the presentation of one stimulus passively and temporarily affects processing or response. However, due to many reasons such as using this technique in just economic games and not using real scenarios, using specific tasks such as the unscrambled sentence task and mere emphasize on cognitive processes without considering emotional processes, not paying enough attention to endowment effect and the anonymity of participants and finally using inappropriate analytical methods, there is much debate on the impact of religion on prosocial behavior.

Methods : Two months before the experiment began, an online call was released at Sharif University of Technology. Participants filled out an online form to participate in the study. Of the 314 students, 150 identified themselves as theists and of 80 of them, who gave more than 4 (on a Likert scale from 1=not believe in god to 7=completely believe) to their commitment to religious behavior, had been chosen as the subjects in the main experiment. Of these 80 participants, 52 were randomly selected and individually invited to the laboratory and then were divided into one control and one experimental groups. We gave them 15000 Tomans at the beginning of the experimental section (endowment effect) as an appreciation, let them be alone in the room and gave them space to decide. After experiment was done, we checked the donation box (anonymity). Then they were seated in front of a computer, answered some biographical questions. We primed the treatment group with one invented religious text (they read one religious text about Ramadan month and the importance of this month in the views of Muslims) and one voice (they listened to Quran for 2 minutes) (new task) and gave all participants an opportunity to donate money to Mahak charity (real scenario). After participants decided how much they wanted to donate, they were prompted to answer a series of awareness probe questions that enabled us to assess their understanding of the study. After experiment, they were debriefed with email.

Results : Since our dependent variable had no normal distribution (typically zero-inflated, with a large lump of participants who donated 50% of their endowment, and a smaller but still substantial lump of participants who donate 100% of their endowment), we used Mann Whitney test to compare median of money the participants donated. The results are in line with a common assumption of most theories of religion: religion has the effect of promoting prosocial behavior in believers ($P < 0.000$ and Mann Whitney $= 137.500$).

Conclusion : Our study is the first study that investigates the effect of highlighting the religion on prosocial behavior in Iran. The difference between the treatment and control groups can be attributed to the content presented during the religious priming.

Keywords : Religious Priming, Prosocial Behavior, giving.

Count: 353
Abstract ID: 77
subject: Emotion, Motivation and Behavior: Reward and the Brain
Presentation Type: Poster

Hippocampal D1- but not D2-like receptors modulate the phosphorylation of ERK in food deprivation-induced reinstatement of morphine in extinguished rats

Submission Author: Roghaye Mozafari

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Background and Aim : Reinstatement to drug abuse is the most challenging issue in the addiction field so comprehensive knowledge of the involved neurobiological mechanisms is a fundamental necessity. It is known that dopamine is complicated in the neurobiology of numerous psychiatric diseases, including addiction and it is being considered a crucial element in the brain reward system.

Methods : Our behavioral results documented that the administration of dopamine receptor antagonists inhibited reinstatement of morphine in FD rats. Previous studies present the ERK pathway plays a critical role in the control of cellular responses to stress and reward. Therefore, the purpose of this study was to evaluate the effect of intra-DG administration of dopamine receptors antagonists on the phosphorylation of hippocampal ERK in the reinstatement of morphine in FD rats.

Results : All groups of animals passed conditional place preference (CPP) and were bilaterally given different doses of D1- or D2-like dopamine receptors, (0.25, 1 and 4 ?g/0.5?l) into the DG. Each animal was immediately killed after the reinstatement phase and its hippocampus was immediately dissected out and then, p-ERK/ERK ratio was evaluated by using Western blot analysis in the DG region.

Conclusion : The principal findings in this study demonstrated that intra-DG administration of the highest dose of D1 receptor antagonist could enhance the hippocampal pERK/ERK ratio in FD rats while D2 receptor antagonist failed to change this ratio.

Keywords : Conditioned place preference; Dentate gyrus; Dopamine receptor; Food deprivation; pERK/ERK ratio; Reinstatement

Count: 354
Abstract ID: 76
subject: Emotion, Motivation
and Behavior: Reward and the Brain
Presentation Type: Poster

Role of D1- and D2-like dopamine receptors within the dentate gyrus in stress- and morphine-induced reinstatement in the food-deprived rats

Submission Author: Roghaye Mozafari

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Background and Aim : The high rate of relapse to drug abuse is one of the main problems in the treatment of addiction. Stress plays an essential role in relapse to the drug. In the present study, we evaluated the role of dopamine receptors (D1- and D2-like) and compared their activities in the dentate gyrus (DG) region, focusing on the reinstatement induced by the food deprivation stress (FDS) and a sub-threshold dose of morphine (0.5 mg/kg, s.c.).

Methods : The animals received different doses of SCH23390 or sulpiride (0.25, 1 and 4 μg/0.5 μl vehicle), as D1- and D2-like dopamine receptors antagonist respectively, into the DG, on the 8th day of the extinction. After the administration of the antagonists, they were placed in stress circumstances of food deprivation for 24h and conditioning scores were measured on reinstatement day.

Results : Our results showed that the administration of SCH23390 and sulpiride dose-dependently attenuated the extinguished morphine- CPP reinstated by FDS and morphine. The behavioral results were more prominent in the groups of animals that received SCH23390 as compared to sulpiride.

Conclusion : In conclusion, these results show that D1- and D2-like dopamine receptors in the DG area are involved in reinstatement induced by FDS and a sub-threshold dose of morphine and these receptors are might be as a potential target for addiction treatment.

Keywords : Reward; Stress; Dopamine receptors; Dentate gyrus; Reinstatement; Food deprivation; Conditioned place preference; Rat

Count: 355
Abstract ID: 181
subject: Neural Injuries and Neurodegenerative Disorders: Neurotoxicity, Neuroprotection, Inflammation
Presentation Type: Oral

Cytoprotection of sumatriptan in glutamate induced neurotoxicity by targeting NO/cGMP and p-ERK signaling through inhibiting NMDA receptors in cerebellar granular neurons of rat

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Background and Aim : The glutamate induced neurotoxicity in cerebellar granular neurons (CGNs) is mediated through N-methyl-D-aspartate (NMDA) receptors hyperactivation. The activated glutamate receptors affect the functional activity and expression of nitric oxide (NO), cyclic guanylyl monophosphate (cGMP) and extracellular signal-regulated kinase (ERK) in CGNs. Cellular mechanisms underlying sumatriptan neuroprotection remained unexplored. Thus, we aimed to investigate the unique ability of sumatriptan to protect CGNs in primary cultures against glutamate toxicity and its underlying mechanisms.

Methods : The neuroprotective effect of sumatriptan at different concentrations (0.01-20 µM) was assessed in CGNs treated with/without glutamate (100 µM), MK-801 (1 µM), 7-NI (50 µM) and MB (1 µM) using MTT and lactate dehydrogenase (LDH) assays. The quantitative measurement of nitrite levels, involved genes and proteins in different treatment doses and times was performed using NO assay, qRT-PCR studies and western blot analysis respectively to investigate the molecular mechanisms leading to sumatriptan neuroprotection in primary CGN cultures.

Results : The results of cellular viability assays showed a significant glutamate induced reduction cellular viability (P<0.001). The acute treatment of CGN cultures with sumatriptan (5µM) for 30 mint with/without glutamate or inhibitors of NMDA/NO and cGMP pathway revealed a significant cytoprotective effect (P<0.001). The pretreatment of cells with sumatriptan significantly reversed (P<0.01) the glutamate induced higher NO levels in CGNs. Furthermore, pretreatment of CGNs with sumatriptan significantly down regulated the glutamate induced mRNA expression (P<0.001) of NR2B, nNOS, α2 and β1 genes and protein expression (P<0.001) of phosphorylated ERK in CGN cultures.

Conclusion : In conclusion, the acute sumatriptan treatment significantly protects the primary CGN cultures from glutamate induced neurotoxicity through inhibiting NMDA mediated NO/cGMP activation and p-ERK pathway.

Keywords : Sumatriptan, Glutamate, Cytoprotection, N-methyl-D-aspartate, Nitric oxide, cGMP, p-ERK, Cerebellar granular neurons

Count: 356
Abstract ID: 147
subject: Pain and Sensory Systems: Tactile, Somatosensation and Pain Syndromes
Presentation Type: Poster

Effect of chronic caffeine administration on hyperalgesia in a rat neuropathic pain model: role of nitric oxide pathway

Submission Author: Monireh Naderitehrani

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Background and Aim : Damage to the central and peripheral nervous system causes neuropathic pain. Caffeine is a non-selective antagonist of A1and A2A adenosine receptors (ARs). Some doses of caffeine have a protective effect on pain. Meanwhile, nitric oxide (NO) is partly involved in the central effects of caffeine. Thus, the purpose of this study was to investigate the effect of chronic caffeine administration on the thermal hyperalgesia in neuropathic rats and levels of nitric oxide metabolites.

Methods : Wistar male rats (220-250 g) were used in this study (n=8). Neuropathic pain was induced by chronic constriction injury (CCI) of sciatic nerve. Thermal hyperalgesia was measured using plantar test. Following sciatic nerve ligation, caffeine was administered orally (100 and 300 mg/Lit) for 28 days. The control group received tap water. Pain thresholds were recorded on days 4, 7, 14, 21, and 28. Nitric oxide metabolites (NOx) were measured with the Griess method in lumbar spinal cord tissue on day 28.

Results : Neuropathic rats showed decreased pain thresholds in thermal hyperalgesia. Chronic caffeine at the doses of 100 and 300 mg/L in drinking water for 28 days significantly alleviated hyperalgesia (P<0.01),(P<0.001). NOx levels remained unchanged in neuropathic rats and after chronic caffeine administration.

Conclusion : The results of this study indicate that chronic caffeine administration can alleviate the hyperalgesia in neuropathic rats. It seems that NO pathway is not involved in the central effect of caffeine in CCI model.

Keywords : Neuropathic Pain; Caffeine; Nitric Oxide; Hyperalgesia

Count: 357
Abstract ID: 80
subject: Neural Injuries and Neurodegenerative Disorders: Traumatic Brain Injury
Presentation Type: Poster

The neuroprotective effects of esculetin on the neurological scores, BBB permeability and brainwater content after severe traumatic braininjury in male rat: A behavioral study and biochemistry

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Background and Aim : TBI pathogenesis is a complex process that results from primary and secondary injuries that lead to temporary or permanent neurological deficits. The secondary injury can happen from minutes to days from the primary impact and consists of a molecular, chemical, and inflammatory cascade responsible for further cerebral damage. Esculetin (6, 7-dihydroxycoumarin) is a natural coumarin compound isolated from various plant species, such as Cichorium intybus .Esculetin possesses multifarious pharmacological activities, including anti-oxidant, anti-inflammatory and hepatoprotective effects. Therefore, in this study, we investigated the effects of neuroprotective esculetin after severe traumatic brain injury in male rats.

Methods : The male Albino wistar rats received different doses of esculetin (1, 2, 4 mg/kg, i.p.). All animals were intubated before surgery. In the TBI groups except sham and intact control groups, diffuse TBI was induced by using a weight 450 gr by Marmarou method. The neurologic scores (VCS) and brain water content, the beam-walk –balance task (WB) and BBB integrity (Evans blue) were recorded for three days. At the end of the third day from deep anaesthetized animals CSF was collected from cisterna magna and then analysis MMP-9 with Elisa assay.

Results : Our results showed that following TBI, cerebral edema, cerebrospinal fluid, neurological scores and Vestibulomotor function become defective and MMP-9 increases in compare with intact-sham control groups (P<0.001) but IP injection esculetin in dose -response manner improved above neurology dysfunctions and decreases MMP-9 but in 4 mg/kg dose results were better in compare with TBI-saline control groups (P<0.001).

Conclusion : These findings showed that esculetin has beneficial neuroprotective effects on the neurological scores, , neural repair and brain edema also it can decrease MMP-9 and BBB permeability after traumatic brain injury.

Keywords : esculetin, TBI, neuroprotection, blood brain-barrier, rat

Count: 358
Abstract ID: 67
subject: Computational Neuroscience: Modeling and Simulation
Presentation Type: Oral

In Silico Comparison of Two Herbal Acetylcholinesterase Inhibitors with Tacrine by Docking Method

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Background and Aim : Acetylcholinesterase (AchE) has been shown as the most important target to improve the Alzheimer's disease (AD) symptoms due to the findings about cholinergic deficiency in AD. Accordingly, AchE inhibitors are the well-known strategy in treatment of AD. In this regard, usage of herbal based medications in treatment of AD has been started. Silybum marianum (L.) Gaertn is a familiar plant in traditional medicine, commonly for treatment of liver disorders. Silymarin is the main active component of this plant, and it may be useful in memory disorders as AD. Rosmarinic acid is one of the main polyphenolic substances, existing in rosemary and other culinary plants, with pharmacologic properties. Hence, in this study we intended to compare the AchE inhibitory effects of silymarin and rosmarinic acid with tacrine, the known cholinesterase inhibitor, by docking method.

Methods : Protein structure of human AchE was picked from Protein Data Bank with PDB ID: 6O4W. As human AchE (PDB ID: 6O4W) had dimeric structure, the chain A was selected for docking process. The molecular structures of tacrine (CID: 1935), rosmarinic acid (CID: 5315615) and silymarin (CID: 7073228) were took from PubChem. Chimera 1.8 was used for protein editing and making the pdb files. Also, MGLTools 1.5.6, AutoDockTools-1.5.6 and AutoDock4 were applied to complete docking process.

Results : The inhibition constants (Kis) of silymarin, rosmarinic acid and tacrine in interaction with AchE (chain A) were 213.74 pM, 710.91 pM and 741.85 nM, respectively.

Conclusion : The docking results revealed that silymarin and rosmarinic acid presented much lower Kis than tacrine. Therefore, silymarin and rosmarinic acid seem to show higher affinity in interaction with human AchE in comparison with tacrine. Because tacrine is a potent inhibitor of AchE with potential of hepatotoxicity because of butyrylcholinesterase inhibitory effect, it seems that AchE inhibitory effect of silymarin and rosmarinic acid (in pico molar concentration) may be more effective than tacrine. Furthermore, there are experiments about effective inhibition of amyloid β-protein formation, one of the most significant lesions in pathogenesis of AD, by silymarin. Also, there is evidence on suppression of AD development by rosmarinic acid via reducing β-amyloid aggregation by increasing monoamine secretion. Amazingly, the in silico result of this study is in accordance with the other studies about good inhibitory effect of silymarin and rosmarinic acid on AchE and butyrylcholinesterase. Thus, the in silico evaluation of the inhibitory effects of silymarin and rosmarinic acid on AchE in comparison with tacrine might once more reveal the pharmacologic potential of these two herbal constituent in treatment of AD. Obviously, the evaluation of the affinity of silymarin and rosmarinic acid with butyrylcholinesterase is necessary to clarify the possible side effects.

Keywords : tacrine; rosmarinic acid; silymarin; acetylcholinesterase; docking

Count: 359
Abstract ID: 614
subject: Cognition: Cognitive Aging
Presentation Type: Oral

diabetic encephalopathy,mitochondrial function and exercise

Submission Author: AREZO NAHAVANDI

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Background and Aim : Diabetic encephalopathy (DE) is a chronic complication of diabetes mellitus that affects the central nervous system (CNS) and is characterized by cognitive impairment in the absence of any other predisposing factors. Mitochondrial function has different implications for diabetes in different cells and tissues, this is why it carries the potential for targeting mitochondria in the therapy of diabetes. exercise remains the most potent behavioral therapeutic approach for the improvement of mitochondrial health, not only in muscle, but potentially also in other tissues such as brain and CNS. Therefore in this study we first showed mitochondrial malfunction fallowing diabetic encephalopathy(diabetes induced cognitive impairment) in rat hippocampus and then compared the effect of insulin vs exercise on its improvement.

Methods : 48 male wistar rats ,weighting 200-250 gr, living in standard animal house condition we randomly selected. rats were divided into four groups: diabetes+saline, diabetes+i nsulin ,diabetes+exercise or intact .diabetes was induced by single IP injection of STZ 60 mg/kg .diabetic encephalopathy was confirmed 8 weeks fallowing diabetes induction,by impairmed step throgh latency,spontaneous alternation and EPM tests .At the end of 8th week,mitochondrial membrane potential and its function was examined by rhodamine 123 coloring.

Results : our results showed improvement of learning and spacial memory and anxiety in both diabetes+exercise($P<0.01$) and diabetes+insulin($p<0.05$) groups, compared with saline +diabetes group. mitochondrial membrane potential showed better improvement in exercise group compared with insulin taking diabetes group($P<0.001$ VS $P<0.05$).

Conclusion : our findings showed although insulin is the choice therapy of T1DM,but impaired cognitive function induced by abnormal hippocampal function and mitochondrial membrane potential in diabetic encephalopathy is more responsive to exercise compared with insulin. Regular high frequency exercise could be proposed to restore hippocampus mitochondrial function and prevent diabetes induced cognitive impairment/encephalopathy.

Keywords : diabetic encephalopaty,cognitive function,mitochondria,exercise,rhodamine 123,learning

Count: 360
Abstract ID: 613
subject: Cognition: Attention
Presentation Type: Poster

The effect of rhythmic exercises with music on attention among mentally retarded children

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Background and Aim : Attention is defined as a set of complex cognitive processes that includes focusing on a goal or working on it, maintaining or sustaining information, and staying vigilant for a long period of time, and encoding the characteristics of a stimulus, as well as shifting focus from one goal to another (Seidman & et al, 2006). Children with Intellectual Disabilities demonstrate attention below competence capacities for typically developing children. Debates concerning music training's impact on general cognitive and perceptual abilities among children. The aim of this study was to determine the effects of rhythmic exercises with music on attention among mentally retarded children

Methods : For this purpose, a semi-experimental design with pre-test and post-test design with two experimental and control groups was used. The research sample included 30 students educable mentally retarded children, aged 7-11 years old, experimental group=15 and control group=15. For evaluation of attention was used to Toulouse-Pieron attention test. In order to analyze the data was used the mix ANOVA (2×2) at the significance level of 0.05 to examine the differences between the two groups in the pre-test and post-test.

Results : The results of mix analysis of variance showed that rhythmic exercise with music (experimental group) had positive and significant effects on attention (P=.033) among educable mentally retarded children. When the pre-training and post-training parameters were compared between the groups, an increase was determined in the parameters of attention. As a result; rhythmic exercises combined with music were found to be effective in faculty of attention among mentally retarded children.

Conclusion : Findings of this study clearly indicate that rhythmic exercises with music have an important effect on the attention as one factor of cognitive development among mentally retarded children. Given these common mechanisms, rhythmic exercises with music may be useful for promoting the cognitive development and for improving the efficacy of remedial attempts for individuals with mentally retarded children.

Keywords : rhythmic exercises;attention;Children;mentally retarded

Count: 361
Abstract ID: 509
subject: Neural Injuries and Neurodegenerative Disorders: Ischemia, Stroke, and Neurovascular Disorders
Presentation Type: Oral

The effect of Cinnamomum Zeylanicum extract pre-nutrition on prevention of stroke in high-fat diet receiving rats

Submission Author: Solmaz Najjary

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Background and Aim : Acute ischemic stroke is the most frequent cause of permanent disability in adults worldwide and the second leading cause of death after cancer and heart disease in Iran. According to the previous studies, the anti-inflammatory, anti-oxidant, anti-blood lipid and anti-angiogenesis properties of cinnamon have been proven. In this study, the pre-nutritional effect of hydroalcoholic extract of cinnamon on the expression of genes involved in the destruction of the blood-brain barrier and its increased permeability after cerebral stroke was studied after receiving a high-fat diet.

Methods : In this study,60 Wistar rats were divided into 5 groups (n=12): control, sham, model, low dose cinnamon (130 mg/kg) and high dose cinnamon (260 mg/kg). All groups except the control group were on a high-fat diet for 8 weeks. Stroke was induced through Middle Cerebral Brain Artery Occlusion (MCAO). 12 hours after the induction of stroke, the animals were sacrificed and brain tissue evaluated for the expression of calpainI, calpainII, occludin, and VEGF genes and P-selectin protein.

Results : Hydroalcoholic extract of high-dose cinnamon has been effective in reducing the expression genes of calpainII, vegf, and P-selectin proteins and increasing the expression of occludin gene (P<0/001). Low dose and high dose cinnamon decreased significantly the expression of calpainI gene (P<0/001).

Conclusion : Pre-treatment with Hydroalcoholic Extract of Cinnamon reduced the calpainI, calpainII,vegf mRNA levels and level of P-selectin protein and increase occludin mRNA level. thereby prevent the permeability of the blood-brain barrier and its subsequent edema in ischemia-reperfusion.

Keywords : Stroke; calpainI; calpainII; occludin; P-Selectin; vegf

Count: 362
Abstract ID: 494
subject: Cognition: Other
Presentation Type: Poster

The Effectiveness of Existential Group Therapy on Psychological Well-Being of Students Residing in Ahvaz Azad University Dormitory

Submission Author: Sedighe Nakhaee

Sedighe Nakhaee[1], seyedeh fatemeh edalatian [2]

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Background and Aim : The purpose of the present study was to investigate the effectiveness of existential group therapy on psychological well-being of students residing in Ahvaz Azad University dormitory.

Methods : This study is a quasi-experimental with pre-test and post-test design with control group and applied type. Statistical population was all students of Ahvaz Azad University. The experimental group received existential therapy and the control group did not receive any intervention. Data collection tool was Reif's Psychological Well-being Questionnaire (1995). Data were analyzed by SPSS software.

Results : The results showed that existential group therapy significantly increased students' psychological well-being. Practical theoretical perspectives will therefore be discussed.

Conclusion : Conclusion: Considering the efficacy of existential group therapy on students' psychological well-being, it can be concluded that in order to enhance psychological well-being among students, especially students living in dormitories, they experience different conditions than other students. Existential group therapy classes can be used as a workshop in universities and centers.

Keywords : Ahvaz Azad University Students, Existential Group Therapy, Psychological Well-being

Count: 363
Abstract ID: 157
subject: Emotion, Motivation
and Behavior: Behavioral Pharmacology
Presentation Type: Poster

Antidepressant-like effect of N-type calcium channel antagonist, Ziconotide in rats

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Background and Aim : Unlike other calcium channel blockers (T and L-type), there is no clear study on the antidepressant effect of ziconotide in animals and clinical trials. So the aim of the current study was to investigate the antidepressant-like effect of ziconotide as a neuronal calcium channel blocker in rats

Methods : Male rats weighing 200-250 g were used in this study. In animals, in order to induction of mild depression, rats were exposed to a limited diet and high density in their cages (20 rats in a 10 rats capacity standard cage) for a week. Rats were injected intracerebroventricular (ICV), acutely (a single dose) and chronically (3 doses once daily for a week) with ziconotide, undergoing stereotaxic surgery and then FST test was performed. Immediately after the behavioral test, the animals were decapitated and their hippocampi were removed and prepared for evaluation of brain-derived neurotropic factor (BDNF) using ELISA kit

Results : Duration of immobility in the group receiving chronic doses of ziconotide (0.1, 0.3 and 1 µg / rat), was significantly lower than the control groups ($P < 0.01$). Also, latency to immobility following all chronic doses of ziconotide was significantly higher than the control group ($P < 0.05$). Furthermore, control group had lower hippocampal BDNF levels compared to the treated animals with chronic doses of ziconotide ($P < 0.05$). A single dose of ziconotide (1 µg/rat) had no significant changes in any above parameters

Conclusion : Ziconotide can reduce the symptoms of depression in rats probably through elevating the hippocampal BDNF concentration.

Keywords : Ziconotide, Depression, BDNF, Rat

Count: 364
Abstract ID: 215
subject: Emotion, Motivation
and Behavior: Neural Basis of Human Behavior
Presentation Type: Poster

Effect of Neuronal calcium channel blocker, Ziconotide on memory function in rats

Submission Author: Maryam Nankali

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Background and Aim : Unlike other types of calcium channel blockers (L / T-type), there is no clear study on the neuroprotective behavioral effects of ziconotide, including memory and cognitive function in animal and human. The aim of the present study was to investigate the effect of ziconotide as a neuronal calcium channel blocker on memory in rats

Methods : Male rats weighing 200-250 g were used in this study. Ziconotide was administered [i.c.v. (intracerebroventricular), single and chronic doses (at 3 doses, once daily during 1 week)] in animals undergoing stereotaxic surgery. Novel object recognition task (NORT) was used to assess cognitive memory and passive avoidance test (PAT) was performed to assess conditional memory in rats

Results : Recognition index (RI) in the groups receiving chronic doses of ziconotide (0.1, 0.3 and 1 µg / rat) was significantly higher than control group ($P < 0/05$). In PAT test, latency time (time lapse before the first entry into the dark compartment) in rats treated with all chronic doses of this drug significantly was higher than the control group ($P < 0/05$). Acute administration of ziconotide at the dose level of 1µg/rat did not show any significant changes in any above parameters.

Conclusion : Calcium accumulation in neurons can be initiate biochemical cascade and lead to neuronal death including cells involved in memory function in the hippocampus and the anterior cortex. So it looks like that ziconotide blocks calcium channels and prevent the release of excitatory neurotransmitters (e.g. Glutamate) in the brain and enhances memory function in rats.

Keywords : ziconotide, memory, calcium channel, rat

Count: 365
Abstract ID: 601
subject: Cognition: Attention
Presentation Type: Oral

The comparison of stimulus-driven attention and attention bias among trauma survivors with PTSD, trauma survivors with no PTSD and non-trauma-exposed control participants

Submission Author: Leila Nategh

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Background and Aim : We hypothesize that the trauma-exposed people without PTSD, have more attention deficits than PTSD patients. These cognitive impairments may have led to their reaction to the traumatic event.

Methods : First, we want to assess arousal and bottom-up attention during their responding to neutral, emotional (positive and negative), and traumatic stimuli by using event-related potentials (ERPs); and compare their results with PTSD patients. Besides, the results should be analysis among people without any traumatic experience to compare each group with our control group. We hypothesize that the trauma-exposed participants have more attention and memory deficits than PTSD patients, and this impairment might help them to suppress the traumatic event. Second, attention bias in PTSD has investigated in many articles. Most of which reported facilitation bias or avoidance bias (two opposite points) for traumatized people. In the second part of this research, we want to discriminate the attention bias in our three groups of participants by traumatized and non-traumatized stimuli. The hypothesis is that the PTSD patients have a facilitation bias; on the other hand, the traumatized people without PTSD, avoid the traumatic stimuli. Both of these attention biases -avoidance or facilitation- are related to top-down attention mechanism, and at the final stage of our research, we can compare the top-down and bottom-up attention among PTSD, traumatized, and non-traumatized people.

Results : In conclusion, we assume that patients with PTSD have different bottom-up attentional mechanisms than traumatized individuals without current PTSD. Our next assumption is that the facilitation bias is more in PTSD patients, and avoidance bias has more prevalence among non-PTSD traumatized people. It could be related to people coping strategies against traumatic memories.

Conclusion : People exposed to trauma who do not develop long-term post-traumatic stress disorder, might have various strategies to suppress or cope with their traumatic memory. If we can prove that the amounts of attention deficits might help non-PTSD trauma-exposed people, it might be changed some of the PTSD therapeutic viewpoints (such as trauma-focused cognitive behavioral therapy) and more concentrated on bottom-up strategies instead of top-down ones.

Keywords : Memory, Attention, Attention Bias, Emotional Memory, PTSD, Traumatic Memory

Count: 366
Abstract ID: 572
subject: Social Neuroscience: Self perception and regulation
Presentation Type: Poster

Manipulation by Memory: Self-Report or Self-Guilt

Submission Author: Leila Nategh

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Background and Aim : Studies have shown that self-reports can be effective in enhancing one's attitude toward their performance and helps people to regulate their behavior efficiently. In this study, we want to investigate the self-report impacts and suggest other strategies which can be more beneficial for self-regulation problem.

Methods : In the first step, participants with emotion regulation problems will have evaluated in this study. Each day they should record their daily activities and emotion-regulation performances. These clients will have given cognitive and emotion training that they should perform every day. At the end of each night, a report record by participants demonstrates that whether they do their daily schedules and cognitive exercises or not. Moreover, they should write their satisfaction from their functions and send all of these to the examiners. After the registration period, the data will be conducted in two stages. The report will be discussed. According to the former researches, It is expected that a negative report of failure will be more than positive reports. At the next stage they will take an autobiographical memory test, from items that they will have been recording. The retrieval of these items would be delayed free recall, and for this reason, we can assume that the contiguity and strategy impacts, will have omitted on their retrieval. Based on the previous research, we guess that negative stimuli elicited more activity in the amygdala and will be more permanent than positive ones.

Results : We expect that items, which more and better recorded in self-reporting, will also be easier in information retrieval. On the other hand, since the recorded items have emotional content, the oddball effect is also taken into account, and its effect on the positive items will also be considered.

Conclusion : It seems that more items with negative emotions, have a major portion of delayed free recall and This might be causing the feeling of self-guilt in these participants. By these assumptions, it would be better to find alternatives to restrain the higher retrieve of negative emotions during self-report.

Keywords : Self-Regulation, Social Emotions, Memory, Self-Guilt

Count: 367
Abstract ID: 415
subject: Cognition: Consciousness
Presentation Type: Poster

Unconscious adapting strategies dissociate top-down from bottom-up visual object processing

Submission Author: Samane sadat Navab kashani

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Background and Aim : Although massive body of imaging studies provide neural substrate of unconscious object processing(Sterzer, Jalkanen, & Rees, 2009)(Suzuki & Noguchi, 2013), behavioral data couldn't capture this effect in the context of unconscious priming(Moradi, Koch, & Shimojo, 2005)(I Amihai, L Deouell, 2011). To clarify variety, modality, and magnitude of conscious and unconscious priming, we used name-picture verification task and employed words and pictures as a prime stimuli using a binocular rivalry setup. We examine both level of abstraction for categorizing, i.e. basic and subordinate, to address bottom-up and top-down processing in the brain.

Methods : Four categories of stimuli in two levels of abstraction, i.e. basic and subordinate level, were applied in the experiment. Both image and word version of stimuli were presented as prime, sample word, and image target in name-picture verification task. In unconscious conditions, we presented stimuli rendered invisible through binocular rivalry. Using continues flash suppression, the strength of unconscious influence in prime stimuli were increased by raising time invisibility.

Results : Our results illustrate the different influence of unconscious priming on both basic and subordinate levels. The unconscious priming at the basic levels facilitates the processing of name-picture verification task by reducing the reaction times, whereas sub ordinate unconscious priming lead to negative priming influences, reflecting impairment in response time of following verification task. Interestingly, there is opposite direction of priming effect across conscious trials. This observation reveals measurable differences between conscious and unconscious processing. The laterality analyses of face image trials suggest a strong role of left hemisphere in unconscious face processing, while the right hemisphere is salient in representation of word used for priming face pictures in name-picture verification task.

Conclusion : Since subordinate processing in the brain needs feedback connections, the facilitation of conscious priming of this level can be considered as an extra information which provides by prim stimulus and helps top-down signals for accurate representation. While in bottom-up basic level processing, the conscious priming information acts as an adaptor which leads to impairment of perception.

Keywords : unconscious priming, binocular rivalry, continues flash suppression, different level of abstraction, top down processing

Count: 368
Abstract ID: 211
subject: Cognition: Learning and Memory
Presentation Type: Poster

Evaluation the protective effects of zinc and selenium co-administration on the oxidative stress in the brain's mitochondria and GPR 39 expression assessed in the rat model of streptozotocin-induced A

Submission Author: Seyedeh parisa Navabi

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Background and Aim : Changes in trace metal concentrations can pathologically lead to neurodegenerative conditions, including zinc (Zn) and selenium (Se) that might be associated with the development of Alzheimer's disease (AD). These metals showed protective effects in the animal model on memory and learning deficits and oxidative stress level via different pathways such as mitochondria.
Methods : Male wistar rats were divided in five groups including sham, Alzheimer disease (AD), AD + Zn (10mg/kg, intraperitoneal or i.p, solved in PBS), AD + Se (0.1 mg/kg, i.p, solved in PBS) and AD +Zn/Se co-administration group. Rats pretreated with Zn or/and Se for one week before AD induction via Streptozotocin (STZ, 3 mg/kg/10 μl/rat, intracerebroventricular injection, vehicle: artificial cerebrospinal fluid or aCSF). After two weeks' recovery period, Spatial memory test via Morris water maze, mitochondria's membrane potential ($\Delta\psi$m) and indexes of mitochondria's oxidative stress including malondialdehyde (MDA) and reactive oxygen species (ROS) as well as glutathione (GSH) and catalase (CAT) plus of GPR39 expression, a zinc receptor, in the brain of rats via Real time PCR were assessed.
Results : The indices of spatial memory, all mitochondria's factors (membrane potential and oxidative stress) and GPR39 expression significantly were impaired in AD rats in comparison with the sham group. Co-administration of Zn and Se show more influence on measured factors in current experiment in comparison with the alone injection, but in except of spatial memory test did not significant criteria.
Conclusion : Zn/Se co-administration with different pathways such as mitochondria's performance or gene expression may be improved destructed effects of STZ-induced as a model of AD that can overall be present in sign of AD such as memory progression.
Keywords : Alzheimer's disease, selenium, zinc, learning and memory, Mitochondria's oxidative stress, GPR39 expression

Iran University of Medical Sciences

Iranian Neuroscience Society

Count: 369
Abstract ID: 81
subject: Neuropsychiatry and Psychology: Other
Presentation Type: Poster

The Orexin receptor-2 gene (OX2R) as a candidate gene in somnolence associated with sertraline in depressed patients

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Background and Aim : Selective serotonin reuptake inhibitors (SSRIs) are considered as first-line drugs for treating depressive disorders. Among the adverse effects reported with sertraline is sleep disturbances however the etiology lying beneath is obscure. Orexin the most recently discovered neurotransmitter is involved in sleep cycle. It exerts its physiological actions by means of orexin receptor 1 and 2 (OXR1 & OXR2). Dysfunction of orexin system contributes to various psychiatric, neurologic and neuropsychiatric disorders. Thus the aim of our study was to assess the possible association of genetic variation of OX2R G1246A with hypersomnia reported with sertraline in a group of MDD patients.

Methods : Ninety six newly diagnosed MDD patients were enrolled in our cohort study. MDD was assessed using DSMV criteria. Sleep pattern was assessed using PSQI. Patients were interviewed at base line (week 0) and week 4. Blood samples were collected for further genotyping of OX2R G1246A by means of PCR-RFLP.

Results : Results of our study indicate a strong association between G1264A polymorphism of OX2R and hypersomnia. Hypersomnia with sertraline happens by 4.6 folds (P=0.001; OR=4.67; 95%CI: 1.83-11.87) in patients having the genotype with the A allele (AA and GA genotypes). Patients with the A allele experience hypersomnia 3 folds more than carriers of the G allele (P=0.001; OR=3.16, 95%CI= 1.59-6.27).

Conclusion : In conclusion, G1246A variant might be a predictor for somnolence in MDD patients treated with sertraline. Our findings support the idea that some variants of the OXRs might contribute to inter individual variability in sleep pattern of patients receiving antidepressants.

Keywords : Orexin receptor-2; Sleep; Hypersomnia; Selective serotonin reuptake inhibitors, Sertraline

Count: 370
Abstract ID: 552
subject: Neural Injuries and Neurodegenerative Disorders: Ischemia, Stroke, and Neurovascular Disorders
Presentation Type: Oral

The membrane mesenchymal stem cell derived conditioned medium attenuates focal cerebral ischemia/ reperfusion injury in rats

Submission Author: Donya Nazarinia

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Background and Aim : Stroke is a cerebrovascular disorder that results in a high degree of mortality and morbidity around the world. Previous studies have shown that conditioned medium (CM) obtained from mesenchymal stem cells (MSCs) might exert neuroprotective effects against different neurodegenerative disorder. The present study was performed to investigate whether the amniotic mesenchymal stem cells-conditioned medium (AMSC-CM) can confer neuroprotection against focal cerebral ischemia/ reperfusion (I/R) reduction of blood–brain barrier (BBB) damage and reduce of apoptosis.

Methods : A rat model of middle cerebral artery occlusion (MCAO) was created and the animals were divided into three groups including sham, MCAO and MCAO+ hAMSC-CM. The AMSC-CM at the dose of 1 μl was intravenously administrated to rats. Apoptosis and BBB damage , were assessed 24 h after reperfusion using TUNEL staining and Evans Blue (EB) uptake, respectively.

Results : intravenously administration of AMSC-CM markedly reduced BBB damage compared to MCAO group (P < 0.05). Additionally, treatment with AMSC-CM significantly reduced apoptotic cell death compared to MCAO group (P < 0.05).

Conclusion : Collectively, our results demonstrated that hAMSC-CM contributed to neuroprotection following ischemic stroke by reduction of BBB damage and apoptosis. These findings suggest the validity of AMSC-CM as a good therapeutic agent for acute stage stroke.

Keywords : cerebral ischemia/ reperfusion; amniotic mesenchymal stem cells; conditioned medium; apoptotic cell death; BBB damage

Count: 371
Abstract ID: 553
subject: Cognition: Learning and Memory
Presentation Type: Poster

The most valuable biomarkers of Alzheimer's disease: A review article

Submission Author: Donya Nazarinia

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Background and Aim : Alzheimer's disease (AD) is the most popular type of dementia in elderly and is described by a progressive loss of cognitive capacity and severe neurodegeneration which typically begins with memory deficits. The major biomarkers of AD include total tau, phosphorylated-tau and 42 amino acid isoform of amyloid beta that reflect neurodegeneration and indicate the pathophysiological processes in AD. Biomarkers have been analyzed in different kinds of body fluid. Cereberospinal fluid (CSF) biomarkers are particularly valuable to discriminate early AD from other diseases associated with memory impairment.

Methods : In this article, we reviewed different kinds of biomarkers and their validity to diagnose and effectiveness in AD therapy. biomarkers included CSF biomarkers, Neuronal imaging biomarkers,Blood biomarkers,Anatomical Markers, Pathophysiological marker , Peripheral markers.

Results : Extensive evidences suggest that CSF biomarkers have high sensitivity and speci?city for diagnosis and monitoring of Alzheimer brains.

Conclusion : Use of neuroimaging and CSF biomarkers provide new insights into brain organization and enable the detection of specific proteins and/or protein aggregates associated with AD.

Keywords : Biomarkers, Alzheimer's disease, Blood, Cereberospinal fluid

Count: 372
Abstract ID: 212
subject: Cognition: Learning and Memory
Presentation Type: Poster

Effects of Ziziphus Jujuba extract on learning and memory in propylthiouracil induced hypothyroidism in neonatal and juvenile rats: protection against acetylcholinesterase activity and neuronal oxidat

Submission Author: Zahra Niazi mashhadi

Zahra Niazi mashhadi[1], Zahra Baradaran[2], Farimah Beheshti [3], Hassan Azhdari-Zarmehri[4], Masoumeh Gholami[5], Mahmoud Hosseini [6], Pouya Farahmandnia[7], Faranak Jafari[8]

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Background and Aim : It has been shown that hypothyroidism-induced oxidative damage in brain tissue is involved in its adverse effects on learning and memory. Ziziphus Jujuba (ZJ) has been suggested to have antioxidant and neuroprotective effects. In present study, we investigate the effects of hydroalcoholic extract of ZJ on hypothyroidism-associated learning and memory impairment in neonatal and juvenile rats. Thirty pregnant rats were kept in separate cages.

Methods : After delivery, the mothers and their offspring were randomly divided into five groups including:(1)control,(2)PTU(propylthiouracil),(3)PTU-ZJ100mg,(4)PTU-ZJ150mg and (5)PTU-ZJ200mg (PTU plus ZJ extract 100, 150 and 200 mg/kg respectively). All dams except the control group received 0.005% PTU in their drinking water during lactation. After lactation period, pups continued to receive same experimental treatment for the first 8 weeks of their life. Then, 10 male offspring of each group were randomly selected and assessed for the learning and memory abilities in Morris water maze (MWM) and passive avoidance (PA) test and biochemical assessments.

Results : PTU increased latency, traveled distance in 5 days and reduced time spent in target quadrant in probe day in MWM and decreased latency for entering to the dark compartment in PA. PTU reduced serum T4 and thiol groups, superoxide dismutase (SOD) and catalase activities in brain and increased molondialdehyde (MDA) and AChE activity. ZJ extrctc reversed these effects.

Conclusion : The findings of this study imply that treatment with ZJ may improve deleterious effects of hypothyroidism on learning and memory during neonatal and juvenile growth. Protection against brain tissues oxidative damage was as a possible mechanism of ZJ. Also, ZJ attenuates AChE activity in brain tissues of hypothyroid rats.

Keywords : Ziziphus Jujuba; Hypothyroidism; Memory; Oxidative stress; Acetylcholinesterase activity.

Evaluation of the facial pain perception in Post-traumatic stress disorder rats by eye- wiping and allodynia test

Submission Author: Marjan Nikbakhtzadeh

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Background and Aim : Post-traumatic stress disorder (PTSD) symptoms and the associated pain can be appeared repeatedly following traumatic events. In acute stress condition, pain perception significantly covered by HPA axis activity. Studies have a controversy about changes in pain perception in PTSD stress condition. In the present study, changes of facial acute pain and allodynia have been evaluated in an animal model of PTSD.

Methods : 80 Male wistar rats were divided in to two groups as following: control and stress. PTSD was induced by single prolong stress (SPS) method and confirmed by elevated plus maze (EPM) and rats plasma corticosterone levels. The facial pain is evaluated by the eye wiping test and von Frey test in separated groups.

Results : SPS rats spent less time in EPM and had a fewer entries into open arms of EPM ($P<0.05$). The corticosterone level significantly have reduced in SPS group in comparison to control ($p<0.05$). The number of eye-wiping significantly decreased in SPS rats in comparison to control ($p<0.001$). The response threshold of von Frey filament application in face of SPS rats significantly augmented in comparison to control ($p<0.001$).

Conclusion : This study showed that acute pain perception and allodynia reduced in SPS condition. Increased endogenous opioids in PTSD condition may lead to reduction of facial pain perception.

Keywords : PTSD; pain; Allodynia; Eye-wiping; Facial

Count: 374
Abstract ID: 353
subject: Social Neuroscience: Other
Presentation Type: Poster

Fenofibrate protects the brain against seizure-induced damage in PTZ-induced also at the same time checked The effect of anxiety behaviors and depression in male rats.

Submission Author: Amirhossein Niksiyar

Amirhossein Niksiyar[1]

1.   Amirhossein Niksiyar

Background and Aim : the effect of continuous immobilization stress on anxiety-like behaviour, spatial learning and memory, and a forced swim test in NMRI male mice was examined in the present study. the plasma cortisol changes and the brain-derived neurotrophic factor (BDNF) were also evaluated. Epilepsy is one of the most common and serious neurological chronic disorders of the brain. In present study, we evaluated the protective effects of fenofibrate (peroxisome proliferator-activated receptor-alpha, PPAR-α agonist) on seizure-induced brain damage in pentylenetetrazole (PTZ)-induced kindle mice.

Methods : the male NMRI mice were divided into control and stress groups (n=10 per group). the stress group was placed in pvc cylinders (25 mm in diameter and 20 cm in length) for 360 minutes. twenty-four hours later, the mice were tested for spatial learning and memory, anxiety-like behaviour, and depression using the barnes maze, an elevated plus maze and a forced swim test, respectively. also, plasma cortisol level and brain BDNF content assessed by the elisa method.Four groups of male mice (NMRI) were randomly selected (n=12); control, seizure and two seizure treated groups. Seizures were induced by the intraperitoneal injections of PTZ (65mg/kg) every 48 hours. PTZ injection was continued till day 29 and the latency times of seizures were recorded. Treatment groups were administered orally fenofibrate in two different doses (30 and 50 mg/kg) every day. At termination of experiment, the levels of serum cortisol and brain-derived neurotrophic factor (BDNF) as well as brain BDNF were assessed by ELISA method. Also, blood-brain barrier (BBB) permeability, malondialdehyde (MDA) content and mRNA transcript of P53 protein were assessed.

Results : It was observed a progressive reduction in latency times of seizures in the next injections of PTZ, whereas fenofibrate in both doses reduced these times. Inductions of the seizures increased the serum content of BDNF and cortisol as well as the brain contents of BDNF and MDA. Also, the seizures significantly increased the BBB permeability and the mRNA transcript of P53 protein in brain tissue. Administration of fenofibrate in kindle mice particularly in high dose (50 mg/kg) significantly decreased the BBB permeability and MDA content. Fenofibrate by two doses in seizure mice reduced the serum and brain contents of BDNF as well as the serum cortisol also the results indicated that the mice in the stress group had elevated plasma cortisol. in addition, there were no differences between the stress and control groups in the time taken and the distance travelled to reach the target hole. the animals in the stress group spent more time in the open arms of the maze and entering the open arms, compared to the control group. the control group did not show any signs of depression but the stress group showed clear signs of it. the brain BDNF concentration also increased significantly in the stress group compared to the control group.

Conclusion : Our findings indicate that PPAR-α agonist of fenofibrate is able to modulate the seizure behaviors of PTZ-induced kindle mice. It also inhibits the seizure-induced brain damage such as BBB breakdown, oxidative damage, apoptosis and stress behaviors.acute sustained stress increased the brain BDNF level. it can facilitate anxiety-like behaviour and depression, which may be due to a plasma glucocorticoid increment. however, the stress does not affect spatial learning and memory.

Keywords : Blood-brain barrier; Brain-derived neurotrophic factor; Cortisol; Epilepsy; Fenofibrate; Oxidative damage; anxiety; depression

Count: 375
Abstract ID: 17
subject: Cognition: Cognitive Aging
Presentation Type: Poster

Cognitive disorders and Some associated Social factors in elderly Semnan, Iran

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Background and Aim : Cognitive disorders in the elderly are more associated with symptoms of depression. Existing data about of cognitive disorders in the elderly is very rare. The purpose of this study was to determine the cognitive disorders and some related Social factors in the elderly in Semnan.

Methods : In this cross-sectional study, 260 elderly people aged 60 to 80 years old with at least primary education were included in the cluster sampling method resident in Semnan, in 2015. The households were systematically selected, based on the distribution of health centers in the city, according to the population of each center, the elderly of that area were determined and then to one fifth of households in each center. Data collection tools were demographic information questionnaire and cognitive health scale (Mini Mental State Examination, MMSE). The process of completing the questionnaires was that the elderly responded to the questions independently and was provided adequate and supplementary explanations, if there was any ambiguity about the completion of the questionnaire.

Results : 56.5% were female and the rest were male. 18.1% had mild cognitive disorders (21-24 points), 35% had moderate cognitive disorders (10-20%), and 1.2% had severe cognitive disorders (score less than 9%). 34.5% of men and 69.4% of women had cognitive impairment. Cognitive health had a negative significant correlation with age (P=0.001, r= -0.203), with a significant correlation with literacy (r = 0.754, p = 0.001). There was a significant relationship between cognitive health and sex (P<0.001), cognitive disorders was lower in elderly with their lived spouses (P<0.001). Also had no significant relationship between cognitive health with underlying disease (P=0.118).

Conclusion : Findings showed that more than half of the elderly had cognitive disorders. Screening of cognitive disorders, especially in women, with a low level of education and the elderly whose spouses' died, can be detected early and prevention of the progression of the disorders.

Keywords : Elderly; Cognitive disorders; Cognitive Health Scale.

Count: 376
Abstract ID: 15
subject: Cognition: Other
Presentation Type: Poster

Effect of Valerian on Cognitive Disorders and Electroencephalography in Hemodialysis Patients: A Randomized, Cross Over, Double-Blind Clinical Trial

Submission Author: Monir Nobahar

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Background and Aim : The prevalence of cognitive disorders in hemodialysis patients is twice as high as the general population, while these disorders often are undiagnosed. Timely prevention and treatment can improve their personal and social functions. Aim of study was determined the effect of Valerian on cognitive disorders and electroencephalography (EGG) in hemodialysis patients.

Methods : This crossover, double-blind clinical trial was conducted on 39 hemodialysis patients. The patients were randomly divided into two groups. Group A (n=19) took Valerian capsules and Group B (n=20) received placebo capsules 60 minutes before bedtime for one month. The type of treatment was replaced between the two groups after a one-month wash-out. The Mini Mental State Examination (MMSE) questionnaire was completed and EGG was performed before and after intervention in both periods.

Results : The cognitive scores of the Group valerian were increased significantly in the first (p=0.003) and the second (p=0.005) periods. In addition, the mean increase in the cognitive scores in the Group valerian was significant in the first (p=0.028) and the second periods (p=0.030). However, the changes in EGG showed no significant difference before and after intervention in two groups.

Conclusion : The findings of this study indicated that valerian could be effective and significantly improve patients' cognitive status; however, no significant changes were observed in the electroencephalography of the hemodialysis patients.

Keywords : Cognitive Disorders; Electroencephalography; Hemodialysis; Valerian.

Count: 377
Abstract ID: 245
subject: Neural Injuries and Neurodegenerative Disorders: Spinal Cord Injury
Presentation Type: Poster

Oxidative stress and Neurodegenerative diseases: The effect of quercetin on morphological features of apoptosis.

Submission Author: Hamidreza Noghli

Hamidreza Noghli[1]

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Background and Aim : During spinal cord injuries and neurodegenerative diseases such as Amyotrophic Lateral Sclerosis (ALS), apoptosis of motor neurons is reported. In order to extensive researches still there is no universally accepted treatment for these diseases. Therefore, studying on mechanisms involved in apoptosis of motor neurons can be helpful for survival of these neurons. Since, oxidative stress is one of the reasons for apoptosis of motor neurons the application of antioxidants might be effective on viability of these neurons. There for, the aim of this study was to investigate if, quercetin as a powerful antioxidant with reducing oxidative stress, delay the apoptosis of the motor neurons in cultured spinal cord slices.

Methods : Thoracic region of spinal cord of NMRI adult mouse was cut in to 500 µm slices using a tissue chopper. The slices were then divided to three groups: 1. Freshly prepared slices (0 hour); 2. Control slices; 3. Slices treated by quercetin with effective concentration (100 µM). The control and the treated slices were cultured in a medium for 6 hours in a CO_2 incubator. After fixation, the slices were cut using a cryostat. Morphological features of apoptosis in the motor neurons was studied using fluorescent staining including Hoechst and propidium iodide. MTT [3-(4,5-dimethylthiazol-2-y1)2,5-diphenyltetrazolium bromide] assay was used to evaluate slice viability in three groups. Data were analyzed using one-way ANOVA and Tukey's test.

Results : After 6 hours -compared to the control group- the motor neurons displayed morphological features of apoptosis including cell shrinkage as well as nuclear and chromatin condensation. In addition, the viability of cultured slices, significantly decreased as compared to freshly prepared slices. At this time point, quercetin not only delayed morphological features of apoptosis in the motor neurons compared to the control group but also significantly compensate the cell viability in the cultured slices.

Conclusion : Since, quercetin, as a potent antioxidant, was able to delay the morphological features of apoptosis and increase the viability of motor neurons of cultured spinal cord slices, it is possible that oxidative stress is responsible for apoptosis of the motor neurons.

Keywords : Apoptosis, Oxidative stress, Quercetin, Motor neuron, Spinal cord slices

Count: 378
Abstract ID: 381
subject: Cognition: Learning and Memory
Presentation Type: Poster

An automated device for training macaque monkeys

Submission Author: Jalaledin Noroozi

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Background and Aim : Non-human primates (NHPs) are the best animal model for studying the neural mechanisms of high level and cognitive behaviors, because an NHP brain has many similarities to a human. In common neurophysiological experimental settings, macaque monkeys normally are required to temporarily leave the housing facility to be trained in dedicated experimental settings outside their cage environment. Animals have to learn to accurately operate devices such as a touchscreen, a joystick, a lever, or a button. These devices let a monkey interact with the behavioral paradigm during cognitive tasks such as delay match to sample (DMS). The recoding procedure could not be started until the training has been completed. This laboratory in-chair training is a time-consuming process with inherent limitations.

Methods : To overcome these issues, we developed a low-cost, open-source and touchscreen training system that can be installed in the cage environment and automated all training process. The automatic device training (ADT) can run continuously all day, including over weekends, without experimenter intervention. Since we run the experiment using MATLAB psychtoolbox, a wide range of behavioral training can be implemented by ADT. We trained naïve rhesus monkeys to perform a wide range of cognitive tasks from touchscreen interaction to the complex DMS compromised large stimuli.

Results : The ADT provides stress free-conditions for animals, so they can learn a difficult cognitive task in a short period of time without applying any restriction or water deprivation. Monkeys enjoy filling their empty time with ADT.

Conclusion : Using this method, we trained three monkeys to perform DMS task in less than two months which is considerably less than traditional methods training time.

Keywords : automatic device training; low-cost; macaque monkeys; cognitive tasks

Count: 379
Abstract ID: 266
subject: Motor Systems
and Movement Disorders: Motor Neurons and Muscle
Presentation Type: Poster

The effect of propolis implantation on skeletal muscle atrophy in peripheral nerve injury

Submission Author: Mahsa Nosratian

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Background and Aim : Peripheral nerve injuries are widespread in trauma happenings. Nerve injuries are important because it can cause lifelong disabilities. One of the complications of nerve injuries is atrophy of the skeletal muscles innervated by the injured nerve. Skeletal muscle atrophy can affect the quality of life. Moreover it is associated with increased invalidism and life expectancy. Currently there is no proper treatment for muscle atrophy, just exercise and protein supplements. Propolis is a natural resinous product of honeybees from parts of plants such as buds and exudates. Propolis has pleasant smell because of aromatic compounds. It varies in color from yellow, green too red and dark brown depending on its origin and age. It has been used in folk medicine for its special properties such as anti-bacterial, anti-inflammatory, anti-oxidant, angiogenesis, anti-tumor, anti-fungal and etc. The present study is to investigate the effect of natural product of honeybees named propolis, against gastrocnemius muscle in the nerve injury conditions.

Methods : 24 adult male rats were randomly divided into 3 groups as sham surgery, control group and propolis group. After routine preparation, under general anesthesia, left sciatic nerve was exposed. Next, 10mm nerve segment was cut and then sutured the distal and proximal stump of nerve with 8-0 nylon in both propolis and control groups. Then put a piece of sterilized raw brown propolis at the suture places in propolis group. In the sham group just exposed the sciatic nerve. Finally in all groups the muscle and the skin were sutured with 4-0 nylon. 30 and 90 days after surgery, all animals were evaluated by wet muscle weight and muscle fiber diameter with H&E staining.

Results : On day 30 after surgery, the mean of muscle fiber diameters was greater in propolis ($40.11\pm2.7\mu m$) than control ($27.46\pm3.2\mu m$) groups. The difference between them was statistically significant ($p<0.01$). The mean of wet muscle weight in propolis ($1.408\pm0.21g$) was greater than control ($0.87\pm0.14g$) groups ($p<0.01$). The mean of wet muscle weight in sham group ($1.76\pm0.23g$) was greater than other groups. But the difference between sham and propolis group was not statistically significant ($p>0.05$). On day 90 post operation the mean of muscle fiber diameters was greater in propolis ($46.12\pm3.2\mu m$) than control ($36.48\pm2.5\mu m$) groups ($p<0.02$). The mean of muscle fiber diameter in sham group ($50.49\pm2.4\mu m$) was greater than other groups ($p<0.05$). The mean of wet muscle weight in propolis ($1.623\pm0.14g$) was greater than control ($1.18\pm0.2g$) groups. The mean of wet muscle weight in sham group ($1.78\pm0.16g$) was greater than both propolis and control groups. But the difference between sham and propolis group was not statistically significant ($p>0.05$).

Conclusion : These findings demonstrate that propolis can decrease skeletal muscles atrophy following nerve injury.

Keywords : Propolis; Muscle atrophy; Peripheral nerve; Rat

A methodological review of modeling and assessment of behavior in the rodent model of autism

Submission Author: Masoumeh Nozari

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Background and Aim : Autism Spectrum Disorders (ASDs) are common neurodevelopmental disorders with growing incidence (1 in every 59) and generally onset in the first three years of life [1]. Behavioral symptoms, including impaired social interaction and increased repetitive or stereotypic movements, are hallmark characteristics of autism. Animal models are a research tool to study the biology of the disease and to develop new therapeutic approaches. In this review, we focus on ASD behavioral phenotypes that can be modeled in rodents and the most common animal model currently in use in this field.

Methods : Pubmed databases were used to search for original and review articles on animal studies on autism

Results : Following the presentation, a panel will be convened to explore the opportunities and challenges of using model systems to investigate genetic and environment interactions in autism spectrum disorders (Title of Panel: Overview of the valproic acid model of autism spectrum disorders and future Directions for Research in Autism Spectrum Disorders).

Conclusion : Further studies are needed to create animal models with mutations that match the molecular and neural bases of autism.

Keywords : Autism; Rodent; Valproic acid;Animal models

Count: 381
Abstract ID: 189
subject: Social Neuroscience: Other
Presentation Type: Poster

The effect of instability stress and exogenous oxytocin on the number of the natural killer cells in peripheral blood and spleen in male rats

Submission Author: Zahra Omidi

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Background and Aim : Natural killer cells are innate immune lymphocytes that they play a major role in defense against tumors and viral infections. Many factors such as social stress act on the immune system. This type of stress is an important factor in the etiology of psychopathological disorders, including depression and anxiety. Oxytocin is a 9-amino acid hormones synthesize in the central nervous system and some of the peripheral tissue and plays a main role in response to stress, and its injection reduces depression and stress-induced anxiety. The aim of this study was the evaluation of instability stress effect and oxytocin on the number of NK cells in rats exposed to this stress.

Methods : WISTAR rats were subjected to instability stress for 21 days, hence their cage-mate were changed every three days. From the 11th day, a group of rats received 20 microliter and the other group received 40 microliter 1 mg/ml oxytocin and the control group received normal saline by intranasal rout. At the end of study, the animals were anesthesia and then were killed. Blood sample and spleen tissue were obtained and the number of NK cells was counted by flow cytometry by CD3-CD161 + markers

Results : The number of NK cells in the peripheral blood in instability stress groups and treated with 20 and 40 microliter oxytocin was (3/6±1/8,4/4±0/9) compared to control group which was(4/5±2/1) there was no significant difference but in instability stress groups and treated with 20 and 40 microliter oxytocin in spleen was (4/4±1/6,4/7±1/1) compared to control group which was(2/2±0/6) there was significant .(Pvalue=0/025,Pvalue=0/008)

Conclusion : Instability stress companed with treated with20 and 40 microliter oxytocin increases The number of NK cells in the rats spleen which indicates this synergic effect puts immune system in a ready state against infection and canser .

Keywords : Instability stress Natural killer cells Oxytocin rat

The role of gender in perception of pain intensity in people with chronic pain

Submission Author: Marzieh Pahlevan

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Background and Aim : Pain intensity perception in people with chronic pain is influenced by various factors. One of the factors is assumed to be gender. The purpose of this study was to investigate the role of gender in perception of pain intensity in people with chronic pain.

Methods : The research method was comparative; and the statistical population consisted of patients aged 21-60 years with chronic pain referred to Mahan pain clinic and Arman comprehensive physical medicine and rehabilitation clinic in Tehran. 391 patients with a history of at least 3 months of chronic musculoskeletal pain were selected purposefully and responded to the Numeric Rating Scale (NRS).

Results : The results of independent t-test for comparing pain intensity in two groups of men and women with 99% confidence showed that the perceived pain intensity in women with chronic pain was higher than men (p <0.001).

Conclusion : Based on the findings of this study, it can be concluded that women perceive the intensity of pain more strongly than men. This may be due to various cognitive and social factors.

Keywords : Perception, Pain intensity, Chronic pain, Gender

Count: 383
Abstract ID: 426
subject: Computational Neuroscience: Other
Presentation Type: Poster

FPGA Implementation an Empirical Architecture for Online Real-Time Spike Sorting

Submission Author: Payam Pakravan

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Background and Aim : In two decade , several spike sorting architectures have been proposed; however, due to their computational complexity, they cannot be proper for implantable and real time devices. A desire real time spike sorting system should be implantable, unsupervised, online and expandable to multi of channels. To implement this device, we designed and adaptable spike sorting processor using both floating-point and fixed-point illustrate. We used software-based spike sorting system to provide neural processing methods and distinguish possibility of efficient Register Transfer Level (RTL) implementations in an FPGA. An offline processing before neural recording will be used to extract configuring parameters. The suggested architecture provides an efficient design with appropriate nomination for a multi-channel spike sorting system. This device instantiates many of the suggested spike sorting designs and time-sharing I/O buses. The latter works will be focused on the development of a multi-channel spike sorting processor based on the adaptive processing methodology implemented in an advanced digital ASIC technology.

Methods : The architecture of the adaptive and unsupervised spike processor using the embedded parameter. The amplified, band-pass filtered and quantized neural data is sent to the system. The spike detection power used is importantly decreased by covering the valueless data and preventing the asynchronous commencement of the detection mechanism. In the detection mechanism, the threshold parameter is conditional activation function of a window nonlinear energy operator (WNEO) and using moving standard deviation (MSTD) for detection together. The clustering algorithm, moving average and moving standard deviation are used for separation of centers, where well suited for real-time neuron mapping.

Results : In order to confirm the spike detection efficiency used in this paper is summarized as follows:1) probability of detection, $PD = TD/TN$ where TD is the number of truly detected and TN is the total number of spikes;2) probability of false alarm, $PFA = FD/TD$ while FD is the number of false detection and TD are the true positives. Also, various testing methodologies are used to evaluate the chip efficiency under different states consisting confirmation of its desirable adaptation providing high clustering accuracy. The static test peruses the processor performance various spike shapes and different SNR with a specific ground principle. A throughout median clustering accuracy of 78.4% is attained. A dynamic test to evaluate the Compatibility of the processor was applied. Averaging the results efficiency an 78.4% median clustering accuracy for second model compared to 71.2% for first case.

Conclusion : This article introduced an efficient architecture for spike sorting using an accumulative moving standard deviation and moving average over 64 samples. also proposed method, the dependency of offline processing is reduced. An efficient design creates it an appropriate nomination for a multi-channel spike sorting system by instantiating many of the suggested spike sorting designs and time-sharing I/O buses. The latter works will be focused on the development of a multi-channel spike sorting processor based on the adaptive processing methodology implemented in an advanced digital ASIC technology.

Keywords : Adaptive decomposition; hardware architectures; moving average; moving standard deviation; spike sorting.

Count: 384
Abstract ID: 543
subject: Emotion, Motivation
and Behavior: Motivation and Emotion
Presentation Type: Poster

The effectiveness of group play therapy on quality of life in elderly people with Alzheimer's disease

Submission Author: Leila Pakrouh

Leila Pakrouh [1]

1. MA in clinical psychology

Background and Aim : Alzheimer's disease is one of the most common causes of mental function loss, commonly known as dementia. The purpose of this study was to determine the effectiveness of group play therapy on quality of life in elderly people with Alzheimer's disease.

Methods : The research design was quasi-experimental with pretest-posttest with experimental and control group. The population consisted of elderly patients with Alzheimer's has been at the center of Tabriz in 2018. Thirty people were selected by convenience sampling and divided into two experimental and control groups.The instruments used in this study were WHO Summary Quality of Life Questionnaire. Subjects in the experimental group performed brain games in group, three sessions per week for one month. The control group did not receive any intervention.

Results : The mean score of quality of life in the elderly with Alzheimer's disease increased after the pre-test compared to the pre-test.

Conclusion : The results showed that group play therapy had an impact on the quality of life of the elderly with Alzheimer's disease.

Keywords : Group therapy, quality of life, elderly people with Alzheimer's disease.

Count: 385
Abstract ID: 593
subject: Neural Injuries and Neurodegenerative Disorders: Demyelinating Disorders
Presentation Type: Poster

Therapeutic Effects of Nano-Phytosome of Quercetin on Inflammatory Responses in a Chronic Mouse Model of Multiple Sclerosis

Submission Author: Tarahomi Parnia

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Background and Aim : Patients with multiple sclerosis (MS) have higher levels of inflammation and anti-inflammatory agents can be used for treatment of MS. The natural agents are safe but have limitations and need a novel formulation. This study was conducted to evaluate therapeutic effects of nano-phytosome of Quercetin on inflammatory responses in a chronic mouse model of MS.

Methods : Phytosomes were fabricated through thin layer hydration procedure and their particle size, and encapsulation efficiency (EE) were assessed. A total number of 60 mice were divided into 5 groups, including Control, 150 Q, 300 Q, 150 NQ and 300 NQ that were treated with PBS, 150 mg/kg Quercetin, 300 mg/kg Quercetin, 150 mg/kg nano-phytosome and 300 mg/kg nano-phytosome of Quercetin. At the end of the trial, the serum concentrations of granulocyte-macrophage colony stimulating factor (GM-CSF), interleukin-1β (IL-1β), interleukin-2 (IL-2), interleukin-6 (IL-6), interleukin-10 (IL-10), interleukin-17 (IL-17), interferon gamma (IFN-γ) and tumor necrosis factor-alpha (TNF-α) were assessed.

Results : The results showed that oral administration of Quercetin and nano-phytsome of Quercetin significantly decreased the serum concentrations of GM-CSF, IL-1?, IL-2, IL-6, IL-17, IFN-? and TNF-? and increased the levels of IL-10 compared to the control group (P<0.05), but animals treated with nano-phytsome of Quercetin significantly decreased GM-CSF, IL-1?, IL-2, IL-6, IL-17, IFN-? and TNF-? and increased the levels of IL-10 compared to Quercetin group (P<0.05).

Conclusion : The use of nano-phytosome of Quercetin could efficiently improves inflammation. We recommend the use of nano-phytosome of Quercetin for alleviating inflammation in patients with MS.

Keywords : Interleukin-1β; Mice; Multiple sclerosis; Pro-inflammatory cytokines; Quercetin

Count: 386
Abstract ID: 306
subject: Emotion, Motivation and Behavior: Stress and the Brain (Stress-modulated Pathways, Stress and Cognition, Stress Related Disorders)
Presentation Type: Oral

Left DLPFC Delta-Beta Cross-Frequency Coupling in Maladaptive and Adaptive Perfectionist: An Index of Stress Regulation?

Submission Author: Fahimeh Parsaei

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Background and Aim : Cross-frequency coupling (CFC) as a candidate neural mechanism of effective control between different neural oscillations coordinates complex cortical computations, such as information transfer and encoding. It seems that frontal delta-beta CFC reflects cross-talk between sub-cortical (delta) and cortical (beta) brain regions which correlate with attentional control (reduced trait anxiety) and predicts stress regulation efficiency. However, prior studies suggested that frontal delta-beta CFC is higher in an adaptive stress regulation mechanism (higher CFC in low social anxiety people). Perfectionism has been linked to affective and cognitive processes and mental health outcomes. Maladaptive perfectionism has a close relationship with some negative outcomes and mental vulnerabilities, such as suicidal behaviors, obsessive-compulsive disorder, stress, anxiety and depression. High or low stress is one of the major factors in distinguishing both maladaptive and adaptive groups of perfectionists. As we know left dorsolateral prefrontal cortex (dlPFC), one of the most stress-sensitive brain areas, is linked to perfectionism behavior.
Methods : To offer a better understanding of CFC in stress regulation, in this study the 64-channel scalp electroencephalogram (EEG) from thirty participants (15 maladaptive perfectionism, 15 adaptive perfectionism) was recorded. Then, left DLPFC (F3 electrode) delta-beta phase-amplitude coupling (PAC) in maladaptive and adaptive perfectionists was estimated during the resting state.
Results : Our results showed that significantly higher delta-beta PAC in adaptive than maladaptive perfectionist participants in the F3 location corresponds to left DLPFC. For comparisons of PAC indexes (MI value) between two groups in experimental data, the two independent samples t- test was used and there was a significant different between two groups in frontal delta-beta phase amplitude coupling with p value=0.003.
Conclusion : This result is in line with studies which indicate increasing brain activity by rTMS over the left DLPFC can help attenuating physiological stress reactions. Together, these findings are interpreted to suggest that delta-beta PAC is a plausible neurobiological index of adaptive stress regulation and can distinguish between trait maladaptive and adaptive groups of perfectionists during stress conditions.
Keywords : maladaptive perfectionism; adaptive perfectionism; delta beta phase amplitude coupling; stress regulation

Count: 387
Abstract ID: 603
subject: Cognition: Working Memory
Presentation Type: Oral

Top-down Memory Signal from Frontal Cortex Modulates Activities within Extrastriate Cortex

Submission Author: Mohsen Parto Dezfouli

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Background and Aim : We have recently shown that in the absence of firing rate changes, a spatially specific working memory (WM) signal drives subthreshold modulations in visual areas. This subthreshold input results in enhanced visual processing. Furthermore, we have revealed that neurons in extrastriate visual areas receive a strong top-down signal from frontal eye field (FEF) during the maintenance of spatial information. Here, we sought to study the role of FEF in the enhancement of visual information within the extrastriate cortex during WM.

Methods : We pharmacologically inactivated FEF and simultaneously recorded the spiking activity and local field potentials from multiple sites within the V4 cortex during a modified version of the memory-guided saccade task. In this task, a set of grating bars, with different contrasts and orientations, were presented as a background on the screen throughout the task. The FEF inactivation was done by injecting a small amount of muscimol in an overlapping area between FEF motor field and v4 receptive filed (RF).

Results : The FEF inactivation diminished the behavioral performance as well as increased the saccade errors and reaction times of monkeys in the location corresponding to the injected area. Neural processing, based on the area under ROC, had shown no memory-related change in the firing rate while the LFP signals indicated spatial modulation (inside vs. outside the RF) during WM

Conclusion : Together, these findings indicate that the WM induced enhancement of the visual representation by recruitment of alpha-beta oscillation is controlled from FEF. These results provide a mechanistic understanding of how a spatially specific WM signal from prefrontal cortex is capable of changing visual information within extrastriate cortex to enhance the visual discrimination performance.

Keywords : Frontal Eye Field; muscimol inactivation; top-down process; V4 area; working memory.

Count: 388
Abstract ID: 373
subject: Neuropsychiatry and Psychology: Other
Presentation Type: Oral

Pharmacological effects of agmatine on the reference and working memory functions in adult rats prenatally exposed to valproic acid

Submission Author: Mahdieh Parvan

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Background and Aim : Evidence indicates that NMDA receptor agonists improve memory performance in adult rats prenatally exposed to valproic acid. In previous studies, the effect of them on the memory has been assessed in procedures that may also be influenced by motivational or motor factors, both of which occur with NMDA antagonists. Therefore, usage of the procedures that differ in motivation and vulnerability to effects of non-spatial factors, with a common reliance on memory, is required. There are no current reports on the autism model of rats tested in the radial-arm maze (RAM) and also NMDA antagonists' effects on variables of it.

Methods : The autism was modeled in rats by subcutaneous (SC) administration of valproic acid (600mg/kg) to pregnant rats at the gestational day 12.5. Autism-associated behaviors in male offsprings were tested in an open field test (OFT) and three-chambered test (TCT) on postnatal day 50, and the animals were trained in an eight-arm radial maze task until the rats attained the criteria of 80 % correct choice in the five consecutive trials. Twenty-four hours after criteria meeting, agmatine (40 mg/kg, SC) was injected 30 min before the behavioral tests including OFT, TCT, and memory phase of the RAM.

Results : We reported that agmatine rescued social deficits, anxiety-related behavior in VPA-treated rats. Prenatally VPA treatment did not influence the number of days to achieve the trained criteria and reference memory error (RME); however, by the mid of training, VPA-treated rats made significantly more WME. There was no significant difference for RME, WME, and total error between the groups after agmatine injection ($p > 0.05$).

Conclusion : Our results showed that VPA and control rats showed the same manner in the RAM task, and acute injection of agmatine rescued social and anxiety-like behavior without the effect on RAM.

Keywords : Autism; Valproic acid; Agmatine; NMDA antagonist; Radial- arm maze

Count: 389
Abstract ID: 161
subject: Integrative system: Neurogenetics
Presentation Type: Poster

Sensorineural Hearing Loss: Study of GJB2 and GJB6 Genes Mutations in 275 Unrelated Patients from Semnan Province

Submission Author: Farshid Parvini

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Background and Aim : Mutations in the DFNB1 locus, including GJB2 and GJB6 genes, are the most common cause of autosomal recessive non-syndromic sensori-neural hearing loss worldwide. The spectrum and frequency of such mutations are population based. The aim of this study was to investigate the spectrum and prevalence of GJB2 mutations as well as screening of two common large deletions del(D13S1830) and del(D13S1854) of GJB6 gene in 275 unrelated consanguineous families from Semnan (Northeastern Iran).

Methods : Pure tone audiometry at 250–8000 Hz was performed for patients and all had severe to profound hearing impairment. All DNA samples were screened for c.35delG mutation by allele specific polymerase chain reaction (AS-PCR) assay. Then, all patients who were negative or heterozygote for 35delG, were screened for large deletions del(GJB6- D13S1830) and del(GJB6-D13S1854) by multiplex PCR. Finally, the samples that remained unresolved after screening were further analyzed by direct sequencing of two exonic and flanking intronic regions of the GJB2 gene.

Results : The results revealed 21 allelic variants of the GJB2 gene, 19 of which were recessive pathogenic variants. GJB2 mutations were detected in 15.82% of the alleles, and c.35delG was the most frequent pathogenic allele (43.68%) followed by splice site mutation c.IVS1+1G>A (12.64%). Thirteen genotypes with biallelic recessive pathogenic variants in the GJB2 gene (as homozygous or compound heterozygous state) were found in 32 out of 275 moderate to profound deaf patients (11.64%). None of del(GJB6-D13S1830) and del(GJB6-D13S1854) mutations were detected in the population studied.

Conclusion : Our findings indicate that the c.35delG and c.IVS1+1G>A are the most frequent mutations of GJB2 gene in deaf population studied. However, low frequency of GJB2 mutations and lack of common GJB6 deleterious mutations clearly shows the involvement of other genes causing autosomal recessive non-syndromic sensori-neural hearing loss in Semnan population.

Keywords : Hearing loss, Sensorineural, GJB2, GJB6, Semnan population

Count: 390
Abstract ID: 477
subject: Development: Other
Presentation Type: Poster

The Relationship between Educational Procrastination and Cognitive Assessment of Parental Conflict and Anxiety in Children

Submission Author: Marjan Pashootan

Marjan Pashootan[1]

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Background and Aim : The purpose of this study was to determine the relationship between educational procrastination and cognitive assessment of parental conflict and anxiety in children.

Methods : The present study was small. The statistical population provided by fourth- and fifth-grade primary school students in Karaj in the academic year of 1396-1977 was multiple-sample cluster sampling was used to select 310 out-of-school students. Measurement tools included rowing test (2011), Cognitive Assessment of Parent Inventory, Cod & Step (1992), and Spence Anxiety Inventory (1998).

Results : : Data were analyzed by multiple regression using SPSS software. The proprietors made 23% of the total variance in mooring. The value of the mean indicates that the model of the positive measures for the mean profitability.

Conclusion : Findings showed that cognitive assessment of parental conflict and anxiety in children has a significant relationship with academic procrastination.

Keywords : Educational procrastination, Cognitive Assessment of Parental Conflict, Anxiety, Children

Count: 391
Abstract ID: 177
subject: Neuropsychiatry and Psychology: Mood Disorders
Presentation Type: Poster

Alpha wave scattering in the human brain and its effect on behavior

Submission Author: Sara Payamshad

Sara Payamshad[1], Dr peyman hassani abharian[2]

1. icss
2. Icss

Background and Aim : Alpha waves were discovered by German neurologist Hans Berger. The inventor of the EEG itself. Hans Berger was a German psychiatrist he is the best known as the inventor of electroencephalography (EEG) a method for recording brain waves. Using the EEG he was also the first to describe the different waves or rhythms which were present in the normal and abnormal brain, such as the alpha wave rhythm (8-12 HZ). Alpha wave are present at different stages of the wake- sleep cycle. The most widely research is during the relaxed mental state where the subject is at rest with eyes closed but is not tired or asleep. Alpha wave scattering difference in emotional indication and can find the trace of alpha in some disorder like MD and fibromyalgia.

Methods : current study adopted systemic review method to validate different roles of alpha wave in the brain. Three English databases (pub med, web of science, EBSCO) and one chines (CNK library) and google scholar for Iranian research were searched up to October 2019 for eligible literatures.

Results : Studies about alpha activity, exploring relaxing effects and creativity. Through results showed asymmetry alpha activity in left hemisphere and right hemisphere can make difference in emotional indication and extroverting or introverting, also shown connection between alpha activity and depression.

Conclusion : Alpha wave scattering in the brain could make different effect on our behavior. By EEG recording from frontal parietal and central lobes can find differential diagnosis. Alpha wave in occipital lobe and recording alpha peak from (Oz, O1, O2) can show us clients sharpness, also by using neurotherapy method on alpha wave we can reduce symptoms of disorder like depression.

Keywords : alpha – alpha peak – hemisphere- behavior

Count: 392
Abstract ID: 507
subject: Neuropsychiatry and Psychology: Cognitive Disorders
Presentation Type: Poster

The effectiveness of mindfulness-based stress reduction therapy on cortisol level and quality of life in a patient with posttransplant lymphoproliferative disorders, a single-case experimental study

Submission Author: Bijan Pirnia

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Background and Aim : Lymphoproliferative disease is a known disorder of organ transplantation, which its delayed diagnosis and delayed treatment leads to the death of patients. Increasing the quality of life and survival time of patients undergoing liver transplantation are among the concerns of the medical staff. The aim of this study was to investigate the effectiveness of mindfulness-based stress reduction therapy on quality of life.

Methods : In a single case experimental study, during June to December 2016, a 7-year-old boy with anxiety syndrome who had undergone liver transplantation one year before the present study was selected purposefully and in the form of ABCABC reversal design with multiple baselines was treated with mindfulness-based stress reduction for six weeks. Evaluation of two indices of cortisol and quality of life was carried out twice a week. Cortisol levels were collected through salvia test and analyzed using an enzyme-linked immunosorbent assay (ELISA). Data were analyzed by generalized estimation equation and repeated measures correlation.

Results : The primary outcomes showed that treatment of mindfulness was associated with a decrease in the level of salivary cortisol (p<0.01). Significant improvements were also observed in the quality of life index, although this index has a borderline significance (p= 0.048). In addition, secondary outcomes suggest an inverse relationship between the two indicators of cortisol and quality of life.

Conclusion : The results of this study, in line with the research background, indicate the effective role of psychological interventions in management of diseases caused by immune system weakness. Further studies in the form of controlled clinical trials can be a good route for future studies.

Keywords : Posttransplant Lymphoproliferative Disorders, Mindfulness-based stress reduction therapy, Cortisol, Quality of life

Count: 393

Abstract ID: 489

subject: Neuropsychiatry and Psychology: Aggression and Defensive Behavior

Presentation Type: Oral

The effectiveness of internet-delivered parent-child interaction therapy on psychological indicator and cortisol level in children of caregiver with cancer, a double-blind randomized controlled trial

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Background and Aim : High-potency Cannabis (HPC) is commonly used by patients with cancer to relieve pain. HPC consumption by parents can have an adverse effect on the physical, psychological and social aspects of children. This study was conducted aimed to investigate the effectiveness of internet-delivered parent-child interaction therapy (I-PCIT) on reduction of aggression and cortisol level in children of dependent HPC caregiver with cancer.

Methods : In a double-blind randomized controlled trial, from October 2015 to September 2016, Fifty caregivers (N=60) residing in Tehran, Iran with metastatic cancer consuming HPC and their children with aggression problem were selected using respondent-driven sampling (RDS) method and were randomly assigned into two experimental or control groups through block randomization. A package of computers equipped with a camera and microphone was provided for I-CPIT group. Changes in the level of aggression and cortisol during 10 weeks were analyzed by generalized estimation equation (GEE) through SPSS Statistics Version 20.

Results : The primary outcomes showed that twelve weeks of I-PCIT had a significant effect on the reduction of children's aggression and the level of salivary cortisol in children (p<0.05). However, the results were not stable until the follow-up stage (p=0.088). Secondary outcomes showed that there is a significant relationship between aggression index and cortisol level (p<0.05).

Conclusion : With the advancement of technology, it seems that the use of remote technologies can be an appropriate option to increase access to psychological treatment.

Keywords : internet-delivered parent-child interaction therapy (I-PCIT), aggression, behavioral disorders of children, cancer

Iran University of Medical Sciences

Iranian Neuroscience Society

Count: 394
Abstract ID: 650
subject: Emotion, Motivation and Behavior: Motivation and Emotion
Presentation Type: Poster

Effect of flaxseed oil supplementation on depression and serum level (BDNF α) in depressed women: a randomized, double blind clinical trial

Submission Author: Fariborz Porbafrani

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Background and Aim : Depression defined as a common mood disorder which can affect different aspects of a person's health such as eating, feeling, Perform daily activities and sleeping (1). According to the WHO report in 2003, depression was a third cause of disease all over the world and predicted that depression will be the first cause of disease by 2030(2). Various factors are involved in occurrence of depression, such as genetic, psychological or environmental agents. One of these environmental agents is nutritional factors (3). Various studies conducted on effectiveness of EPA and DHA on depression disorder. Effectiveness of EPA and DHA on depression was depended to dosage and proportion of them Meta-analysis study showed that greater dose of EPA is more effective in reducing depression symptom that DHA(4). In 2009, Blondeau et al. Showed that injection of alpha-linolenic derivatives in mice induced neurogenesis in hippocampus, increased BDNF expression in vivo and in vitro, as well as increased neuronal cell synaptogenesis (Nsc) as well as increased cell and cell proliferation(5). Also according to animal studies conducted in 2017, flaxseed oil as a source of ALA can be effective in reducing postpartum depression symptoms of Egyptian rats(6). According to the increasing trend of depressive disorder worldwide, finding a nutritional agent that improve depression symptoms can be very effective. According to our knowledge, no study assesses the effect of flaxseed oil supplementation as a major source of ALA on depressive symptom.So this study designed to investigative a possible beneficial effect of flaxseed oil supplementation among depressed subjects

Methods : sixty depressed women aged 18-45 years were randomly divided in two group. One of them were asked to consume soft gel of flaxseed oil, 1000 mg, 2 times per day for 10 weeks and the other one consumed placebo. Serum concentration of BDNF and BECK-II questionnaire were measured before and after intervention.

Results : Result of this study showed that BDNF serum concentration of subjects who were in flaxseed oil group increased significantly after 10-week intervention compared with placebo group (adjusted mean± standard deviation of BDNF concentration: 1.12±0.6 pg/ml, 0.2±0.56 pg/ml respectively; p<0.05). also beck score was significantly lower after flaxseed oil consumption compared with placebo (-16.62±7.03, -8.45±7.8; p<0.05).

Conclusion : flaxseed oil consumption may have a beneficial effect on BDNF concentration and beckII score in depressed women. Further study with more participants and longer follow up period are merited.

Keywords : flaxseed oil, depression, BDNF serum

Count: 395
Abstract ID: 411
subject: Cognition: Other
Presentation Type: Poster

Temporal Heterogeneity in the Perception of Time

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Background and Aim : A great deal of research has been conducted to reveal the underlying mechanism of time perception in humans, yet the main question remains still in debate. In an attempt to approach this question, a time production task was designed to investigate the possible dependency of time perception measured by participant response time (i.e. perceived time) of the length of the target time.

Methods : Task consisted of 10 blocks of 10 target times from 550 to 1000 milliseconds spaced 50 milliseconds. In each block, the participant was asked to press the button after she felt a time interval equal to the block target time. The participant response time was shown to her as a feedback. The experiment was conducted with 17 participants, each participating in two sessions of the task with a gap of three days. Performance of participants through different blocks of the task was evaluated regarding two different aspects of temporal perception, namely accuracy of time perception and learning ability.

Results : The observations revealed heterogeneity in the time perception demonstrating that human temporal perception, both time perception accuracy, and learning ability, rhythmically depends on the length of target times. The pattern of subjects' response profiles were significantly consistent across both sessions.

Conclusion : . The consistent pattern of dependency on time perception suggests a new oscillatory model of time processing in the human brain. Either time-clock theory or population processing can be explained by our observations. Therefore, these observations shed light on our understanding of the underlying mechanism of time perception.

Keywords : human time perception; temporal heterogeneity; accuracy ; learning ability

Count: 396
Abstract ID: 518
subject: Neuropsychiatry and Psychology: Anxiety Disorders and PTSD
Presentation Type: Poster

The effectiveness of compassionate Mind Training (CMT) on social anxiety symptoms, & cognitive emotion regulation among female students with social anxiety disorder of Shahid Chamran University of Ahv

Submission Author: Atiye Poursaleh

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3. Assistant Professor, Department of Psychology, Faculty of Education and Psychology, Shahid Chamran University of Ahvaz, Ahvaz, Iran

Background and Aim : The purpose of this study was to determine the effectiveness of compassionate mind training on symptoms of social anxiety disorder and emotion regulation strategies in female students with social anxiety disorder in Shahid Chamran University of Ahvaz. Social anxiety disorder is one of the common, chronic and disabling anxiety disorders which is one of the important causes of social and academic performance decline in students. Several environmental-psychological components have been proposed to explain this disorder. One of these variables is cognitive emotion regulation strategies. Emotion regulation can be defined as the process of initiating, maintaining, modifying, intensity, or continuity of the inner feeling and emotion associated with social, psychological, and physical processes in accomplishing one's goals (Gross, 2007). As research expands, a new structure called self-compassion has been introduced by Neff in psychology. Findings indicate that individuals with social anxiety report lower levels of self-compassion and self-compassion is negatively correlated with the severity of social anxiety symptoms (Warner, Jazaieri, Goldin, Ziv, Heimberg, & Gross, 2012). Gilbert(2005) attempted to use this construct in therapy sessions and eventually put forward the theory of "compassionate mind training". Compassionate mind training is the core of compassion focused therapy. Compassionate Mind Training aims to help clients learn the key skills needed to develop key aspects and characteristics of compassion. So Given the importance of self-compassion and the lack of research literature in this field within the country, special attention should be paid to studies, especially treatment. Also, most importantly, given the high prevalence and the devastating consequences of social anxiety, the researcher considers it necessary to conduct research in this sample group and has selected this group as the sample in the study.

Methods : In this study, a single-case multiple baseline trial design was used. The statistical population of the study consisted of 150 female volunteer students residing in Shahid Chamran University dormitory in Ahwaz University in the academic year 95-96 that answered the Conor Social Anxiety Questionnaire (2000) and among the volunteer students with the highest score. After a diagnostic interview session based on DSM-5 criteria, six volunteers with a diagnosis of social anxiety disorder and entrance criteria were selected by available sampling. Subjects were trained one session per week for 8 weeks. Subjects were assessed using the Connor, Davidson, Churchill, Sherwood, Foa, & Weisler (2000) social anxiety scale and Garnefsky, Kraaij, & Spinhoven (2001) Cognitive Emotion Regulation Scale

Results : The results showed that compassionate mind training (CMT) on reducing symptoms of social anxiety disorder (0.35 percent overall recovery) and nonadaptive emotion regulation strategies (0.34 percent overall recovery) and increased adaptive strategies for emotional adjustment (0.58 percent overall recovery). It is significantly effective in people with social anxiety disorder. The study of changes in the follow-up period based on the mean scores of the subjects indicates the relative stability of these effects

Conclusion : Data analysis showed that compassionate mind training reduces symptoms of social anxiety disorder and nonadaptive emotion regulation strategies and increases adaptive strategies of emotion regulation in individualswith social anxiety disorder

Keywords : cognitive emotion regulation, compassionate mind training, self-compassion, social anxiety

Count: 397
Abstract ID: 639
subject: Neuropsychiatry and Psychology: Disorders of Neurobehavior
Presentation Type: Poster

The Effectiveness of Mind-Based Cognitive Therapy on the Psychological Hardiness of People with Physical-Motor Injuries

Submission Author: Talebali Poursharieh

Talebali Poursharieh[1]

1. PhD candidate in clinical psychology

Background and Aim : The purpose of this study was to investigate the effectiveness of mind-based cognitive therapy on the psychological hardiness of physically-impaired individuals with normal cognitive and mental functioning who enjoy the benefits of natural intelligence.

Methods : The method used in this study is semi-experimental. The statistical population was people with physical and motor injuries in Imam Javad Exceptional School in Sari. For this purpose, 15 individuals in the experimental group and 15 in the control group were selected and sampled by purposeful sampling. The instrument used in this study was Ahwaz hardiness questionnaire. After scoring the questionnaire and extracting the data, the data were analyzed using covariance statistical test.

Results : The results showed that the mean score of psychological hardiness in subjects with physical and motor impairments decreased in the post-test compared to the pre-test.

Conclusion : As a result, mind-based cognitive therapy has had an impact on the psychological hardiness of people with physical-motor impairments.

Keywords : Mind-Based Cognitive Therapy, Psychological Hardiness, People with Physical-Motor Injuries

8th Basic and Clinical Neuroscience Congress
December 18-20, 2019   Razi Hall, Tehran, Iran

Count: 398
Abstract ID: 231
subject: Integrative system: Neurogenetics
Presentation Type: Poster

A novel frameshift insertion in the SH3TC2 gene causing charcot marie tooth type CMT4C

Submission Author: Pegah Pouya

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Background and Aim : Charcot-Marie-Tooth (CMT) disease is the most common hereditary peripheral neuropathy. CMT affected patients manifest symmetric, slowly progressive distal motor neuropathy of the arms and legs usually beginning in the first to third decade and resulting in weakness and atrophy of the muscles in the feet and/or hands. The affected individual typically has distal muscle weakness and atrophy, weak ankle dorsiflexion, depressed tendon reflexes, and pes cavus foot deformity. CMT is a heterogeneous group of hereditary polyneuropathies. To date, more than 80 different genes are associated with CMT. CMT disease is classified into nine genetic subtypes (CMT1, CMT2, CMT3, CMT4, CMT5, CMT6, CMTDI, CMTRI and CMTX).

Methods : Molecular genetic testing approaches can include gene-targeted testing (single-gene testing and multi-genes panel) and comprehensive genomic testing (whole exome sequencing, exome array). In this study, Next Generation Illumina Sequencing was used to enrich all exons of more than 22000 genes as well as some other important genomic regions in proband. Subsequently, Sanger sequencing was used for confirmation of mutation found.

Results : The results showed a novel homozygous frame-shift insertion mutation 3472dupG:p.V1158fs in the SH3TC2 gene of proband. In addition, her parents were heterozygote for this mutation. Carrier detection of other family members was performed, as well

Conclusion : In general, this study uncovered one rare novel frame-shift insertion mutation in SH3TC2 gene in the family studied and such studies may help to conduct genetic counseling and prenatal diagnosis for individuals at the high risk of CMT.

Keywords : Charcot Marie Tooth (CMT), SH3TC2, frame-shift insertion mutation, genetic counseling.

Count: 399
Abstract ID: 31
subject: Motor Systems
and Movement Disorders: Movement Disorders (Parkinson, Huntington's, ALS, Ataxia, edication-induced Movement Disorders)
Presentation Type: Poster

Effects of Intrahippocampal Injection of Montelukast on Rotarod Performance in Wistar Male Rats

Submission Author: Sima Rabie Nezhad Ganji

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Background and Aim : Studies have shown that Montelukast may affect on movement disorder. The aim of this study was to investigate the effects of injection of Montelukast into hippocampus on motor coordination in male rats.

Methods : In this laboratory-experimental study,15 male rats were obtained from Neuroscience Research Center- Shahid Beheshti University of Medical Sciences, Tehran, Iran. Animals were divided to control, sham and Montelukast (1µL) receiving groups. Motor coordination was evaluated using Rotarod. The data were statistically analyzed between groups using ANOVA.

Results : Motor performance did not significantly alter in Montelukast receiving animals compared with control group.

Conclusion : Despite certain reports, the findings of this study showed that Montelukast had not significant positive or negative impact on the motor coordination in the male rats.

Keywords : Montelukast, Memory, Motor coordination, Male rat

Count: 400
Abstract ID: 466
subject: Pain and Sensory Systems: Vision
Presentation Type: Poster

Representation of Spatial Frequencies in Neural Populations of Human Temporal Cortex

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Background and Aim : Multiple brain areas in temporal lobe, associated with human vision, represent the visual stimuli and regulate object recognition. Moreover, EEG and fMRI studies suggest that brain visual representation of low versus high spatial frequency is significantly noticeable. Recently, SEEGs (stereo-electro-encephalography electrodes), a technique used for invasive recording of brain activity via three dimensional recordings, have been standing out for its clinical applications in seizure surgeries. The data obtained by SEEGS allow neurosurgeons to locate the spatiotemporal dynamics of epileptic seizures during long term monitoring (LTM) of patients. Moreover, the high quality of recoding in SEEGs data gives the opportunity to combine LTM with controlled stimulus presentation and investigate the neural representation of objects in human brain. Although, massive body of non-invasive imaging studies have been addressed the neural representation of objects in human brain, the neural representation of spatial filtered objects in human brain using intra-cortical recording is poorly understood.

Methods : During LTM, a pharmacologically intractable epileptic patient with implanted SEEGs participated in a face and non-face detection visual task. Electrodes were implanted in the right hippocampus, right and left supplementary motor area, right pre-supplementary motor area, and right anterior cingulate gyrus to evaluate an anatomo-electro-clinical correlate in the generation and propagation of seizures. The stimulus set is comprised of 155 grayscale images including 73 animates (face and non-face) and 82 inanimates at different level of frequencies to probe the selectivity of neural population across the five areas of the brain implanted by electrodes.

Results : Our results support the existence of distinct neural representation of different spatial frequencies for face and non-face stimuli within temporal lobe of human brain. Furthermore, the interaction of category representation and spatial frequencies suggests a major role of spatial dynamics in face and object processing across ventral visual stream at human brain.

Conclusion : Our findings provide insight into the fine-grained functional architecture within the human brain pertaining to spatial dynamics in face and object processing.

Keywords : Spatial Frequency Representataion; Stereoelectroencephalography; Human Visual Ventral Pathway; Supplementary Motor Area; Cingulate Gyrus; Hippocampus

Count: 401
Abstract ID: 258
subject: Neural Injuries and Neurodegenerative Disorders: Neurotoxicity, Neuroprotection, Inflammation
Presentation Type: Poster

the effects of progesterone and 4-methylcatechol on sciatic nerve structure and function in rats with diabetic neuropathy

Submission Author: Zeinab Rafiee

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Background and Aim : diabetic neuropathy is one of the most common complications affecting more than 50-60% of diabetic patients and it is a common cause of non-treatment amputation and autonomic failure the aim of this study was desighed to investigate the possible beneficial effects of progestron (p) and 4-methylcatechol(4mc) on histopathological changes of sciatic nerves in streptozotocin-induced diabetic rats

Methods : the adult male rats(spargue-dawley) were randomly divided into one of five groups: co(control nondiabetic), dm(untreated diabetic), dmp(diabetic treated with p), dmp4mc(diabetic treated with 4mc) and dmp4mc(diabetic treated with p+4mc), each group contain15 animals. diabetes was induced in animals by a single dose injection of streptozotocin (stz, 55 mg, i.p). four weeks after the stz neuropathy had been stablished, rats in dmp group were treated with p(8 mg/kg,i.p), in dm4mc group with 4mc(10 mg/kg, i.p.). and in dmp4mc group with p+ 4mc every two days for 6 week

Results : diabetic rat showed a significant reduction in mean myelinated and unmyelinated fibers diameter,axon diameter and myelin sheath thickness in the sciatic nerve after 6 weeks. in sciatic nerve of the untreted diabetic group was observed endoneurial edema and were also increased numbers of myelinated fibers with infolding into the axoplasm , irregularity of fibers, myelin sheath with unclear boundaries and alternation in myelin compaction . in diabetic treatment with 4mc prevented all these abnormalitties in treated diabetic rats.an increased of pmp22 expresion expression and ngf level in sciatic nerve also was seen in the administration of prog and 4mc

Conclusion : our finding suggest that 4mc as a tharapetic approach can protect , histomorphological and ultrastructural changes and increased ngf and pmp22 level in sciatic nerve after the establishment of peripheral diabetic neuropathy

Keywords : progestrone;4-methylcatechol;sciatic nerve

A Case Study of Agrammatic Dissociations in Speaking and Reading

Submission Author: Amirabbas Rafiee Fazel

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Background and Aim : This paper reports agrammatic dissociations in speaking and reading in a Persian-speaking patient (A.G.) who became aphasic as a result of ischemic CVA. His clinical linguistic profile was assessed 15 months post-onset to determine the severity of impairments in different spoken and written skills. His MRI scans during acute and subacute stages indicated evidence of extensive cerebral edema predominantly in the left temporoparietal language areas and in the Anterior Cingulate Cortex (ACC) of the left cerebral hemisphere.

Methods : We initially evaluated A.G.'s clinical linguistic profile by administering the bedside version of Persian Western Aphasia Battery (P-WAB-1) which indicated an Aphasia Quotient (AQ) index of 86. His written skills were examined using the reading subtests of Persian Diagnostic Aphasia Battery (P-DAB-3) which indicated a Language Quotient (LQ) index of 60. We also employed subtests of the Bilingual Aphasia Test (BAT, Persian version) to evaluate his word reading, sentence reading, and sentence repetition.

Results : His overall clinical linguistic picture based on the initial assessment results during the chronic stage indicated mild aphasia severity with good auditory comprehension, good repetition, good confrontation naming, but nonfluent speech which conform to syndrome of transcortical motor aphasia. Notably, the present case exhibited three striking characteristics in the performance of different language modalities. First, the data showed a modality-specific dissociation between speaking and reading modalities with relatively spared auditory comprehension but severely impaired reading comprehension. Second, we observed a set of task-specific agrammatic symptoms mainly in out-loud sentence reading but well-preserved sentence repetition. Third, we noted certain universal and language-specific agrammatic impairments mainly in his reading performance that were in accord with the structural properties of Persian.

Conclusion : Overall, the present clinical linguistic data as they relate to the lesion sites argue against the classical narrow localization models of brain and language. The dissociation between impairments of different language skills and levels is an indication that disorders in linguistic levels are not monolithic. Instead, the data lend support to "non-unitary" models of aphasia as a symptom complex phenomenon.

Keywords : agrammatic dissociations; language-specific impairment; modality-specific deficits; Persian

Count: 403
Abstract ID: 384
subject: Pain and Sensory Systems: Sensory and Sensory Integration Disorders
Presentation Type: Oral

the pain alleviating effect of Sertoli cell transplantation in a compression model of spinal cord injury

Submission Author: Behnaz Rahimi

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4. Physiology Research Center and Department of Physiology, Faculty of Medicine, Iran University of Medical Sciences, Tehran, Iran.

Background and Aim : Spinal cord injury (SCI) is a serious public health issue and one of the most important causes of mortality and disability in the individual. There is not a standard strategy for the treatment of SCI. The inefficiency and adverse effects of existence therapy indicate that novel therapeutic strategies are required. In recent years, regenerative medicine has opened a promising window towards effective treatments for SCI. Cell therapy has been widely suggested as a treatment for neurodegenerative diseases that is the promising method for the treatment of SCI and can be used for alleviating the neuropathic pain induced by spinal cord injuries. Various sources can be used for cell therapy ranging from stem cells to neural supporting cells. Specific properties of Sertoli cells (SCs) make them suitable for improving neurological damage. This study is to evaluate the possible neuroprotective effects of SCs transplantation on the SCI model.

Methods : In this study, Rats were divided into five experimental groups including sham, control, SCI, vehicle and SCs-treated group. A compression model was used to induce SCI in a rat. A week after SCI, Cultured SCs, isolated from testis of rats, were transplanted into the spinal cord. Behavioral tests, including motor function recovery, mechanical allodynia, cold allodynia, and thermal hyperalgesia, were carried out every week for 5 weeks after SCI induction.

Results : The results showed that Sertoli cell transplantation led to improving functional recovery. Also, the pain threshold was significantly increased in animals received Scs transplantation. The Sertoli cell transplantation significantly ($p < 0.0001$) improves motor function. Also, the allodynia and hyperalgesia score of rats with spinal cord injury was significantly different ($p < 0.0001$) from the animal that transplanted Sertoli cells.

Conclusion : SCs improve functional recovery and reduce allodynia and hyperalgesia. It seems that the transplantation of SCs can reduce neuropathic pain following spinal cord injury.

Keywords : spinal cord injury, cell transplantation, neuropathic pain, Sertoli cell

Count: 404
Abstract ID: 532
subject: Emotion, Motivation
and Behavior: Stress and the Brain (Stress-modulated Pathways, Stress and Cognition, Stress Related Disorders)
Presentation Type: Poster

The Relationship between Resilience and Religious Attitude with Fear of Pregnant Women

Submission Author: Fatemeh Rahimi

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Background and Aim : Pregnancy is one of the periods that can cause high stress, anxiety and fear in women. The purpose of the present study was to investigate the relationship between resilience and religious attitude with fear of pregnant women.

Methods : This research was a descriptive-correlation study. The statistical population of the study includes all pregnant women referring to Urmia Motahari Medical Center in spring 2019. A sample of 130 pregnant women was selected based on the voluntary sampling method and completed the Conner et al Questionnaire of resiliency, religious attitude of Khodayari Fard and and Fear of Childbirth Scale (FOC). Data were analyzed by Pearson correlation coefficient and multiple regression using SPSS 19 software.

Results : The results showed that there was a negative and significant relationship between resilience and fear of childbirth (p <0.01) and religious attitude and fear of childbirth (p <0.01). Also, resilience and religious attitudes were able to predict %36 of the variance in fear of childbirth.

Conclusion : Based on the results, it can be said that resilience and religious attitude have a strong relationship with fear of childbirth; therefore, it can be possible to reduce the fear of childbirth by promoting resilience as well as promoting a positive religious attitude in Pregnant Women.

Keywords : Resilience, Religious Attitude, Fear of childbirth, Pregnant women

Count: 405
Abstract ID: 605
subject: Pain and Sensory Systems: Other
Presentation Type: Poster

Cerebellar transcranial direct current stimulation in pain relief: a review article

Submission Author: Fatemeh Rahimi

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2. PhD candidate in physiotherapy, Shahid Beheshti University of Medical Sciences, Tehran, Iran

Background and Aim : The cerebellum has been extensively studied for its potential roles in a wide number of integrative functions, ranging from working memory and associative learning to motor control. It is also involved in the sensory, cognitive and affective dimensions of pain. Nociceptive information is encoded in the cerebellum, it has been proposed that the cerebellum may integrate multiple effector systems including affective processing, pain modulation and sensorimotor control Cerebellar transcranial direct current stimulation (cerebellar tDCS) is increasingly used in neurophysiology laboratories, and its use begins in clinical research. So the aim of this study was to review the efficacy of Cerebellar transcranial direct current

Methods : Published studies until 2019 were searched on the Google Scholar, Medlib, PubMed, Science Direct and Scopus databases. These keywords were used: Pain cerebellum, cerebellar direct current stimulation, tDCS, and pain modulation. According to our key words and criteria 7 related articles were included to our review

Results : After anodal cerebellar stimulation the pain threshold was increased. Any significant pain modulation with cathodal or sham stimulation was not seen.

Conclusion : In summary the cerebellum engagement in pain processing modulates the activity of both somatosensory and cingulate cortices. Present findings prompt evaluation of the cerebellar direct current polarization as a possible novel and safe therapeutic tool in chronic pain patients. However, anodal stimulation was found to significantly increase the perception of pain, compared to sham and cathodal stimulation.

Keywords : Pain cerebellum, cerebellar direct current stimulation, tDCS, and pain modulation

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8th Basic and Clinical Neuroscience Congress
December 18-20, 2019
Razi Hall, Tehran, Iran

Iran University of Medical Sciences

Iranian Neuroscience Society

Count: 406
Abstract ID: 463
subject: Motor Systems
and Movement Disorders: Other
Presentation Type: Poster

The Effects of Injection of Oxybutynin and Steroid Hormones into Hippocampus on Learning and Motion Balance in Rats

Submission Author: Mostafa Rahimi Nasrabad

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Background and Aim : It has been found that various neurotransmitters, including histamine H1 and acetylcholine, play a role in learning and increasing or decreasing motion balance. Since neurotransmitters with a medium neuron and in the steroid environment, have a different physiological function. Thus, the purpose of this study is to investigate the effects of injection of oxybutynin -muscarinic antagonist- and steroid hormones into hippocampus and their interaction on learning and motion activity in the hippocampus.

Methods : In this experimental study, Twenty five adult male Wistar rats weighing 250-300g were randomly divided into the five following groups: Control, the groups received oxybutynin (3μl), oxybutynin plus Estradiol (2μl+1μl), oxybutynin plus progesterone(2μl+1μl), and oxybutynin plus Estradiol and Progesterone. Before surgery, the rats' motion balance was examined with the rotarod set. Rats in the control groups did not received any drug. Animals in the drug groups were anesthetized by intraperitoneal injection of ketamine hydrochloride plus xylazine. They were placed in the stereotaxic apparatus and two cannulas implanted in 0.2mm above hippocampus. After a week of recovery, the drugs were injected through the cannulas in final volume of (3μl). At the end of the injection, to check the learning and memory criteria, motion balance were assessed by rotarod test (1, 3 and 24 h after the injection). The data were analyzed using one-way (ANOVA) followed by tukey's post hoc test.

Results : The collected information from groups suggests that intra-hippocampus administration injection of oxybutynin significantly ($p<0.01$) reduced motion balance. Similarly, after 3h of the injection of oxybutynin plus estrogen, the result of rotarod test significantly ($p<0.01$) reduced similar to oxybutynin plus P4 and oxybutynin plus E2+P4 drug groups. On the contrary, 24h after the injection oxybutynin plus E2, the result of rotarod test in this group significantly improved motion balance than the other drug groups. The comparison of the rotarod test of each group -except the group mentioned- suggested that the motor balanced index in the control group has significantly reduced in (1, 3 and 24h) after injection .The rotarod test of drug groups with respect to the pre-injection drug, showed a significant decrease at the level ($p = 0.000$). However, 24h after the injection, in the oxybutynin plus estrogen medication group, a significant increase was observed relative to the Rota rod test before injection

Conclusion : it obviously seems that oxybutynin decrease the balance and motion activity. There is an interaction between oxybutynin and steroid hormones in the balance activity at the hippocampus.

Keywords : Oxybutynin;Steroid Hormones;Rat;Learning;Balance;Motion activity

Count: 407
Abstract ID: 71
subject: Cognition: Learning and Memory
Presentation Type: Poster

The effects of μ opioid receptors activation in mPFC and inactivation of Dopaminergic receptors in BLA during reference memory processing based on RAM test.

Submission Author: Maryam Rahimi Tesiye

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Background and Aim : Spatial memories, including reference and working memory, are aspects of cognitive processes that examine human and animal abilities . Reference memory information can be changed according to circumstances. The hippocampus, as one of the main centers of memory processing and learning , modulates this type of memory through bilateral communication with the Amygdala and Prefrontal cortex. The present study investigated the role of μ opioid receptors in the medial Prefrontal cortex after blocking dopamine receptors in the Basolateral Amygdala.

Methods : : Male Wistar rats were divided into twelve groups of six. After stereotaxic surgery and cannulation at the mPFC and BLA sites, mice underwent a 7-day recovery period. They then went on a 2hour daily diet according to the Watson and Packard protocol to reach 85% of their normal weight. Morphine as a μ opioid receptor agonist was injected to the mPFC at doses (0.5, 1 and 2 μl / rat) and Chlorpromazine as a dopamine antagonist at doses (0.5, 1 and 2 μl / rat) to the BLA on test day. Then the memory function of each rat was measured separately using an 8-arm radial maze.

Results : High dose injection of Morphine and Chlorpromazine, by reducing reference memory error improved it P?0 / 05. But no change in the amount of time spent on the reference memory arm was seen P> 0/05. Co-administration of the effective dose of Morphine (2 ?l / rat) and triple doses of Chlorpromazine did not indicate a synergistic effect on reference memory P> 0.05, but also the results of the 2-way ANOVA analysis showed that compared to the groups receiving the Chlorpromazine dose alone, the reference memory error in this group Increased P?0/05 which indicates damage to the reference memory.

Conclusion : Studies show that μ opioid and dopamine receptors are present in the same neurons in the brain cortex, suggesting close links between these two systems. Much of the rewarding effects of Morphine on memory behaviors are due to their effects on dopamine release. Chlorpromazine increases dopamine concentrations by inhibiting dopamine receptors. Previous studies have found high levels of dopamine prevent glutamate uptake. Thus, the excitability of neurons containing glutamate receptors in the Amygdala increases. Part of the effects of these two drugs appear to be through the activation of such pathways. Also Activation or inactivation of dopamine receptors in the BLA, alters the ratio of kinases to phosphatases, and vice versa, altering the activity of kinases and phosphatases, activates or deactivates different receptors. Given the above, it can be concluded that the effects of activation of μ opioid receptors or deactivation of dopamine receptors in the BLA on reference memory probably depend on at least a few factors. These effects are strongly dose dependent. The frequency of these receptors may influence their role in reference memory processing and Activation of them initiate completely different intracellular signaling pathways that can stimulate or inhibit neuronal activity.

Keywords : Reference memory, mPFC, BLA, morphine,chlorpromazine

Count: 408
Abstract ID: 309
subject: Development: Neurodevelopmental Disorder (ADHD, Autism, Learning Disorders)
Presentation Type: Poster

Identifying the Structures of Health Care Provision for Children with Autism: A scoping Review

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Background and Aim : Different centers and organizations are involved in providing care to children with autism spectrum disorder (ASD) in Iran. The service delivery system is currently unstructured and fragmented. There is no comprehensive structure that defines the relationships and duties of all organizations and stakeholders in the field of care provision for patients with ASD. The purpose of this study was to identify the structures of health care delivery to children with ASD in other countries through Scoping Review.

Methods : The Scoping Review framework developed was used for this study. The Medline, Scopus, SID and Magiran databases, Google Scholar Search engine were searched systematically, as well as manually search for selected journals and selected articles references, reports, government documents, guides, websites and other available information in the period 2000 to 2019. At least 1472 articles were screened step by step using PRISMA flowchart and finally 13 articles and 19 Guidelines related to the objectives were reviewed and synthesized. Data were categorized into data extraction tables in the form of models of care delivery, screening, methods and diagnostic tools, providers, interventions (ASD treatments).

Results : The data were summarized in the data extraction tables in the form of models of care, screening, methods and diagnostic tools, providers, interventions (autism treatments). Nine different care models for people with ASD were extracted from the literature. Five Guidelines out of 10 reviewed Guidelines not recommended universal screening of ASD. The extracted diagnostic methods included reviewing child medical information history, interviewing parents, comprehensive medical evaluation, direct observation, cognitive assessment, adaptive performance measurement, use of standard diagnostic tools, alternative diagnoses, and evaluation of sensory integration processes. Direct observation detection was one of the most important diagnostic methods. In addition, among the reviewed Guidelines, all (Case 10) had recommended Physical Therapy. Based on the findings, 7 Guidelines had recommended pharmacological intervention.

Conclusion : In designing a service delivery structure for children with ASD in the country, responsibilities of each organization as well as the coordinator and stewardship, care providers, screening and diagnosis process, and services, and rehabilitation and curative services and process, also Insurance coverage, social and economic support must be considered.

Keywords : Autism Spectrum Disorder ،Clinical Guidelines ، care delivery Model ، Structure ، scoping Review

Count: 409
Abstract ID: 61
subject: Cognition: Executive Function (Decision Making, Reasoning, Problem Solving)
Presentation Type: Oral

Comparison of attentional shifting skill in 6-8 years children with fluent speech and developmental stuttering

Submission Author: Atefeh Rahmati

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Background and Aim : Executive functions are complex cognitive structures that include activities such as inhibition, attentional shifting, planning and organizing the cognitive output process. These functions lead to conscious control of thought and action. Regarding the role of executive functions, each person before the onset or during the fluent speech requires identification, inhibition, and modification of speech interruptions (such as repetitions and prolongations that are the main symptoms of stuttering), and must be able to consistently regulate the speech process to adjust the verbal units fluently and sequentially. Therefore, any defect in the inhibition, transmission, and working memory of the developing children can make speech fluency difficult. For these reason, the purpose of this study was comparison of attentional shifting skill in 6-8 years children with fluent speech and developmental stuttering.

Methods : This research is a descriptive-analytic cross-sectional study. The participants included 31 children with developmental stuttering (6-8 years old) selected based on the convenient sampling method. Also, 31 normal children were selected from elementary schools in Tehran Province that matched in terms of age and gender with the first group. The children of two groups were selected from the same district (The fifth district) of Tehran Province. Wisconsin card sorting test was used to measure of attentional shifting. Data analysis was performed using SPSS (V. 16) and the Mann-Whitney U test was used to compare two groups.

Results : The result of this study showed significant difference between two groups in index of attentional shifting (P<0/05). According to the Shapiro-Wilk Test, the data distribution was not normal. Therefore, the parametric test of the Mann-Whitney U test was used.

Conclusion : The finding of this study showed that children who stutter had less efficiency in attentional shifting skill compared to normal children, and this problem may be due to exacerbation or persistence of stuttering.

Keywords : Executive functions; attentional shifting; Developmental stuttering; Wisconsin card sorting test

Count: 410
Abstract ID: 63
subject: Neural Injuries and Neurodegenerative Disorders: Neurodegenerative Disorders
Presentation Type: Poster

Efficacy of intensive Respiratory- Phonatory Treatment (LSVT) for Parkinson's patients: A case report

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Background and Aim : The patients with Parkinson's disease (PD) have vocal fold bowing and glottal gap subsequently. For this reason, their vocal loudness is reduced. The Lee Silverman Voice Treatment (LSVT) is a treatment for speech disorders associated with Parkinson's disease that focuses on increasing vocal loudness [sound pressure level (SPL)] and intelligibility. The purpose of this study was to examine the efficacy of intensive respiratory-phonatory treatment (LSVT) for glottal incompetence associated with Parkinson's disease.

Methods : One dysartric patient with Parkinson's disease (67 years old) who had vocal fold bowing received 4 weeks of the LSVT. Stroboscopic examination, phonatory function measurement, acoustical analyses, and perceptual judgments of voice were obtained at baseline and 4 weeks post-treatment. Stroboscopic examination was conducted during sustained vowel /i/ phonation at a habitual level of pitch and loudness and during a pitch glide. This task was recorded at two different situations: just prior to treatment and after 4 weeks of treatment. Change in vocal function was measured by means of acoustic analyses (vocal intensity, maximum phonation time and pitch range) of voice loudness during 16 treatment sessions.

Results : The patient showed significant improvement in glottal closure, phonatory function and acoustic features (vocal intensity, maximum phonation time and pitch range) after treatment.

Conclusion : These findings provide evidence that patient with Parkinson's disease who had vocal fold bowing and dysphonia may improve glottal competence and increase vocal loudness eventually after the LSVT.

Keywords : Parkinson's disease; LSVT; Vocal loudness; glottal incompetence

Count: 411
Abstract ID: 254
subject: Emotion, Motivation and Behavior: Biological Rhythm and Sleep
Presentation Type: Poster

The negative motivational aspect of morphine withdrawal syndrome changes during light-dark cycle

Submission Author: Fatemeh Rahmati Dehkordi

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Background and Aim : In mammals, there is an underlying mechanism that dictates the organism's biological functions and daily activity schedule, known as circadian rhythms, which play a major role in maintaining steady metabolism, homeostasis and immunity. Investigations have shown that the light-dark cycle can affect the mechanisms associated with reward and addiction so in this study the negative motivational effect of morphine withdrawal syndrome was evaluated during day and night.

Methods : Male Wistar rats (250-300 g) were administered 10 mg/kg morphine every 12h, for 10 days (n=20). Control rats received saline with the same protocol (n=20). Thereafter, when they were made dependent on morphine, tested for opioid withdrawal-induced conditioned place aversion and physical symptoms of naloxone-induced withdrawal syndrome during day (8:00-12:00) and night (20:00-24:00).

Results : The negative motivational aspect of morphine withdrawal syndrome was more severe during day compare to night.

Conclusion : It seems that the effects of withdrawal syndrome are more severe during day and this may consider for detoxification of opiate addicts.

Keywords : Light-dark cycle; morphine; withdrawal syndrome; conditioned place aversion; rat

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Razi Hall, Tehran, Iran

Iran University of Medical Sciences

Iranian Neuroscience Society

Count: 412
Abstract ID: 430
subject: Emotion, Motivation and Behavior: Stress and the Brain (Stress-modulated Pathways, Stress and Cognition, Stress Related Disorders)
Presentation Type: Oral

The role of the adrenergic system and HPA axis in protective effects of morphine against PTSD-like symptoms in rats

Submission Author: Payman Raise Abdullahi

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Background and Aim : Post-traumatic stress disorder (PTSD) arises after tremendous traumatic experiences. Recently, we showed that morphine has time-dependent protective effects against behavioral and morphological deficits in the single prolonged stress (SPS) as an experimental model of PTSD in adult male rats. To find the mechanisms underlying the protective effects of morphine against SPS-induced PTSD-like symptoms, we investigated the interaction between morphine and sympathetic nervous system (SNS) as well as hypothalamic-pituitary-adrenal (HPA) axis which crucially involved in stress response.

Methods : The animals were exposed to the SPS (restraint for 2 h, forced swimming for 20 min, and ether anesthesia) and morphine or saline was injected 24 hours after the SPS. Pharmaceutical interventions were administered 30 to 90 minutes before morphine/saline injection. Anxiety-like behaviors were evaluated using the elevated plus maze (EPM) 11 days after the SPS. After that, animals were conditioned in a fear conditioning task and extinction training was performed on days 1, 2, 3, 4 and 11 after fear conditioning.

Results : (1) Blockade of glucocorticoid receptors by RU-486 90 minutes before morphine injection, prevented the protective effects of morphine, reduced extinction index, increased freezing time and anxiety-like behaviors, (2) blockade of mineralocorticoid receptors by spironolactone 90 minutes before morphine injection, prevented the protective effects of morphine on SPS-induced anxiety-like behaviors, increased freezing time and reduced extinction index, (3) corticosterone synthesis inhibition by metyrapone 90 minutes before morphine injection, prevented the protective effects of morphine, reduced extinction index, increased freezing time and anxiety-like behaviors, (4) regarding SPS-induced anxiety-like behaviors, blockade of beta-adrenoceptors by propranolol 30 minutes before morphine or saline injection, not only did not affect the protective effects of morphine, but also decreased anxiety-like behaviors in the saline-treated SPS rats. In terms of fear extinction, however, propranolol prevented the protective effects of morphine, increased freezing time and reduced extinction index, (5) blockade of

peripheral beta-adrenoceptors by nadolol 30 minutes before morphine injection did not affect the protective effects of morphine on SPS-induced anxiety-like behaviors, freezing time and extinction index, (6) blockade of alpha-2 adrenoceptors by yohimbine, and enhancing the release of norepinephrine, 30 minutes before morphine injection, did not affect the protective effects of morphine on SPS-induced anxiety-like behaviors, but in terms of fear extinction, yohimbine prevented the protective effects of morphine and increased freezing time. Interestingly, yohimbine reduced freezing time in the saline-treated SPS rats.

Conclusion : The protective effects of morphine on PTSD-like symptoms in rats require a certain level of HPA axis and SNS activity and any alteration in the function of their hormones can lead to the vanishing of the protective effects of morphine. Glucocorticoid and mineralocorticoid receptors, as well as, alfa-2 and central but not peripheral beta-adrenoceptors are involved in these effects. Moreover, beta-adrenoceptors blockade by propranolol, at least 24 hours after the SPS, not only had no beneficial effect on SPS-induced fear extinction impairment, but also SNS stimulation improved fear extinction. Indeed, the implementation of preventive pharmaceutical interventions after the traumatic events to prevent PTSD is not so straightforward than previously thought and further investigation is needed.

Keywords : PTSD; SPS; Morphine; Extinction; HPA axis; SNS

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Count: 413
Abstract ID: 240
subject: Neuropsychiatry and Psychology: Schizophrenia
Presentation Type: Poster

Evaluation of nonverbal and paralinguistic skills in schizophrenic patients

Submission Author: Melika Rajabzadeh

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Background and Aim : : Schizophrenia is a cognitive-communicative disease. A person with schizophrenia has problems with personal communication that pragmatic is one of the most important aspects of communication. Studies have so far shown that language impairment is considered a diagnostic indicator of schizophrenia. Literature has shown that language impairment is contributed to non-linguistic factors, such as intellectual disabilities or deficits in information processing. Neuropsychological and neuroanatomical studies of right hemisphere function suggest that pragmatic skills, such as paralinguistic processing, may be impaired in people with schizophrenia. Due to the high prevalence of schizophrenia and the lack of research in the area of pragmatic, our study aimed to investigate the pragmatic skills in non-verbal and paralinguistic aspects of schizophrenic adults through the pragmatic adult profile (APP) and also the effect of improving pragmatic skills in communication.

Methods : The current cross-sectional study was conducted on 43 individuals with schizophrenia and 43 healthy control subjects aged 18-60 years old. Inclusion criteria were diagnosis of schizophrenia by a psychiatrist, absence of other progressive diseases and substance abuse. Adult's pragmatic profile (APP) was used to assess the paralinguistic and nonverbal aspects of pragmatic skills. It evaluates the nonverbal aspects of the six components (Physical contact and proximity, body movements, facial expressions, eye contact, gesture) and the paralinguistic aspect of the five components (intelligibility, vocal intensity, pitch, prosody, and fluency of speech). Descriptive analysis (mean ± SD) was done. The scores obtained in linguistic and nonverbal variables were compared using an independent T-test with significance level of <0.05.

Results : : Participants whit schizophrenia scored lower on nonverbal (mean ± SD 5/00 ± 1/09) and paralinguistic (mean ± SD 5/06 ± 3/97) aspects than the control (nonverbal: mean ± SD = 96/11 ± 14/89; paralinguistic: mean ± SD= 86/51 ± 28/16) group. In both nonverbal and paralinguistic they showed significantly poorer skills. Paralinguistic and nonverbal scores were significantly different (paralinguistic: t=40.00, P<0.0001; nonverbal: t=19.08, P<0.0001) in patients with schizophrenia from control group.

Conclusion : In this study, we found that deficits in nonverbal and paralinguistic aspects of the patients showed that their performance in the pragmatic skills was poor. Pragmatic deficits lead to communication deficits in schizophrenia patients. And these flaws occur. And these flaws occur during the conversation. This study suggests the necessity of implementing pragmatic programs for people with schizophrenia to prevent recurrence of injuries and improve communication skills to reduce dependence on their daily activities.

Keywords : Schizophrenia, Pragmatic, Communication

Count: 414
Abstract ID: 3
subject: Cognition: Learning and Memory
Presentation Type: Poster

Voluntary exercise modulates learning & memory and synaptic plasticity impairments in sleep deprived female rats.

Submission Author: Mohammad Amin Rajizadeh

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Background and Aim : Previous studies have indicated that forced exercise plays a preventive role in synaptic plasticity deficits in the hippocampus and behavioral impairments in sleep-deprived male and female rats. The objective of the present study was to evaluate the effects of voluntary exercise on early long-term potentiation (E-LTP) at the Cornu Ammonis (CA1) area of the hippocampus and behavioral functions by barnez maze and novel location tests in sleep-deprived female rats.

Methods : Intact female Wistar rats were used in the present study. The exercise protocol was four weeks wheel running and the multiple platform method was applied to induce 72 h Sleep deprivation (SD). We examine the effect of exercise and/or SD on synaptic plasticity using in vivo extracellular recording in the CA1 area of the hippocampus. Spatial learning and memory examined by barnez maze and recognition memory assessed by novel location test.

Results : Field potential recording indicated that the induction and maintenance phase of E-LTP impaired in the sleep deprived animals compared to the other groups. After 72 h SD, E-LTP impairments were prevented by 4 weeks of voluntary exercise but But do not go back to control values.SD impairs learning and memory and exercise could improve these deficits

Conclusion : In conclusion, the synaptic plasticity deficit in sleep-deprived female rats was improved by voluntary exercise. Further studies are suggested to evaluate the possible underlying mechanisms.

Keywords : Sleep deprivation (SD), Voluntary exercise, synaptic plasticity, LTP, Learning and memory

Count: 415
Abstract ID: 329
subject: Neurorehabilitation and Regeneration: Other
Presentation Type: Oral

Effects of temporal processing -based auditory rehabilitation on speech perception in noise performance in high functional adolescent with Autism Spectrum Disorders

Submission Author: Maryam Ramezani

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Background and Aim : Autism spectrum disorder (ASD) is a neurodevelopmental disorder that one of the main problems of these is speech perception impairment in the presence of background noise. Additionally, researchers have reported temporal auditory processing impairment in these patients. In the present study, we evaluated the effects of a temporal-based rehabilitation program on improvement of speech perception in the presence of noise using the speech auditory brainstem response (sABR).

Methods : 28 adolescents with high functional ASD with the mean age of 14.35 ± 1.86 were randomly selected and divided into the ASD group (11 males and three females), and the control group (13 males and one female). All subjects had a normal hearing and intelligence threshold and had no history of neurological disorder. The speech perception test was performed in signal-to-noise ratios of zero and +10. The intervention group received a temporal processing-based auditory rehabilitation program and the control group received a conventional rehabilitation program ($P<0.05$ was considered significant).

Results : speech perception in noise after rehabilitation was significantly higher in intervention group ($P <0.001$) and the latency of all sABR waves in the rehabilitation group was lower than that of the control group.

Conclusion : Improvement of speech perception in noise and reduction of latency of sABR waves after a temporal processing-based rehabilitation program and one month later, points to the role of auditory temporal processing in speech perception and neural plasticity in brainstem.

Keywords : Autism; speech perception; auditory temporal processing; rehabilitation

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Count: 416
Abstract ID: 535
subject: Neuropsychiatry and Psychology: Other
Presentation Type: Poster

Effectiveness of treatment based on Commitment and Acceptance on Perception of the Disease among Women with Multiple Sclerosis

Submission Author: Narjes Ramezanpour

Narjes Ramezanpour[1], Tahere Hamzepour[2]

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2. Assistant Professor, Department of Psychology, Islamic Azad University of Lahijan

Background and Aim : MS is one of the diseases that gradually causes disability in patients. The aim of this study was to determine the effectiveness of treatment based on commitment and acceptance on perception of the disease in MS patients in Lahijan city.

Methods : This research is a semi-experimental design with pre-test and post-test. The statistical population of the study included all patients with MS who were referred to the Lahijan 22 Aban hospital. 30 patients were randomly selected and assigned to two experimental (15 people) and control (15 people) groups. They completed the perception of Breff disease.

Results : The results showed that acceptance and commitment therapy was effective on perception of the disease ($p < 0.05$).

Conclusion : According to the results, it is suggested that interventional programs based on acceptance and commitment to improve perceive the disease should be continued for MS patients.

Keywords : Treatment based on Commitment and Acceptance, Perception of the Disease

Count: 417
Abstract ID: 475
subject: Social Neuroscience: Other
Presentation Type: Poster

The role of Exercise on preventing of addiction among adolescents and youth in Jahrom city.

Submission Author: Afsaneh Ranjbar

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Background and Aim : Addiction is a "social illness" that has physical and mental complications. Exercise decreases the risk of addiction whose mechanisms are not clearly understood yet. The aim of present study designed the role of Exercise on addiction and health-risk behaviors among adolescents and youth in Jahrom city

Methods : This cross-sectional study, with a sample size of 395 adolescents and young between 24-15 years old of Jahrom's households was accomplished in a multi-stage cluster sampling based on postal areas. Among the study population ,108(27.3%) were men and 280(709%) were women. Methods and tools for data collection were questionnaires containing demographic information, drugs usage and sports of information including: culb,s member, the rate and kind of physical activity . Data were scrutinized by using descriptive statistics and then were analyzed by using Chi –Two, Fisher and correlation coefficients.

Results : The results indicated that, at least 44% of subjects had used drugs. There were significant reverse relationships between substance use during past 30 days and education(P<0.001). In additionally, Exercise and participating in sports club's can reduce drug-seeking behavior and the risk of addictive drug (p<0.009).There were no significant relationships between sex and substance usage.

Conclusion : These finding indicated that ,Exercise decreases the risk of addiction that can be induced by increase of serotonin neurotransmitters in brain.

Keywords : Exercise, addiction, adolescents ,youth ,Jahrom city.

Count: 418
Abstract ID: 417
subject: Neural Injuries and Neurodegenerative Disorders: Other
Presentation Type: Poster

Investigating the PGC-1α gene expression in brain stem of male rats during repeated methamphetamine treatment and withdrawal syndrome

Submission Author: Hananah Ranjbar

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Background and Aim : Peroxisome proliferator-activated receptor gamma coactivator-1alpha, PGC-1α, is a member of the PGC-1 family of transcriptional coactivators. The PGC-1 coactivators play important roles in gene regulation of molecules critical for metabolic processes throughout the body such as mitochondrial biogenesis. Methamphetamine intoxication results in a constellation of gene expression changes in neurons. Buprenorphine, a partial mu-opoid receptor agonist, has unique pharmacologic properties that distinguish it from methadone and other medications used in the treatment of opioid dependence. So the aim of this study was to investigate the alterations of PGC-1α during methamphetamine-induced addiction and withdrawal syndrome in the brain stem of male rats.

Methods : 28 male Wistar rats were randomly assigned into four experimental groups (n=7): Control, Saline, Methamphetamine (10 mg/kg, i.p. for 5 days) and Spontaneous methamphetamine withdrawal syndrome (72 hour later). Brain stem tissue was assayed for the expression of PGC-1α gene using RT-PCR.

Results : Chronic administration of methamphetamine to control group decreased the PGC-1α gene expression in comparison to control group but it was not significant. In Spontaneous methamphetamine withdrawal syndrome group, the level of PGC-1α gene expression did not changed in comparison to control group.

Conclusion : It is known that PGC-1α plays an important role in the underlying mechanism of METH-induced mitochondria dysfunction. Therefor it seems, the mitochondria biogenesis may be a new, valuable tool in searching for a new strategy of management of methamphetamine dependence.

Keywords : PGC-1α, Methamphetamine, brain stem

Count: 419
Abstract ID: 551
subject: Cognition: Other
Presentation Type: Poster

Angiotensin II type 1 receptor blocker losartan effect on rats exposed to predator odor

Submission Author: Hoda Ranjbar Homghavandi

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Background and Aim : Predator odor induces anxiety-like behaviors in rats. Stress has destructive effect on neuronal circuits in brain which gives rise to many psychological disorders. Furthermore, studies have shown the existence of AT1 receptors in brain which play a role in stress responses. This study intention was to investigate the losartan (AT1 antagonist) treatment effects on rat's behavioral response undergoing predator odor stress and non-stress.

Methods : . Each of sham and stress exposed group was divided to 4 subgroups (n =8). In non-associated groups, the rats were exposed to an unscented piece of cloth, and in the associated groups the unscented cloth was replaced with a cat-scented cloth associated with a cue. The losartan and normal saline were injected one hour before predator odor exposure and the behavioral tests applied after 10 days.

Results : Losartan significantly increased the time spent in the compartment associated with the cue. In the EMP task losartan had also the same effect by increasing the time spent in open arms.

Conclusion : . Our findings showed the beneficial effects of losartan on anxiety behaviors via inhibition of AT1 receptors. In general, it can be concluded that induction of predator odor stress in rats resulted in anxiety, and the effect was reversed by losartan.

Keywords : Anxiety; Losartan; Predator; Stress.

Count: 420
Abstract ID: 223
subject: Cognition: Learning and Memory
Presentation Type: Poster

Effect of Royal jelly on β-Amyloid -induced learning and memory impairment in rats

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Background and Aim : Alzheimer's disease is a neurodegenerative disorder that is associated with impaired memory and cognitive functions. Royal Jelly (RJ) is a substance secreted by worker bees and has antioxidant, anti-inflammatory and anti-apoptotic pharmacological roles. These properties are important in the treatment of neurodegenerative diseases. Therefore, in this study the effects of RJ on Alzheimer's animal model were investigated.

Methods : 50 Wistar male rats were divided into 5 groups including Control group, sham group, Alzheimer group and Alzheimer+ Royal jelly groups. the Alzheimer group received ICV injection of Aβ(1-40). Royal jelly(50 and 100 mg / kg) was administered daily by oral gavage for 4 weeks. Passive avoidance learning tests were performed after period of treatment. The statistical analysis of data was performed using ANOVA followed by Tukey's post hoc analysis

Results : Alzheimer group showed marked enhancement in STLr($p<0.05$) and TDC($p<0.001$). Administration of royal jelly in both doses ameliorated the effects of beta amyloid on animal behavior in the passive avoidance learning and memory task($p<0.001$).

Conclusion : Our results indicate that impairments of learning and memory in beta amyloid -received rats can be inhibited by antioxidants such as royal jelly.

Keywords : Alzheimer, amyloid beta, royal jelly, memory, rat

Count: 421
Abstract ID: 225
subject: Pain and Sensory Systems: Tactile, Somatosensation and Pain Syndromes
Presentation Type: Poster

Milnacipran attenuated carrageenan-induced hyperalgesia and inflammation in male rats

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Background and Aim : Many injuries caused pain and inflammation, which are one of the major challenges for physicians. Existing anti-inflammatory and analgesic drugs such as NSAIDs and opioids have many side effects. In this study, the analgesic and the anti-inflammatory effects of milnacipran were investigated on carrageenan-induced nociception and inflammation in male rats.

Methods : Pain and inflammation were induced by intraplantar injection of λ-carrageenan (1% v/v) in the right hind paw. Indomethacin (10 mg/kg) or milnacipran (20 mg/kg) were administered half an hour before carrageenan injection. Analgesia was measured by Hotplate test, and inflammation was assessed by paleothermometer. Finally, the effect of milnacipran on lipid peroxidation and myeloperoxidase (MPO) activity evaluated spectrophotometrically.

Results : The results showed that carrageenan caused hyperalgesia and inflammation in the hind paw tissue. Milnacipran (20 mg/kg: i.p) significantly attenuated (P<0/01) inflammation percentage and significantly increased (P<0.001) nociception threshold. Also, milnacipran significantly suppressed malondialdehyde (MDA) levels (P<0.05) and MPO activity (P<0.001) following intraplantar injection of carrageenan in the hind paw tissue.

Conclusion : In the present study, milnacipran showed anti-nociceptive and anti-inflammatory effects on carrageenan-induced nociception and inflammation. Milnacipran reduced inflammatory edema and increased the paw withdrawal threshold probably through suppression of MDA level and MPO activity in the hind paw tissue. Therefore, milnacipran holds important potential as an anti-inflammatory and anti-nociceptive drug. Although, there is need more clinical trial studies to prove this issue.

Keywords : Carrageenan; Milnacipran; Plethysmometer; Pain and Inflammation; Myeloperoxidase; Malondialdehyde

Count: 422
Abstract ID: 294
subject: Cognition: Learning and Memory
Presentation Type: Poster

Effect of intracerebroventricular administration of dorsomorphin and adiponectin on memory in experimental model of Alzheimer's disease

Submission Author: Samira Rashtiani

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Background and Aim : There is a close relationship between Alzheimer's disease (AD) and insulin signaling dysfunction. Adiponectin (APN) is an adipocytokine that increases insulin sensitivity through binding to its receptors (AdipoR 1, AdipoR2). Adiponectinase signaling is via AMPK and PPAR-α. Given the role of APN in decreasing insulin resistance and memory improvement; we investigated the probable signaling pathway involved in memory improvement by APN in the experimental model of Alzheimer's disease.

Methods : Fifty-six adult male rats were randomly allocated to 7 groups: control, APN, STZ, STZ+APN and DM in three doses (0.2, 2 and 20 µM).). On days 1 and 3, rats received STZ (3 mg/kg, icv) and were assessed by passive avoidance task and novel object recognition test, after 2 weeks. Thirty minutes before retrieval tasks, APN or APN+DM were injected, intracerebroventricularly.

Results : The step through latency (STL), which was diminished by STZ, increased significantly (P?0.0001) in APN+STZ group. Administration of different doses of DM before APN, reversed the memory improving effect of APN to a significant level (P?0.01). Total time spent in the dark compartment (TDC) was decreased by APN, while DM increased the TDC values to a significant level (P?0.01). In the cognitive memory test, the preference index (PI) decreased significantly in the APN+STZ+DM groups (P?0.01).

Conclusion : Our results indicate that adiponectin is able to compensate the STZ-induced cognitive decline, probably by boosting the insulin signaling pathway. In fact, DM inhibited the ameliorative effect of adiponectin by inhibiting AMPK. Thus, adiponectin improves memory probably by AMPK phosphorylating and regulation of energy metabolism.

Keywords : Alzheimer's disease, Adiponectin, AMP kinase, Memory, Streptozotocin.

Count: 423
Abstract ID: 364
subject: Cognition: Attention
Presentation Type: Poster

The Effectiveness of Cognitive Rehabilitation on Attention and Working Memory in Patients with Generalized Anxiety Disorder

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Background and Aim : Generalized anxiety disorder is one of the most common psychological disorders. Worry, as the main symptom of this disorder, can impair cognitive functioning. The purpose of this study was to investigate the effectiveness of cognitive rehabilitation on working memory and attention in people with generalized anxiety disorder.

Methods : The research method is quasi-experimental with pretest, post-test and control group. The study population included all clients with generalized anxiety disorder who referred to counseling centers in the first half of the year. From this population, 30 persons were selected as available and then were randomly assigned to control and experimental groups, 15 each. Finally, the cognitive rehabilitation program was administered to the experimental group under 12 sessions of Cognitive Rehabilitation Therapy with Captain Log Version 2014 software. The instruments used in this study were the General Anxiety Scale(GAD-7), diagnostic interview, CPT and n -back test. Multivariate analysis of co-variance was used to analyze the data using SPSS Version 23 software.

Results : The findings indicate that after the intervention, the individuals' performance on working memory and attention has increased significantly, which confirms the effectiveness of cognitive rehabilitation program on improving working memory and attention in people with generalized anxiety disorder.

Conclusion : It can be concluded that cognitive rehabilitation programs can improve cognitive impairments, including working memory and attention in people with anxiety disorder.

Keywords : Anxiety Disorders, Attention, Working Memory

Count: 424
Abstract ID: 305
subject: Cognition: Other
Presentation Type: Poster

Role of orexinergic receptors in the dentate gyrus of the hippocampus in the acquisition and expression of morphine-induced conditioned place preference in rats

Submission Author: KIMIA RAYAT SANATI

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Background and Aim : Orexinergic projections derived from the lateral hypothalamus (LH) play a crucial role in the acquisition and expression of morphine-conditioned place preference (CPP). The dentate gyrus (DG) region of the hippocampus, which receives projections of LH orexinergic neurons, have demonstrated that orexinergic receptors are expressed in there. This study examined the effects of intra-DG orexin-1 (OX1) and orexin-2 (OX2) receptor antagonists on the acquisition and expression of CPP induced by morphine.

Methods : Two separate cannulas were inserted bilaterally into the DG, and a CPP paradigm was performed. The CPP scores and locomotor activities were recorded using EthoVision software.

Results : The results show that an intra-DG microinjection of SB334867 (a selective OX1R antagonist) (0.5, 2.5, 12.5 nM/0.5 µl DMSO) and TCSOX229 (a selective OX2R antagonist) (0.5, 2.5, 12.5 nM/0.5 µl DMSO) before a morphine subcutaneous injection (5 mg/kg) during a three-day conditioning phase dose-dependently represses the acquisition of morphine-induced CPP in rats. Furthermore, these antagonists reduced the CPP score in the expression phase.

Conclusion : Consequently, it was established that orexinergic receptors in the DG are involved in the acquisition and expression of morphine-induced CPP.

Keywords : Reward; Orexinergic receptors; Dentate gyrus; Morphine; Conditioned place preference; Rat

Count: 425
Abstract ID: 372
subject: Cognition: Other
Presentation Type: Oral

The construction of an Iranian MRI brain template

Submission Author: Foroogh Razavi

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Background and Aim : The use of a common coordinate space is crucial for the analysis and reporting of neuroimaging experiments. From the time Talairach space was developed through dissection of a single brain to this day, researchers have tried to construct a high resolution standardized space compatible with every population under study. Recent studies have suggested that using a population specific target space can improve the results of spatial normalization of brain MR images. Hence, our objective is to develop an Iranian brain template and compare the result with the commonly used MNI space.

Methods : In this study, we used the three-dimensional T1-weighted MRI data of 152 healthy young volunteers. After collecting data using a 64-channel head coil and a 3 Tesla Prisma MRI Scanner, we extracted the brain from each whole-head image. We built the Iranian brain template through a robust iterative algorithm. Basically, each brain extracted MR image was registered to an initial common space; then a tentative average was formed as the reference for the next iteration. This process continued until the difference between two consecutive templates reached and stayed at a minimum.

Results : The aforementioned iterative procedure resulted in an Iranian standard template comparable with the commonly used MNI space. By overlaying these two templates we observed their differences in size and shape. We quantified this morphological difference by measuring four global brain features: length, width and height of the brain, as well as the AC-PC distance. The comparison of our results with the MNI-152 shows that the Iranian brain is smaller in average specially in length and height. In accordance with other similar studies, AC-PC distance is the most constant feature across templates.

Conclusion : Our research shows that using the presented population-specific template can facilitate studies involving Iranian brain MR images, and improve their results.

Keywords : Standard Template, MRI, population-specific template

Count: 426
Abstract ID: 517
subject: Neuropsychiatry and Psychology: Mood Disorders
Presentation Type: Poster

The Role of Cognitive Flexibility and Organizational Executive Function in Predict of Internalized Disorders of Preschool Children

Submission Author: Shiva Razi

Shiva Razi[1]

1. Master of Clinical Psychology, Islamic Azad University of Boukan

Background and Aim : Preschool children exposed to major disorders due to lack of cognitive and emotional skills. Also the purpose of the present study was to investigate the role of cognitive flexibility and organizational executive function in predict of internalized disorders in preschool children.

Methods : The research method was descriptive-correlational. The statistical population of the study includes all preschool children in Urmia city in summer 1398. A total of 140 children (70 girls and 70 boys) were selected through available sampling and completed the Wisconsin Test, College Executive Function and Achenbach Internalizing Disorders by children and their parents. Data were analyzed using Pearson correlation coefficient and multiple regression.

Results : The results showed a negative relationship between cognitive flexibility and internalized disorders (P <0.01) and a positive relationship between organized executive functioning and internalized disorders in preschool children (P <0.05). The results of multiple regression analysis also showed that %22 of the variance of internalizing disorders in preschool children was predicted by cognitive flexibility and Organizational Executive Function.

Conclusion : Based on the results and considering high score on internalized disorders and organizational executive function means more disorder, therefore, cognitive flexibility had a negative relationship with internalizing executive function and positive relationship with internalized disorders. Accordingly, these variables played an important role in reducing the internalized disorders of preschool children, which, according to the results, suggests that these disorders reduce the frequency of these disorders through promoting cognitive flexibility and executive functioning of these children.

Keywords : Cognitive Flexibility, Organizational Executive Function, Internalized Disorders

Count: 427
Abstract ID: 244
subject: Emotion, Motivation and Behavior: Motivation and Emotion
Presentation Type: Poster

Prediction of Alexithymia based on Cognitive Emotion Regulation and Mindfulness in female students with Negative Affect

Submission Author: Shiva Razi

Shiva Razi[1]

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Background and Aim : Negative affect in female students can lead to academic failure. Negative affect can lead to problems such as alexithymia, also the aim of this study was to predict alexithymia based on cognitive emotion regulation and mindfulness in female students with negative affect.

Methods : This study is a descriptive-correlational study. the statistical population of the study includes all female students of Payame Noor University of Urmia in the 2018-2019. Using the sampling method, 240 female students who had negative emotions based on the response to the positive and negative affect scale of Watson et al, Were selected as the research sample. they completed the Alexithymia Toronto questionnaire, Garnefsky et al of Cognitive emotion regulation and mindfulness questionnaire of Bauer et al. Data were analyzed using Pearson correlation coefficient and multiple regression.

Results : The results showed that there was a negative significant relationship between positive cognitive emotion regulation strategies with alexithymia ($p < 0.01$) and total score of mindfulness with alexithymia ($p < 0.01$). there was a positive and significant relationship between negative cognitive emotion regulation strategies and alexithymia ($p < 0.05$). also multiple regression results showed that % 38 of variance of alexithymia in female students with negative affect was predicted by cognitive emotion regulation and mindfulness adjustment.

Conclusion : The results indicated that cognitive emotion regulation and mindfulness has a important role in alexithymia of female students with negative affect. Therefore, according to the results, can reduce alexithymia in female students with negative affect.

Keywords : Alexithymia, Cognitive Emotion Regulation, Mindfulness, Negative Affect

Count: 428
Abstract ID: 224
subject: Emotion, Motivation
and Behavior: Reward and the Brain
Presentation Type: Oral

4-fluoro-N-(4-sulfamoylbenzyl) benzene sulfonamide attenuate nicotine induced Behavioral sensitization.

Submission Author: Naeem Rehman

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2. 1COMSATS University Islamabad (Abbottabad campus)

Background and Aim : Frequent exposure to nicotine produce a persistent increase in locomotors effects of mice a phenomenon called sensitization. Due to nicotine sensitization relapse is the most common outcome. Aim of the study The aim of this study is to examine the effect of 4-fluoro-N-(4-sulfamoylbenzyl) benzene sulfonamide in nicotine induced behavioral sensitization. We investigate the effect of 4-fluoro-N-(4-sulfamoylbenzyl) benzene sulfonamide on acquisition and expression of nicotine induced behavioral sensitization in mice.

Methods : Selected groups of mice were administered nicotine 0.5mg/kg, while one group receives saline for seven consecutive days. After 3 days of drug free period two groups received saline and nicotine respectively, while test groups receive 4-fluoro-N-(4-sulfamoylbenzyl) benzene sulfonamide at a dose of 20,40,60 mg/kg. One hour after drug administration challenged dose of nicotine was administered and locomotor activity was observed on day 1,3,5,7 and 11. In another's set of experiment selected group of mice were administered concomitant 4-fluoro-N-(4-sulfamoylbenzyl) benzene sulfonamide at a dose of 20, 40, 60mg/kg daily before nicotine 0.5mg/kg using the same protocol for the same period of time to the entire groups. After 3 days of abstinence period challenge dose of nicotine was administered and locomotion activity was observed after at, 3, 5, 7 and 11 days.

Results : Results showes that F2 compound in all 3 doses significantly attenuated acquisition and expression of nicotine behavioral sensitization in mice

Conclusion : In our study we found that 4-fluoro-N-(4-sulfamoylbenzyl) benzene sulfonamide was able to antagonize the acquisition and expression of nicotine induces behavioral sensitization in Balb/c mice.Further studies are warranted to explore the exact mechanism in the reward pathway in the specific brain areas

Keywords : F2 compound, Sulfonamides, nicotine sensitization, Pharmacotherapy, drug addiction, locomotor activity

Iran University of Medical Sciences

Iranian Neuroscience Society

Count: 429
Abstract ID: 62
subject: Motor Systems
and Movement Disorders: Movement Disorders (Parkinson, Huntington's, ALS, Ataxia, edication-induced Movement Disorders)
Presentation Type: Poster

The effect of Tanacetum polycephalum on rotarod motor performance in the pentylenetetrazol kindled rat

Submission Author: Farnoosh Rezaali

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Background and Aim : Epilepsy is a common chronic neurodegenerative disorder disease, it can also, affect motor balance. In this study, the medicinal plant Tanacetum polycephalum, was used to evaluate its effect on motor deficit caused by pentylenetetrazol (PTZ) in the rat.

Methods : Twenty-four rats were randomly allocated to 4 groups: control negative under treatment with PTZ (sub-threshold dose 35 mg/kg for one month), control positive under treatment with Phenobarbital (PB-30 mg/kg), and two PTZ groups under treatment with T. polycephalum extract (TPE-50, and -100 mg/kg). Standard rotarod test was used to evaluate motor coordination. Data were analyzed using SPSS.

Results : Motor-skill tasks in rotarod test in PTZ group receiving TPE at a dose of 50 and 100 mg/kg was greater than PTZ group. In addition, PB 30 mg/kg significantly attenuates the motor impairments in treated animals.

Conclusion : Our results showed that TPE could prevent epilepsy and elevate motor coordination in the PTZ-kindled rats.

Keywords : Tanacetum polycephalum; Epilepsy; Rotarod; Motor coordination; Pentylenetetrazol

Count: 430
Abstract ID: 554
subject: Neurorehabilitation and Regeneration: Speech and Language Therapy
Presentation Type: Poster

Study the effectivity of naming therapy on cortical functional changing of neural activities in aphasic patients: Narrative review

Submission Author: Fatemeh Rezaei

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Background and Aim : Naming deficits are one of the most sustained and common effects of aphasia. Therapeutic researches confirm the potential values of naming treatments in order to reduce the complex problems of this group. But the main challenge is the stability and generalization in this group. Following treatment cortical changes reveals that it is possible to reactive the lingual areas of these patients. Considering this difference, patterns of changes among the common therapeutic procedures can affect the stability and generalization of treatment results. Therefore in this research, to have a better perception of neural mechanism of lingual substructures, we study the way that neural activities extend in different areas of cortex after semantical and phonological treatments of naming in aphasic patients with left hemisphere ischemia.

Methods : In this narrative review article, researches between 2015 and 2019 in Scopus, PubMed and Science direct are studied.

Results : This study performs information in different areas; considering the different protocols of studying functional changes of cortex, Left Inferior Frontal Gyrus (LIFG) and different areas of Temporal lobe showed the most effectivity among all studied areas. Furthermore, after naming therapies, increase of neural activity is reported in areas like occipital lobe following presenting the visual stimulant, memory areas and right hemisphere that are indirectly related with lingual processes.

Conclusion : It appears that during stages of treatment, depends on language task and type of stimulant, different activation patterns are expected and by selecting the treatments that has the most amount of activation, it is possible to improve the treatment results.

Keywords : anomia, aphasia, fMRI, stroke, treatment

Count: 431
Abstract ID: 324
subject: Neural Injuries and Neurodegenerative Disorders: Neurodegenerative Disorders
Presentation Type: Poster

Probiotic treatment improves the impaired spatial cognitive performance and restores synaptic plasticity in an animal model of Alzheimer's disease

Submission Author: Zahra Rezaeiasl

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Background and Aim : Studies demonstrate that damage to gut microbiota is associated with some brain disorders including neurodegenerative diseases such as Alzheimer's disease (AD). Accordingly, supporting gut microbiota has been considered as a possible strategy for AD treatment. We evaluated behavioral and electrophysiological aspects of the brain function in an animal model of AD made by intracerebroventricular injection of β-amyloid 1-42 (Aβ).

Methods : The Con and Con+Pro rats received vehicle and probiotics respectively. Five groups of Alzheimeric animals were treated by either vehicle including (Alz-2weeks) and (Alz-4weeks) groups or received probiotics including (Pro+Alz), (Pro+Alz+Pro) and (Alz+Pro) groups. Alz (2weeks) and Alz (4weeks) groups were tested behaviourally and electrophysiologically two or four weeks after i.c.v injection of Aβ respectively and three groups including Pro+Alz, Pro+Alz+Pro and Alz+Pro received probiotics for eight weeks before injection of Aβ or four weeks before and two weeks after injection of Aβ or for four weeks after injection of Aβ respectively and then were tested behaviouraly and electrophysiologically. Sham group was subjected to injection of saline (i.c.v) and received the vehicle. Spatial learning and memory was assessed in Morris Water Maze. Also, basic synaptic transmission and long-term potentiation (LTP) were assessed by recording field excitatory postsynaptic potentials (fEPSPs) in hippocampus. Change in anti-oxidant/oxidant factors and some metabolic factors was assessed via measuring plasma level of total anti-oxidant capacity (TAC), malondealdehyde (MDA), Triglyceride (TG), total cholesterol and VLDL. Brain staining was done to confirm β-amyloid accumulation. Fecal bacteria quantification was accomplished to find how probiotic supplement affected gut microbiota.

Results : Results showed that while the Alz animals displayed a weak spatial performance, probiotic treatment improved the maze navigation in Pro+Alz+Pro and Pro+Alz groups. Whereas basic synaptic transmission remained unchanged in the Alz rats, LTP was suppressed in this group. Probiotic treatment significantly restored LTP in the Pro+Alz and Alz+Pro groups and further enhanced it in the Con+Pro rats. Fecal bacteria quantification in Alz group had no significant difference with Con group but treatment with probiotics significantly increased it until 100 times compare to Alz group. In ALZ group, an increase in MDA, TG, total cholesterol and VLDL was observed which all these factors significantly decreased by probiotics.

Conclusion : This study provides the first proof on positive effects of probiotics on synaptic plasticity.

Keywords : Memory, synaptic plasticity, Alzheimer disease, Probiotic

Count: 432
Abstract ID: 512
subject: Epilepsy, Neural Excitability, Synapses, and Glia: Seizure and Epileptic Disorders
Presentation Type: Poster

Convulsive Status Epilepticus Treatment

Submission Author: Soheila Rezakhani

Soheila Rezakhani[1]

1. Kerman Neuroscience Research Center, Kerman Medical University

Background and Aim : The optimal pharmacologic treatment for early convulsive status epilepticus is unclear. To analyze efficacy, tolerability and safety data for anticonvulsant treatment of children and adults with convulsive status epilepticus and use this analysis to develop an evidence-based treatment algorithm.

Methods : Structured literature review using MEDLINE, Embase, Current Contents, and Cochrane library supplemented with article reference lists. Randomized controlled trials of anticonvulsant treatment for seizures lasting longer than 5 minutes. Individual studies were rated using predefined criteria and these results were used to form recommendations, conclusions, and an evidence-based treatment algorithm.

Results : A total of 38 randomized controlled trials were identified, rated and contributed to the assessment. Only four trials were considered to have class I evidence of efficacy. Two studies were rated as class II and the remaining 32 were judged to have class III evidence. In adults with convulsive status epilepticus, intramuscular midazolam, intravenous lorazepam, intravenous diazepam and intravenous phenobarbital are established as efficacious as initial therapy (Level A). Intramuscular midazolam has superior effectiveness compared to intravenous lorazepam in adults with convulsive status epilepticus without established intravenous access (Level A). In children, intravenous lorazepam and intravenous diazepam are established as efficacious at stopping seizures lasting at least 5 minutes (Level A) while rectal diazepam, intramuscular midazolam, intranasal midazolam, and buccal midazolam are probably effective (Level B). No significant difference in effectiveness has been demonstrated between intravenous lorazepam and intravenous diazepam in adults or children with convulsive status epilepticus (Level A). Respiratory and cardiac symptoms are the most commonly encountered treatment-emergent adverse events associated with intravenous anticonvulsant drug administration in adults with convulsive status epilepticus (Level A). The rate of respiratory depression in patients with convulsive status epilepticus treated with benzodiazepines is lower than in patients with convulsive status epilepticus treated with placebo indicating that respiratory problems are an important consequence of untreated convulsive status epilepticus (Level A). When both are available, fosphenytoin is preferred over phenytoin based on tolerability but phenytoin is an acceptable alternative (Level A). In adults, compared to the first therapy, the second therapy is less effective while the third therapy is substantially less effective (Level A). In children, the second therapy appears less effective and there are no data about third therapy efficacy (Level C). The evidence was synthesized into a treatment algorithm.

Conclusion : Despite the paucity of well-designed randomized controlled trials, practical conclusions and an integrated treatment algorithm for the treatment of convulsive status epilepticus across the age spectrum (infants through adults) can be constructed. Multicenter, multinational efforts are needed to design, conduct and analyze additional randomized controlled trials that can answer the many outstanding clinically relevant questions identified in this guideline.

Keywords : Status epilepticus, Treatment, aniepileptic drugs

Count: 433
Abstract ID: 508
subject: Cognition: Cognitive Aging
Presentation Type: Poster

High-Definition transcranial Direct Current Stimulation (tDCS) in treatment Of Mild Cognitive Impairment

Submission Author: Soheila Rezakhani

Soheila Rezakhani[1]

1. Kerman Neuroscience Research Center, Kerman Medical University

Background and Aim : Transcranial direct current stimulation (tDCS) is a non-invasive neuromodulatory technique that has shown encouraging results regarding performance improvement of normal subjects in tests of executive functions. Moreover, when applied repeatedly in daily sessions, tDCS has shown therapeutic potential in various neuropsychiatric disorders. However, there is a need for double-blind, placebo-controlled studies to determine the true therapeutic potential of this portable, low-cost and non-invasive treatment. Mild cognitive impairment (MCI) of the amnestic subtype may evolve into Alzheimer's dementia (AD) and pharmacological approaches have not been successful in ameliorating symptoms or halting progression to AD. Here we propose a protocol for studying a possible role for tDCS on improvement of MCI symptoms in older patients.

Methods : This will be a double-blind, sham-controlled study of the effects of anodal tDCS over the left dorsolateral prefrontal cortex of patients with MCI. Patients aged 60-90 years will be randomly assigned to either real tDCS or sham stimulation. Twenty minute real or sham tDCS sessions, 5 days a week, will be performed over the course of two weeks. MOCA test will be assessed at baseline, after the second weeks of treatment, as well as one and three months after the last tDCS session. The primary outcome will be change in test scores over time. Secondary outcomes will be self-reported memory improvement and possible side effects of tDCS.

Results : This study will evaluate possible therapeutic applications of tDCS for treatment of MCI. tDCS is a portable and low-cost neuromodulatory technique that has been found to increase performance of both normal subjects and patients in many cognitive tasks. It will also examine the tolerability, program adherence and possible side effects of this novel technique in this age group. The information obtained in this study should be useful in planning further studies in which tDCS could be combined with other treatment modalities, such as cognitive training.

Conclusion : following anodal stimulation, MCI patients had significantly improved MoCA scores, to the level of controls. Also the information obtained in this study should be useful in planning further studies in which tDCfollowing anodal stimulation, MCI patients had significantly improved MoCA scores, to the level of controls. Also the information obtained in this study should be useful in planning further studies in which tDCS could be combined with other treatment modalities, such as cognitive training.S could be combined with other treatment modalities, such as cognitive training.

Keywords : mild cognitive impairment; dementia; High definition transcranial direct current stimulation; HD tDCS

Count: 434
Abstract ID: 400
subject: Cognition: Working Memory
Presentation Type: Poster

Role of beta coupling in higher cognitive function

Submission Author: Ehsan Rezayat

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Background and Aim : Holding information in the brain for a while is a common process underlying most of the higher cognitive functions such as attention, working memory, decision making, mental imagery, and planned actions. Recent evidence proposed the great contribution of beta-band activity in the maintenance of the status quo. There is a massive body of evidence for the role of beta-band activity in the sensorimotor cortex, however, the association of beta-band activity in non-motor tasks across the non-motor cortex is poorly understood.

Methods : To explore the different roles of beta-band activity in cognitive tasks, we will review the beta-band coupling observation in system neuroscience papers. We focused on primate electrophysiological studies (ECOG and E/MEG in human and extracellular recording in monkeys) reported the role of beta-band activity in cognitive tasks.

Results : As a unique component in indigenous tasks, the beta-band activity might be a simple tool for the top-down indigenous driven signal. By categorizing different studies in this field, we will provide alternative explanations for the neural mechanism of beta-band coupling.

Conclusion : Furthermore, given the role of beta-band activity in disorders, we will cover the brain stimulation protocol which can be used in cognitive rehabilitation.

Keywords : beta coupling, Indigenous top-down, working memory; electrophysiology

Iran University of Medical Sciences

Iranian Neuroscience Society

Count: 435
Abstract ID: 242
subject: Neural Injuries and Neurodegenerative Disorders: Spinal Cord Injury
Presentation Type: Poster

Spatial and temporal changes of microglia and macrophages cell after traumatic spinal cord injury in rat: A systematic review

Submission Author: Motahareh Rezvan

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Background and Aim : Spinal cord injury (SCI) is a devastating type of neurological trauma with limited therapeutic opportunities. Among all the secondary injury mechanisms, the inflammatory response play major role in pathophysiology of spinal cord and neurologic function. The present systematic review was performed to reach an evidence-based knowledge in the context of the temporal-spatial pattern of microglia/macrophages changes as inflammatory cell depend on model of injury (contusion, compression and transection) to find appropriate time of intervention.

Methods : PubMed and EMBASE were searched with no temporal or linguistic restrictions. Non-interventional and non-transgenic animal studies confined to the rat species discussing microglia /macrophages cell changes were evaluated

Results : We found 11,557 studies, 26 of which met the inclusion criteria. In all three models of spinal cord injury, the reactivity of the microglia/macrophages initiates in early hours after injury. In compression model the highest cell activity was reported within 48 hours to 28 days. However, in contusion and transection models it reached maximum 7 days and between 4 to 60 days respectively. In all three injury models, inflammatory response occurred at the epicenter, in or near the lesion site in both gray and white matter with a maximum extension of 1 cm rostral to the epicenter in the gray matter in contusion and transection models.

Conclusion : The findings of this systematic review show that the pathophysiology of microglia/macrophages cell differs in various phases of SCI. Time-dependent morphological changes, peak time of cell reactivity and the area of inflammatory response depend on injury models were determined.

Keywords : Spinal cord injury, Microglia, Macrophages, Rat

Count: 436
Abstract ID: 511
subject: Emotion, Motivation
and Behavior: Neural Basis of Human Behavior
Presentation Type: Oral

Arbitrary eye movement strategy in global-local processing experiments

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Background and Aim : Perceptual organization is one of mostly debated issues in visual perception. We all process global features faster than local details, called "Global Precedence". Researches have shown that whatever stimulus eccentricity getting more distance from fovea, the perception of local details becomes harder. Researchers usually found this result when gaze point was fixed on the center of field of view and the stimulus location was manually adjusted.

Methods : Our question is "In process of global and local features, what is eye movement strategy to choose arbitrary eccentricity when the gaze point was not restricted to a particular fixation point?". We design two experiments in two different paradigms: Matching and Similarity Judgment. We setup an EYELINKII™, 1000Hz to perform these two tasks with fifteen participants.

Results : We found that the global precedence was confirmed by these two experiments. Also, we interestingly observed a high average of "arbitrary eccentricity" in global trials, in compared with local trials. Despite, the number of fixations were meaningfully more in local trials.

Conclusion : Naturally, higher arbitrary eccentricity is preferred to percept global features.

Keywords : perceptual organization, global precedence, arbitrary eccentricity, eye movement strategy.

Count: 437
Abstract ID: 397
subject: Cognition: Attention
Presentation Type: Oral

Attention and inhibitory control deficits in patients with genetic generalized epilepsy and psychogenic nonepileptic seizure

Submission Author: Mehrdad Roozbeh

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Background and Aim : This study aims to evaluate the attention and inhibitory control functions in patients with genetic generalized epilepsy (GGE) and psychogenic non-epileptic seizure (PNES) and compare the results with the healthy control subjects.

Methods : A total of 30 patients with GGE, 30 patients with PNES, and 32 healthy control subjects were included in the study. The Severity of attention and inhibitory control deficit, general intelligence status, and psychopathology screening in all subjects were respectively investigated with Integrated Visual and Auditory Continuous Performance Test (IVA-CPT), Wechsler Adult Intelligence Scale (WAIS), and symptoms checklist 90-revised(SCL-90-R).

Results : Patients with PNES had severe impairments in all performed tasks compared to control and GGE groups ($p < 0.01$), whereas GGE patients had significantly lower attention quotient versus healthy subjects ($p < 0.01$). The full-scale attention quotient and full-scale (FSAQ) response control quotient (FSRCQ) in PNES patients were significantly lower in comparison with GGE (47.83 ± 32.68, 60.18 ± 35.35, $p < 0.01$) respectively. Multiple regression analysis did not demonstrate any significant effect of seizure frequency or epilepsy duration on attention and inhibitory control deficits, but patient's intelligent quotient showed a significant effect on FSAQ and FSRCQ (?: 0.997, $p < 0.001$; ?: 0.933, $p < 0.001$ respectively).

Conclusion : Attention and inhibitory control, are significantly impaired in GGE and PNES patients. Finding the cognitive basics and deficits in GGE and PNES patients have potentially important clinical implications in planning neuropsychological rehabilitation for mentioned patients.

Keywords : Attention and inhibitory control deficit; Genetic generalized epilepsy; Psychogenic non-epileptic seizure; frontal cognitive function

Count: 438
Abstract ID: 419
subject: Neural Injuries and Neurodegenerative Disorders: Other
Presentation Type: Poster

Acute buprenorphine treatment and PGC-1α gene expression during methamphetamine addiction in male rat

Submission Author: Mobina Roshanaei mellat

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Background and Aim : Methamphetamine dependence (addiction) is a serious problem. Oxidative stress has shown to be a promising lead in explaining, at a cellular level, the harmful effects of MA abuse. Buprenorphine is a semisynthetic opioid derived from thebaine, a naturally occurring alkaloid of the opium poppy, Papaver somniferum Buprenorphine is a partial mu receptor agonist originally developed as analgesic but its potential utility for the management of opioid dependence has been discussed since early the 1970. PGC-1a is a transcriptional co-activator that can be induced by oxidative stress and coordinates the expression of multiple antioxidant programs. The primary aim of this study was therefore to investigate the alteration of PGC-1α gene following methamphetamine addiction in male rats that were under treatment of buprenorphine.

Methods : 49 male Wistar rats were randomly assigned into seven experimental groups (n=7): Control, Saline, Methamphetamine (10 mg/kg, i.p. for 5 days), Buprenorphine (6 and 10 mg/kg, i.p.), Methamphetamine + Buprenorphine (6 and 10 mg/kg for 5 days). Brain stem tissue was assayed for the expression of P2X4 receptor gene using RT- PCR.

Results : amphetamine administration significantly decreased the level of PGC-1a gene in comparison to control group but it was not significant. The expression of PGC-1a gene did not change after the buprenorphine (6 and 10 mg/kg) administration in comparison to control group.

Conclusion : : methamphetamine toxicity influenced mitochondria function by changing the level of PGC-1a gene expression. It seems mitochondria biogenesis gene play a role in methamphetamine toxicity.

Keywords : Buprenorphine, Amphetamine, P2X4 receptor gene

Count: 439
Abstract ID: 378
subject: Computational Neuroscience: Computational Tools
Presentation Type: Oral

Investigation of the Effect of Attention in BCI systems based on Steady_State Visually Evoked Potential.

Submission Author: Elham Rostami

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Background and Aim : As Brain-Computer Interface (BCI) systems play an important role in improving the life quality of disabled people, designing reliable and applicable BCI systems is of great interest for neuroscientists. This research studies the effect of attention in BCI systems based on Steady-State Visually Evoked Potentials (SSVEP) . Brain-Computer Interface systems make a communication pathway between human and computer. One type of stimulus which is used in BCI systems is Repetitive Visual Stimulus (RVS). When an RVS is presented to the individuals, a Steady-State Visual Evoked Potential (SSVEP) would be elicited in their EEG signals. There are different methods for designing an SSVEP-based BCI system. In some methods the users must focus on the flickering stimulus while in others the main attention of the users is on another mental task and the flickering stimulus is not their main focus. In this paper, the role of attention in SSVEP detection is studied.

Methods : A 23 years old woman (right-handed) without any neurological disease participated in this research. Two flickering stimuli at 10 Hz (alpha band) and 14 Hz (beta band) were utilized. The experiment had two parts. In the first part (attention condition) the participant was asked to entirely focus on the flickering stimulus. In the second part (inattention condition) she was asked to count numbers down from 9 to 0. The 32 channel EEG signal was recorded during these tasks. After preprocessing the signal power was calculated in two ranges of 9.8 to 10.2 and 13.8 to 14.2 for each stimulus. As the parametric condition was not satisfied, the Wilcoxon test was used to compare the two conditions.

Results : The signal power in attention condition was significantly higher than inattention condition (P-value < 0.01). The power of alpha band in attention condition was significantly higher than inattention condition. Also, the power of beta band in attention condition was significantly more than inattention condition. Studying the different parts of brain indicated that the power in posterior regions near to visual cortex was significantly higher than anterior areas (P-value<0.01).

Conclusion : : The results indicated an increased signal power in attention condition. Moreover, power in posterior regions is more than anterior regions which is in accordance with the fact that brain visual cortex is placed in posterior parts of the brain and the visual stimulus may activate those regions more than the other parts.

Keywords : : Brain Computer Interface (BCI), Electroencephalogram (EEG) Signal, Steady State Visually Evoked Potential (SSVEP), Biological Signal Processing, Attention.

Pain perception can dampen in the icv-STZ rat model of sporadic Alzheimer disease

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Background and Aim : Age is known as the main risk factor of sporadic Alzheimer's disease (sAD). Pain management in AD is a critical health condition. However, behavioral display and verbal reports of pain could be dampened or exaggerated in AD patients. The icv-STZ (Intracerebroventricular streptozotocin injections) rat model of sAD has been foregrounded as a hopefully suitable model that could mimic some features of sporadic AD. However, there is no empirical research evaluating the long-term icv-STZ effect on rat behaviors post pain induction which is the aim of this investigation.

Methods : 84 adult male Wistar rats weighing 280-330 g (Department of Biology, University of Mashhad, Iran) were used in this study. Icv-STZ or its vehicle (saline) was administered into the right side of lateral ventricles of animals. Using formalin and tail-flick tests, we were seeking if icv-STZ injection (3mg/Kg) could affect neurogenic and inflammatory pain sensation along with the thermal threshold and edema volume of animals over time. Behavioral responses were observed at three testing times (1, 2.5, and 3-month post-injection).

Results : Differences were assessed using repeated measures ANOVA followed by the Bonferroni test. Icv-STZ could not induce any significant change in the early (neurogenic) phase of the formalin test over time. Formalin- induced animal's pain score dramatically decreased one-month post-injection and last even after the third month. On the other hand, STZ-treated animals had normal thermal thresholds and edema volume (inflammation) over time which is aligned with the results acquired from the formalin test.

Conclusion : Icv-STZ could impair brain pathways relaying inflammatory pain-related responses in male rats over time. AD-like pathology induced by icv-STZ could at least partially activate inflammatory pain processing pathways, a suggestion that needs more investigation. Upon the results of such studies, anti-inflammatory agents could be proposed to adjust pain perception in sAD patients.

Keywords : pain, formalin, tail-flick, icv-STZ, Alzheimer's, rat

Count: 441
Abstract ID: 343
subject: Neuropsychiatry and Psychology: Evidence-Based Psychology
Presentation Type: Poster

The relationship between anxiety and quality of life and reproductive health of women

Submission Author: Soheila Rostami

Soheila Rostami[1]

1. Author

Background and Aim : The purpose of this study is to investigate the relationship between quality of life anxiety and women's fertility.

Methods : This is a correlational descriptive study. 100 women were married and had a child with reproductive history and were selected by available sampling method. The instruments used in this study included the Catholic Anxiety Inventory (CAQ) and Quality of Life-26 items (WHOQOL) and reproductive health questionnaires in an interview. The statistical model of Pearson's Pearson correlation method is used.

Results : The results showed that there is a significant relationship between anxiety ($? = 0.05$) and quality of life ($? = 0.01$) and female fertility. There is a significant difference between the mean of physical and environmental health of married women ($? = 0.01$), but there is no significant difference in psychological health and social relationships.

Conclusion : The findings of the study showed that psychological factors such as anxiety in the quality of life and their fertility are effective.

Keywords : Anxiety, Quality of Life, Reproductive Health.

Count: 442
Abstract ID: 370
subject: Neuropsychiatry and Psychology: Addiction (Drug, Alcohol, Internet, Food) and Gambling
Presentation Type: Poster

Event relate potential evidence in internet addiction disorders, a systematic review

Submission Author: Farzad Rostami Ghahfarokhi

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Background and Aim : Internet addiction disorder (IAD) is defined as excessive usage of internet leading to significant psychological, social, and/or work difficulties. It is well known that IAD is related to various comorbid psychological conditions, such as depressed mood and anxiety, as well as psychiatric disorders, including attention deficit hyperactivity disorder and obsessive-compulsive disorder. The purpose of this study was to identify the most significant Event Relate Potential (ERP) components of people with Internet addiction to better understand the neuroimaging markers of the disorder. Identification of the neuroimaging markers of the Internet addiction may lead to clarification of its etiology.

Methods : Scopus, Google scholar and PubMed databases were used for literature review. The keywords included "Internet Addiction", ERP, Task and "Problematic Internet Use". Seventy-seven papers which are written in English and have been published since 2010 are reviewed. Articles were categorized according to the ERP tasks and ERP components.

Results : From seventy-seven studies fifty-five of them were excluded from the study due to: thirty-four of them were Internet Gaming Disorder. Five of them didn't include any ERP tasks. Two of them investigated online shopping addiction, two studies had therapeutic intervention. Five studies were explored smartphone abuse (non-internet addicts). Two of them were fMRI studies and five studies only had behavioral tasks and no imaging techniques were used. At the end, twenty-two studies remained for further analysis.

Conclusion : According to the statistical significance of the remaining papers, N2 and P300 amplitudes are significantly different between IAD subjects and healthy controls. Also, the most applied task which demonstrates significant alteration in these amplitudes was Go/NoGo decision making task. In conclusion, N2 and P300 alterations could be considered as two endophenotypes associated with internet addiction disorder.

Keywords : Internet Addiction, ERP, Task, Problematic Internet Use

Count: 443
Abstract ID: 32
subject: Neural Injuries and Neurodegenerative Disorders: Spinal Cord Injury
Presentation Type: Poster

Correlation between demographic characteristics, Spinal Impairment Scale and interventional strategies in clinical outcome of spinal cord injury patients

Submission Author: Ayoob Rostamzadeh

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Background and Aim : The aim of the present study was to investigate the main causes of traumatic spinal cord injury (TSCI) and the relationship between patients' demographic characteristics and the related treatments.

Methods : In this cross-sectional study 608 patients suffering from TSCI referring to Ayatollah Kashani Hospital, Shahrekord in 2016-2017 were enrolled. This research was approved in the form of a research project at Shahrekord University of Medical Sciences with the code of ethics IR.SKUMS.REC.1396.132. Patients' demographic characteristics, level of injury, severity of injury (ASIA scale), injury cause, and duration of hospitalization (DOH) by referring to the patient's files and medical records. Several months after discharge, the patients were examined by a neurosurgeon and the treatment outcome was recorded in specific checklists. Data were analyzed by SPSS software and significant level was considered at $P<0.05$.

Results : The mean age of the injured individuals was 34.2 ± 16.9 years. The majority of the injured (70.2%) were male. ASIA grades E and D were also reported in 50.3% and 25% of the injured during hospital admission, respectively. Grade E injury was also observed among 77.1% of the injured during discharge. Drug, non-surgical, and surgical treatments were used for 53.8%, 25.8%, and 20.4% of the patients, respectively. The level of injury, treatment strategy, and clinical outcome were significantly different based on the ASIA grades during admission ($P<0.05$). There was a significant difference between DOH (day) concerning the level of injury, ASIA grades during admission, and the treatment strategy in different individuals ($P<0.05$).

Conclusion : Regarding the relationship between the treatment strategy, the ASIA grade and the outcome of the treatment, it seems necessary to perform surgical or rehabilitation interventions for each person in accordance with demographic characteristics. Regarding the high prevalence of vertebral column and spinal cord traumas in the province due to traffic accidents, as well as the relationship between the injury level and severity with the treatment outcome, the most important issues that should be addressed in order to reduce irreparable SCIs is as follows: taking preventive measures to reduce road accidents, providing more safety for passengers. It is also necessary to design more precise rules and regulations for work

environments and residential facilities to reduce the occurrence of these incidents. Establishment of a TSCI register system would facilitate the provision of a national database for epidemiological and research purposes, which would be useful for advancing the prevention and treatment of TSCI. Promotion of a comprehensive trauma center in all cities and also increasing the number of experts in the trauma centers such as rehabilitation personnel; i.e. occupational therapist, interventional radiologist, nurse, physiotherapist, psychiatrist and so forth.

Keywords : Trauma, Spinal cord injury, Interventional strategies, ASIA scale.

Count: 444
Abstract ID: 41
subject: Emotion, Motivation
and Behavior: Motivation and Emotion
Presentation Type: Poster

Short-term plasticity in the dentate gyrus granule cells by the activation of β-Adrenergic receptors of the Basolateral Amygdala.

Submission Author: Motahareh Rouhi Ardeshiri

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Background and Aim : Adrenergic system of the basolateral amygdala (BLA), is the main system of the brain involved in the modulating of the synaptic plasticity process through the dentate gyrus. Therefore, in this study the molecular basis of the adrenergic receptors of the BLA involvements during the short term plasticity in the dentate gyrus were investigated.

Methods : The rats were injected bilaterally into the BLA, a selective beta receptor agonist, clenbuterol (15 ng/0.5μl), then the paired-pulse responses were recorded. Control rats were infused by saline at the same volume.

Results : Our data indicated that the infusion of clenbuterol at 15 ng/0.5?l into the BLA area could affect short-term plasticity in the dentate gyrus (DG) region measured by paired-pulse (PP) stimulations at the long term inter pulse intervals.

Conclusion : Thus, adrenergic system of the BLA might engage the short term plasticity via a postsynaptic mechanism.

Keywords : Adrenergic receptors; Basolateral amygdala; short-term plasticity; local circuits.

Count: 445
Abstract ID: 7
subject: Motor Systems
and Movement Disorders: Movement Disorders (Parkinson, Huntington's, ALS, Ataxia, edication-induced Movement Disorders)
Presentation Type: Poster

Interaction effects of intra-hippocampal injection of citalopram with steroidal hormones on motor memory behavior in the male Wistar rats

Submission Author: Nazanin zahra Rouzkhosh

Nazanin zahra Rouzkhosh[1], Dr Homayoun Khazali[2], Dr Abdolkarim Hosseini[3], Dr Vahid Azizi[4]

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Background and Aim : Citalopram, RS-citalopram, is an antidepressant drug from the group of serotonin reuptake inhibitors that is used to treat mood disorders and to treat severe depression disorders. In addition to having significant effects on the treatment of depression, memory is also slightly affected, but still paths It is not known The purpose of the present study was to investigate the interaction of intra-hippocampal injection of citalopram and steroid humans, including estrogen and progesterone on equilibrium memory.

Methods : The effect of RS-citalopram on hysterectomy of male Wistar rats was evaluated using stereotaxis Surgery to study the memory process. Then, using equilibrium memory rotarod, the data were analyzed by SPSS software and tukey post hoc test.

Results : The results of this study showed that citalopram significantly increased the balance of memory in male Wistar rats compared to the control group. But when combined with steroid hormones, it causes the loss of balance.

Conclusion : Intra-hippocampal injection of citalopram has been shown to increase memory and learning in the mice receiving the drug. On the other hand, citalopram when accompanied by steroid hormones, reduces memory and suggests that citalopram interferes with the pathway of steroid hormones.

Keywords : Memory, Hippocampus, Male Rats, Escitalopram

Count: 446
Abstract ID: 449
subject: Neural Injuries and Neurodegenerative Disorders: Neurodegenerative Disorders
Presentation Type: Poster

Multiple Sclerosis and Diabetes-Hitting two birds with one stone

Submission Author: Sima Sabbagh

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Background and Aim : An autoimmune disease is a condition where your immune system mistakenly attacks your healthy cells and tissues, which both genetic and environmental factors are being noted as the etiology.

Methods : Sometimes common causes lead to Simultaneous incidence of two of these diseases such as Multiple sclerosis (MS) and type 1 Diabetes Mellitus (T1D) that are among the most prevalent ones which both have dramatic effect on patient's life. Although they considered as multifactorial diseases, but it's believed that they can be managed genetically. In this regard, if we aim the common causes, we would be able to hit these two birds with one stone!

Results : In this regard, it is essential to notice the main responsible genes for each disease and overlaps in the molecular pathways. Basis for co-localization of loci between MS and T1D can be due to three cases: 1) the same allele of the same gene, 2) different alleles of the same gene, or 3) various members of a tightly linked complex of functionally related genes. Several research have been done to identify common genetic candidates and susceptibility loci. The summary of results indicates single nucleotide polymorphisms (SNPs) in CD226 gene and CLEC16A that are unequivocally associated with T1D also revealed evidence for associations with MS. In addition other non-HLA genes are shown to have associated with the risk of MS and T1D which include IL2RA and IL7RA.

Conclusion : On the other hand, these studies are not sufficient to reach a strong conclusion. Although there is so much to investigate, the light is noticeable at the end of this tunnel.

Keywords : Multiple Sclerosis; Diabetes Mellitus, Type 1; Autoimmune Diseases

Count: 447

Abstract ID: 473

subject: Neurorehabilitation and Regeneration: Other

Presentation Type: Poster

Megalencephalic Leukoencephalopathy with Subcortical Cysts: A Case Report

Submission Author: Reihane Sabermoghadam

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Background and Aim : Megalencephalic leukoencephalopathy with subcortical cysts (MLC), which is known as Van Der Knaap's disease is a rare autosomal recessive neurodegenerative disorder. Macrocephaly is one of the most common and earliest clinical characteristics of the MLC during infancy that is often coexisted with seizure, slowly progressive clinical course marked by the motor developmental delay with gradual onset of ataxia and spasticity, and usually the late onset of mental deterioration. Brain magnetic resonance imaging (MRI) shows predominant white matter involvement with the subcortical cyst. MLC is caused by a mutation in the gene MLC1. The age of presentation varied from birth to 27 years. So far, all attempts to treat Van der Knaap syndrome have been failed. The mainstay of treatment is supportive in the form of acetazolamide, anticonvulsants, and rehabilitation. We report a 5-years-old boy megalencephalic leukoencephalopathy with subcortical cysts.

Methods : Case presentation: A 5-years-old boy presented with macrocephaly and progressive weakness from the birth in the whole body with spasticity and ataxia. He also had poor mental status and cognitive impairment. On genetic assessments, we found a homozygous pathogenic variant in intron 5 of the MLC1 gene. Brain MRI showed bilateral symmetrical white matter hyper intention on T2/FLAIR and hypointensity on T1 with cystic changes as well as CSF intensity in subcortical of the frontal and occipital lobe. Due to the patient's progressive motor decline, we measured gross and oral motor functions. Gross and oral motor functions were assessed using Gross Motor Function Measurement (GMFM) and Oral Motor Assessment Scale (OMAS), respectively. The result of GMFM and OMAS tests were level 5 and grade 7 for him. The patient was treated by a supportive approach including occupational therapy (cognitive and physical) and speech therapy.

Results : .

Conclusion : MLC1 should be considered in children with macrocephaly and slowly progressive motor decline. This disease can be prenatally diagnosed by parental testing for detected variant and genetic counselling offered for future pregnancies. Early rehabilitation interventions have been necessary to improve the patient's symptoms. Future studies are needed to determine the pathophysiologic mechanisms affected during disease, and strategies and approaches for treating MLC1 patients.

Keywords : : Megalencephalic leukoencephalopathy, neurorehabilitation, subcortical cyst, Van Der Knaap syndrome

Count: 448
Abstract ID: 52
subject: Special topics: Public Awareness
Presentation Type: Poster

Tc99m-ECD Brain SPECT value for evaluation of Shibafa Qigong meditation and its therapeutic effects on patients with different brain disease

Submission Author: Fariba Saddadi

Fariba Saddadi[1], Rea shokouhizadeh[2]

1. nuclear medicine specialist as consultant physician
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Background and Aim : Qigong practice is known as moving meditation with deep breathing and some gentle exercise which shows it is good for mental and body health .There are many different qigong exercise and we consider the shibafa series one for our patients and decide to evaluate this exercise meditation effect on brain disease by using functional imaging modality of brain SPECT imaging.

Methods : 32 patients 20 male and 12 female with age range 15-80 years old were enrolled at this study and patients had different brain disease like 4 depression, 10 dementia,8 unknown tinnitus , 2 Parkinson, 4 CVA,1 OCD, 3 head trauma. And the most important criteria for this study was cooperation of patients to perform shibafa qigong exercise and meditation. Two series of Tc99m -ECD brain SPECT were performed for each patients as standard protocols, first as a basal scan and second images was obtained after practicing shibafa qigong meditation during 0.5-1 hours, and this scan was performed as the same as the first image with the same conditions. Both series of brain SPECT were evaluated for any reduction of tracer uptake in right and left side for all brain cortical lobes (frontal-parietal-temporal- occipital) and basal ganglia as well. The ROI also were drawn for any brain lobes and basal ganglia to find quantitatively the mean perfusion brain ratio and a comparison study between pre- and post- gigong exercise meditation was obtained.

Results : The results simply shows that the mean cortical perfusion defect ratio in pre –qigong was 0.62 which after shibafa qigong exercise meditation it improved as mean 0.89. It means that there is an improvement of 6-9 % for increasing brain cortex perfusion after qigong exercise even during a limited time of meditation.

Conclusion : That is interesting to know that subjectively all patients claim better brain function and almost all were satisfied with this meditation excercise. Shibafa qigong makes a better function and perfusion of brain and helps patients to reset her brain mechanism of thinking and cognition and brain SPECT is a good imaging modality to confirm the treatment response.

Keywords : shibafa,qigong, brain SPECT

Count: 449
Abstract ID: 648
subject: Cognition: Working Memory
Presentation Type: Poster

The effect of sculpture-based art therapy in improving aggression and autonomic nervous system in children with developmental neuropsychiatric disorder

Submission Author: SAREH SADEGHI NAISIANI

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Background and Aim : Autistic is one of the most severe types of childhood disorders that is characterized by severe deficiencies and multiple pervasive developmental disorders, which include impaired social interaction and communication, and the presence of behaviors, interests, and stereotyped behaviors. The effect of sculpture-based art therapy was on reducing aggressive behaviors in people with autistic disorder and investigating the effect of this therapy on autonomic nervous system activity

Methods : The method of this study is case study. Using available sampling method, the sample members were 4 children with autism with aggressive behavior. First, by filling out the Relative Aggression Questionnaire and explicit children questionnaire of Dr. Sima Shahim (Cronbach's alpha 0.78) by parents, the baseline was drawn and then the treatment was given for 10 sessions and 30 minutes (2 sessions per session). Week) performed by sample members. Aggressive behavior was recorded by the data sheet during the presentation of the independent variable. Before and after treatment, heart rate was measured in patients with autism disorder. At the end of treatment sessions, aggressive behavior of people with autism disorder was assessed again by a child aggressive and relational aggression questionnaire

Results : The findings showed that aggressive behavior of all 4 subjects was reduced in evaluations of therapeutic sessions, and the decrease in heart rate at the end of therapeutic sessions showed the effect of this treatment on sympathetic nervous system as a branch of autonomic nervous system

Conclusion : According to the findings, it can be stated that sculpture-based art therapy by affecting the sympathetic nervous system reduces aggressive behavior of people with autism disorder

Keywords : Sculpture-based art therapy, aggression, autonomic nervous system, neurodevelopmental disorder (autistic

Count: 450
Abstract ID: 282
subject: Neural Injuries and Neurodegenerative Disorders: Neurodegenerative Disorders
Presentation Type: Poster

Stereological analysis of hippocampus in rat treated with chemotherapeutic agent oxaliplatin

Submission Author: Javad Sadeghinezhad

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Background and Aim : Oxaliplatin (OX) has been widely used for treatment of colorectal and other cancers. Adverse effect of OX and other anticancer agents on cognition have been reported, but studies on the effects of chemotherapy on brain structure are scarce. This study describes the morphometrical features of the hippocampus structures in rat following OX treatment using design-based stereological methods.

Methods : Ten male Wistar rats were randomized into two groups. The rats from OX group received 2.4 mg/kg OX in vehicle for five consecutive days every week for 2 weeks intraperitoneally (IP). Controls received vehicle only. Cavalieri 's method and the optical fractionator method were used for volume and neuron estimation, respectively.

Results : Cavalieri 's method was used for to estimate volume and showed that the volume of the hippocampus was significantly decreased in OX group (31.84 ± 1.24 mm3) compared with the vehicle control group (36.95 ± 3.48 mm3). The optical fractionator method was used to estimate neuron number and showed that the number of neurons in DG, CA1 and CA3 in OX group ($8.147 \pm 2.84 \times 105$, $4.257 \pm 0.59 \times 105$ and $2.133 \pm 0.22 \times 105$, respectively) did not differ from those of vehicle control group ($7.36 \pm 1.42 \times 105$, $3.521 \pm 0.54 \times 105$ and $1.989 \pm 0.46 \times 105$, respectively).

Conclusion : These findings suggested that OX treatment induce loss of hippocampal volume without neuronal loss which might help to clarify the mechanism by which OX affects cognition and to improve preventive treatment strategies.

Keywords : Stereology; Hippocampus; Oxaliplatin; Chemotherapy; Rat

Count: 451
Abstract ID: 269
subject: Computational Neuroscience: Other
Presentation Type: Oral

Volumetric study of the guinea pig (Cavia porcellus) cerebellum using Design-based stereology

Submission Author: Javad Sadeghinezhad

Javad Sadeghinezhad[1], Margherita De Silva[2], Mahdi Aghabalazadeh Asl[3], Ava Saeidi[4], Nadia De Sordi[5], Roberto Chiocchetti[6], Annamaria Grandis[7]

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Background and Aim : The involvement of the cerebellum in motor coordination has been long and widely recognized; however, a growing body of evidence involving neuroanatomical and clinical studies indicates that it plays a significant role in non-motor behavioral-affective and cognitive functions. Most stereological investigations on the cerebellum involving laboratory animals have been carried out on mice and rats; however, the morphometric features of the normal cerebellum in adult guinea pigs have not been previously investigated using stereology. Guinea pigs have proved useful as experimental animal models in studying cerebellar anatomical and structural alterations in human neurological disease, due to several similarities shared between the two species. Recently, however, increasing interest has been addressed toward the clinical features, pathological changes and therapeutic resolution of neurological disorders of guinea pigs held as pet animals. Several infectious diseases such as lymphocitic choriomeningitis virus (LCMV) and Toxoplasma gondii, for instance, have been described to cause predominant involvement of the cerebellum. The objective of the present work was to establish normal volumetric and quantitative stereological parameters for cerebellar tissues in adult guinea pigs, by means of unbiased design-based stereology. Specifically, the present study was designed to estimate cerebellar total volume, grey and white matter, molecular and granular layers volume fractions, and cerebellar surface area in the guinea pig.

Methods : Cerebella from six adult male guinea pigs were excised and divided into the two hemispheres. Each half was randomly chosen, weighed, routinely processed for light microscopic examination and subsequently embedded in paraffin. Isotropic, uniform random sections were obtained by applying the orientator method. Sections were stained with Cresyl violet 0.1 %. A slide scanner was employed for capturing images from sections in order to enable the estimation of cerebellar total volume, white matter (WM) and gray matter (GM) volume fractions, molecular and granular layers fractional volumes using Cavalieri 's principle and the point counting system.

Results : The total volume of a guinea pigs cerebellar hemisphere was 0.11±0.01 cm3. The mean relative volume fractions of the GM and WM were 78±2.6% and 22±2.6%, while their mean total volumes were found to be 0.21±0.02 cm3 and 0.059±0.006 cm3, respectively. The volumes of the molecular and granular layers were estimated to be 112.41±20.5 mm3 and 104.3±7.3 mm3, while their mean thickness was calculated to be 0.184±0.02 mm and 0.17±0.01 mm, respectively.

Conclusion : The morphometric data emerging from the present study may provide an accurate set of reference data potentially valuable as basic anatomical contribution to the field of veterinary neurology when examining pathological changes in response to neurological disease, and may also find a use as an animal anatomical model for comparison with human cases.

Keywords : Guinea Pig; Cavia porcellus; cerebellum; stereology; neurology

Count: 452
Abstract ID: 236
subject: Neural Injuries and Neurodegenerative Disorders: Ischemia, Stroke, and Neurovascular Disorders
Presentation Type: Oral

Everolimus attenuated ischemic injury caused by middle cerebral artery obstruction in rat

Submission Author: Hamid Reza Sadeghnia

Hamid Reza Sadeghnia[1], Fatemeh Forouzanfar[2], Payam Ebrahimi Razavi[3], Mohaddaseh Sadat Alavi[4], Sahar Fanoudi[5]

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Background and Aim : Evaluation of the effects of everolimus (a potent and selective inhibitor of mammalian target of rapamycin, mTOR) on the neuronal damage due to middle cerebral artery (MCA) occlusion, as a focal cerebral ischemia model in rat.

Methods : Rats were randomly divided into 4 groups; each contains 8 rats. In the sham group, surgery was performed without ischemia induction. In the control group, ischemia-reperfusion injury was induced by transient ligation of the middle cerebral artery for 30 min, followed by reperfusion for 24 hours (MCAO). In the treatment groups, Everolimus (1 mg/kg and 5 mg/kg) was administrated at the time of reperfusion, intraperitoneally. After that, the neurologic function was evaluated using rotarod apparatus. The extent of the ischemic region, histologic changes, and the level of oxidative stress were assessed using TTC, H & E staining methods and levels of hippocampal glutathione or lipid peroxidation, respectively.

Results : MCA obstruction leads to regional ischemia and also significant increase in the oxidative markers, as compared with sham group ($p < 0.001$). Everolimus significantly reduced the infarction volume, cellular injury and lipid peroxides ($p < 0.01$ and $p < 0.001$, respectively) and also significantly increased the latency on rod ($p < 0.001$) and tissue glutathione level ($p < 0.05$).

Conclusion : Everolimus dose-dependently protected against cerebral ischemia-reperfusion injury induced by MCAO, by means of attenuating oxidative stress.

Keywords : Everolimus, Mammalian target of rapamycin (mTOR), Middle cerebral artery occlusion (MCAO), Cerebral ischemia-reperfusion injury, Oxidative stress

Count: 453
Abstract ID: 433
subject: Emotion, Motivation
and Behavior: Motivation and Emotion
Presentation Type: Poster

Protective Effects of Enriched Environment Against Transient Cerebral Ischemia-Induced Impairment of Passive Avoidance Memory and Long-Term Potentiation in Rats

Submission Author: Jafar Sadeghzadeh

Jafar Sadeghzadeh[1], Ali ahmadalipour[2], Maryam sadeghzadeh[3], jaber jafarzadeh[4], soroush afshari[5]

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Background and Aim : schemic stroke is one of the main causes of long lasting neurological defects, emotional, and memory dysfunction. One mechanism possibly contributing to learning and memo¬ry deficits is impairment in the hippocampal Long-Term Potentiation (LTP). LTP is facilitated by exposure to Enriched Environment (EE) or exercise. Among others, EE has been shown to impact the development of the nervous system. How¬ever, it is still unclear whether adolescent exposure to EE can be used as an efficient preventive strategy against LTP function impairment associated with global hypo¬perfusion. Thus, the present study aimed to evaluate the protective effects of EE in adolescent period against the impairment of passive avoidance memory and LTP in¬duced by transient cerebral ischemia in adult male rats.

Methods : Male Wistar (n=30) rats and housed in Standard Environment. The EE group was located in a large polycar¬bonate containing a running wheel, a raised platform, a group of plastic tunnels, steel chains, dissimilar size plastic balls and dolls changed every 5-6 days. The SE group was housed in normal Plexiglas cages. Rats were dispersed into 3 experimental groups: 1. The SHAM/ SE group: those animals which raised in SE and had the bilateral common carotid arteries exposed but received no additional manipulation; 2. The STR/SE group: those animals which raised in SE and had the bilateral com¬mon carotid arteries exposed and induced transient 2VO occlusion for 30 min; and 3. The STR/EE group: those animals which raised in EE and had transient 2 Vessel Occlusion (2VO) for 30 min. For analysis of the passive avoidance data, 1-way ANOVA with the Tukey post hoc test and mann Whitney U-test was used.

Results : post hoc analysis revealed that transient cerebral ischemia significantly decreased STL in the STR/SE group than the SHAM/SE group. In addition, increased STL in the STR/ EE group than the STR/SE group and, increased TDC in the STR/SE group compared with SHAM/SE group. also, increased TDC in the STR/EE group compared to STR/SE group. there were significant differences in stimulus-response curves in the DG measured as PS amplitude between the STR/SE group and the SHAM/SE group in high intensities. There was no significant difference in stimulus-response curves in the DG measured as EPSP slopes. In the STR/SE group, tetanus HFS stimulation resulted a increase in the PS amplitude in the SHAM/SE group and increase was also induced after HFS in the STR/EE. a significant decrease in the PS amplitude of the SHAM/SE group than the STR/SE group. Tetanus HFS had no significant effect on

EPSP slope recorded from the DG area of hippocampus in the STR/ ST group compared to sham control rats, but there were significant differences in the STR/EE rats compared to STR/SE rats in 60, 75, and 90 min.

Conclusion : Our results suggest that early housing and growing in EE exhibits therapeutic potential to normalize cognitive and LTP abnormalities induced by 2VO ischemic model in rats.

Keywords : Enriched Environment ;Long-Term Potentiation ;Ischemia-Induced

Count: 454
Abstract ID: 230
subject: Novel and Cutting-Edge Technologies: Molecular, Biochemical, and Genetic Techniques & Gene . Therapy
Presentation Type: Oral

Long-term ethanol consumption increase changes in β-defensin isoform gene expression and oxidativ DNA damage to the epididymis structural of rats

Submission Author: Maryam Sadeghzadeh

Maryam Sadeghzadeh[1], Alireza Shirpoor1,2[2], Soroush afshari[3]

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Background and Aim : Among different parts of the male reproductive system, the epididymis plays an important role in sperm Process. during epididymal transit, sperms are protected against autoimmunity and harmful bacteria by proteins secreted from epididymal epithelial cells. the β-defensin family is a group of proteins secreted from the epididymal epithelium. these proteins contribute to sperm maturation and antimicrobial defense of the epididymis duct in the reproductive system. furthermore β-defensin proteins play a fundamental role in the modulation of sperm function and maturation during spermatozoa transition through the epididymis duct. only a few comprehensive studies have been carried out on the effects of ethanol consumption on the epididymis function. therefore, in the current study, we evaluated the possible adverse effects of ethanol on the caput segment of epididymis tissue of male rats at molecular levels after chronic ethanol exposure. we proposed that chronic ethanol consumption, resulting in sperm abnormalities, is partly mediated by the gene expression transition of β-defensin isoforms.

Methods : 16 male Wistar rats (four months old) after 1 week of acclimatization, were randomly divided into two experimental groups (n = 8) of control and ethanol. The ethanol group received 4.5 g/kg BW of ethanol mixed in tap water (20% w/v) intragastrically by gavage once a day for 6 weeks. The mean body weight was measured weekly from the beginning to the end of the study to recalculate the dose of ethanol. the control rats received an equal volume of tap water. The frozen right epididymis was used for total RNA extraction to evaluate the gene expression of β-defensin isoforms. DNA oxidase content of the epididymis tissue was measured by quantitative (ELISA), using a commercial rat for NADPH Oxidase.

Results : In the current study, after 6 weeks of ethanol consumption, the level of DNA oxidase increased significantly in the ethanol group (p < 0.01), compared with the control group, which produces reactive oxygen species (ROS) in epididymis tissues, was higher in the ethanol group, compared with the controls. Ethanol administration significantly increased the mRNA expression of epididymal ?-defensin isoforms 15 and 21 (p < 0.01), in the ethanol group compared with the controls.

Conclusion : the results of our study showed a significant increase in the mRNA expression of β-defensins 15 and 21 in the mRNA expression of β-defensins in the ethanol group, compared with the control group. The results of the present study demonstrated that long-term ethanol consumption could induce structural changes in the epididymis, associated with increased oxidative DNA damage, and alterations in the gene expression of β-defensin isoforms. our findings present a new perspective on ethanol-induced epididymal damage. however, further research is still required to elucidate this findingIn addition

Keywords : ethanol, β-defensin, epididymis

Count: 455
Abstract ID: 288
subject: Emotion, Motivation
and Behavior: Stress and the Brain (Stress-modulated Pathways, Stress and Cognition, Stress Related
Disorders)
Presentation Type: Oral

The Comparison of stress, coping styles and social support in patients with Chronic Tension Type Headache and Normal People

Submission Author: Majid Sadoughi

Majid Sadoughi[1]

1. University of Kashan

Background and Aim : Tension type headache is very frequent in the world and might be caused by various predisposing and exacerbating factors. The current study aimed to compare stress, coping styles, and social support in patients with Chronic Tension Type Headache (CTTH) and people with no headache.

Methods : In this ex post facto design study, the participants were 60 women with CTTH referring to several psychiatry and neurology clinics in Kashan and 60 women with no headache. They were matched in age, material status, and economic status and completed Paykel Major Life Event Questionnaire, Endler and Parker Coping Inventory for Stressful Situations, and Wax Social Support Scale.

Results : The results of Multivariate Analysis of Variance (MANOVA) showed that there was no significant difference between the two groups in terms of the number of stressful events. Moreover, the CTTH group had lower means for problem oriented coping strategies and perceived social support and higher means for perceived as well as stress emotional and avoidant strategies.

Conclusion : Perceived stress is one of the triggering factors of CTTH, and repetitive stress or prolonged physiological response to stressors can result in exacerbating chronic pains like CTTH. Moreover, lack of appropriate coping strategies and social support, as protective shields against stress, and the use of avoidant behaviors exacerbates the effect of stress on CTTH.The findings imply teaching stress management, improving styles for coping with stress, and enhancing social support could play a significant role in decreasing the risk of developing CTTH and exacerbating it.

Keywords : Chronic Tension Type Headache (CTTH), stress, coping style, social support

Count: 456
Abstract ID: 265
subject: Neuropsychiatry and Psychology: Anxiety Disorders and PTSD
Presentation Type: Poster

Anxiolytic effect of grape seed oil in social isolated rats.

Submission Author: Zahra Saeni

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Background and Aim : Social isolation (which is a type of stress) causes a variety of behavioral disorders such as anxious behavior. Grape (Vitis vinifera) seed oil (GSO) contains high amounts of phenolic compounds and has antioxidant and neuroprotective effects. The aim of this study is to investigate the effect of grape seed oil on anxious behavior in adult male rats exposed to chronic social isolation.

Methods : 40 Wistar rats were divided into 4 groups (each group of 10 rats) consisting of Control, GSO, Isolation and Isolation-GSO. Animals in groups Isolation and Isolation-GSO were exposed to isolation stress for 60 days. GSO also was orally administrated to rats (4ml/kg) in groups GSO and Isolation-GSO, until the end of the period. Then we assessed anxious behavior on an elevated plus maze.

Results : percentages of entries and time spent in open arm significantly decreased in the Isolation group compared with Control ($p<0.05$). GSO could significantly increase these parameters in isolated rats ($p<0.05$).

Conclusion : we concluded that GSO has anxiolytic effect in social isolated rats.

Keywords : Grape seed oil, Social isolation, Anxiety, Rat.

Count: 457
Abstract ID: 418
subject: Neural Injuries and Neurodegenerative Disorders: Other
Presentation Type: Poster

Is the level of Nuclear Respiratory Factor 1 gene expression changed in the brain stem of methamphetamine addicted rats during buprenorphine treatment?

Submission Author: Maryam Safakhoo

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Background and Aim : Methamphetamine (METH), also known as "ice" or "crystal," is an addictive pharmacologic psychostimulants with strong neurotoxic effects on the central nervous system (CNS). In recent years, dynamic disorders of mitochondria have reported to result from mitochondrial dysfunction triggered by METH. One of the key molecules of mitochondrial biogenesis is nuclear respiratory factor1 (NRF1). Buprenorphine, a semi-synthetic opioid, is a partial mu-opioid receptor agonist and kappa-opioid receptor antagonist that is approved by the US Food and Drug Administration (FDA) for use in the treatment of opioid use disorder. Little is known about the buprenorphine effects on mitochondrial biogenesis. The aim of this study was to investigate the acute and chronic effect of buprenorphine on the level of nuclear respiratory factor1 (NRF1) gene expression during methamphetamine-induced addiction in the spinal cord of male rats.

Methods : 56 male Wistar rats were randomly assigned into 8 experimental groups (n=7): Control, Saline, Methamphetamine (10 mg/kg, i.p. for 5 days), buprenorphine (6, 10 mg/kg, i.p.), methamphetamine+ buprenorphine with 2 doses for 5 days and Spontaneous methamphetamine withdrawal syndrome (72 hour later). The brain stem of spinal cord tissue were assayed for the expression of nuclear respiratory factor1 gene using by real time polymerase chain reaction method (RT- PCR).

Results : Chronic administration of methamphetamine to control group increased the nuclear respiratory factor1 gene expression in comparison to control group (p<0.05). Chronic administration of buprenorphine (10 mg/kg) for 14 days also increased the nuclear respiratory factor1 gene expression in comparison to control group (p<0.05).

Conclusion : These findings revealed that methamphetamine toxicity changed the expression pattern of NRF1 as a biomarker of mitochondrial biogenesis. Buprenorphine as a partial opioid agonist also increased the level of this biomarker. Further study is need to explain detailed mechanisms involved in these process.

Keywords : Nuclear Respiratory Factor 1, Methamphetamine, Buprenorphine

Count: 458
Abstract ID: 607
subject: Cognition: Learning and Memory
Presentation Type: Poster

The effects of policosanol on memory and learning impairment and total thiol group (TTG) in male rats with Alzheimer's disease induced by β-amyloid (1-40)

Submission Author: Samaneh Safari

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3. Neurophysiology Research Center, Hamadan University of Medical Sciences, Hamadan, Iran.

Background and Aim : Alzheimer's disease (AD) is a neurodegenerative disorder that recognized with progressive cognitive function failure which determined by accumulation of beta amyloid (Aβ) in extracellular space. Aβ stimulate kinds of active oxygene and causes oxidative stresses and apoptosis. Policosanole (PCO) is a reducing lipids complement has antioxidant and anti inflammatory activity effects. In this study the PCO effects on memory impairment were investigated in AD rats were induced with in AD rats.

Methods : In this study 60 male Wistar rats were used. The animals were divided in 6 groups (n=10): Control, Sham (Aβ Solvent, intraventricular microinjection), AD (Aβ intraventicular microinjection), Acacia Gum (50mg/kg, 8 weeks gavaged), PCO (50mg/kg, 8 weeks gavaged) and AD with PCO (50mg/kg, 8 weeks gavaged). To determine cognitive dysfunction, we evaluated memory and learning process with Barnes maze test and the novel object recognition in the experimental groups. After behavioral evaluation, serum TTG was evaluation using specified kit. data were analyzed by SPSS. Statistical significance was set at p≤0.05.

Results : The results of the Barnes test on training days showed that the elapsed time has increased to find the target hole in the AD group compared to the control group. The results of this study showed that intraventricular injection of A? caused reduces diagnostic memory. PCO causes recovery spatial memory and diagnostic memory. In addition, serum total thiol group (TTG level) in PCO group was significantly greater versus AD group.

Conclusion : Our results demonstrate that PCO has neuroprotective effects and can protect of memory with hypo lipidemic and antioxidant activity.

Keywords : Alzheimer's disease, Policosanole, memory and learning, TTG, Rat

Count: 459
Abstract ID: 277
subject: Development: Neurodevelopmental Disorder (ADHD, Autism, Learning Disorders)
Presentation Type: Poster

The Effectiveness of an Electronic Joint Attention Rehabilitation System on Communication Skills of Children with Autism Spectrum Disorder

Submission Author: Elnaz Safarzadeh mirashraf

Elnaz Safarzadeh mirashraf[1], Leila Kashani Vahid[2], Hadi Moradi Sabzevar[3]

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2. Assistant Proffessor, Islamic Azad University, Science and Research Branch
3. Associate Proffessor, University of Tehran

Background and Aim : Children with autism have problems in joint attention and communication skills. The effectiveness of an joint attention electronic rehabilitation system (using a musical lamp) was designed to help these children in practicing their communication skills.

Methods : The effectiveness of this intervention was evaluated by a semi- experimental design with pretest-posttest and a control group. 10 students in the experimental group participated in this program, and the control group did not receive any treatment. SCQ (1989) for autism was used to measure communication skills. The obtained data were analyzed using Analysis of the Covariance.

Results : The findings showed significant differences ($p < 0/5$) between the experimental and the control group in communication skills.

Conclusion : At the end, using electronic rehabilitation system for improving joint attention and communication skills was discussed. Further discussions as well as suggestions for future research are presented.

Keywords : Autism, communication skills, electronic joint attention rehabilitation system

Count: 460
Abstract ID: 488
subject: Development: Other
Presentation Type: Poster

The Effect of Embryonic Cerebrospinal Fluid on GFAP Expression of Epidermal Neural Crest Stem Cells

Submission Author: Alireza Sahebi

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Background and Aim : Embryonic cerebrospinal fluid (e-CSF) secretes from choroid plexuses into the brain ventricle. This fluid due to presence of growth factors has potential proliferative and differentiative effects. Epidermal neural crest stem cells (EPI-NCSCs) are multipotent stem cells which were located in bulge region of adult hair follicles. In this study, the effect of e-CSF on expression of GFAP marker was investigated.

Methods : e-CSF was collected from cisterna magna of embryonic 17, 18, 19 and 20 old-day Wistar rat embryos. The EPI-NCSCs was obtained from hair follicle bulge region of two-months male Wistar rat's vibrissa. These cells were cultured in medium containing α-MEM, 10% FBS and 5% CEE in presence of 1% antibiotic. Then, CSF of E17-E20 was added to the media with 10% ratio(v/v). The expression of GFAP marker was evaluated by immunocytochemistry.

Results : The results showed that E17-E20 CSF causes considerable induction of neural-like morphological changes in EPI-NCSCs comparing with controls. The results also showed the expression of GFAP marker in cells treated with e-CSF comparing to the controls.

Conclusion : The results demonstrate the differentiational influence of embryonic cerebrospinal fluid and also differentiational potential of epidermal neural crest stem cells. Our results show that e-CSF induce GFAP expression in EPI-NCSCs. Due to their high degree of inherent plasticity and their easy accessibility, EPI-NCSCs are promising candidates for cell-based therapy.

Keywords : e-CSF; EPI-NCSC; GFAP

Count: 461
Abstract ID: 615
subject: Neuropsychiatry and Psychology: Other
Presentation Type: Poster

Effects of Nostoc commune on memory impairment in global cerebral ischemia

Submission Author: Soghra Sajedi

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Background and Aim : Cerebral ischemia/reperfusion (I/R) injury is mediated by multiple mechanisms such as oxidative stress. Stroke patients exhibit cognitive and emotional changes. The extract of nostuc commune had high antioxidative activity.in this study is investigated effect of Nostoc commune on cognitive impairment indused by I/R in animal model.

Methods : Male wistar rats weighing 200-300 g were used and divided into 5 groups. Animals in I/R group were randomly divided into 3 groups including IR, N35 (35mg/Kg Nostoc Commune), N70 (70mg/Kg Nostoc Commune) .The animals were gavaged for two weeks. than, the animals were anesthetized by intraperitoneal injection of ketamine and xylzine . After excluding the skin and muscles by identifying Common carotid arteries were dissected from the vagus nerve and carotid body, both the left and right carotid arteries were selected and closed for 5 minutes by vascular clamps. Then remove the clamps for 10 minutes to continue the blood flow. Again, we blocked the carotid arteries for 5 minutes. 48 hours after I/R induction, novel object test was determined in all groups.

Results : The discrimination index were significantly decreased (P>0.001) in I/R group compared with the control group. Pretreatment with Nostoc Commune (70 mg/kg) significantly reversed the decreased discrimination index (P<0.01) as compared with the I/R group

Conclusion : Our result showed Nostoc Commune effects on memory in I/R rat.

Keywords : Nostoc commun , hypocampos, rat, memory

Count: 462
Abstract ID: 618
subject: Emotion, Motivation and Behavior: Motivation and Emotion
Presentation Type: Oral

Emotional Regulation Cognitive Strategies in Psoriasis Patients and Non-Psoriasis Individuals

Submission Author: Kobra Salami Asl

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Background and Aim : the connection between emotions and skin diseases has been known for decades. Disordered patterns of emotional regulation in skin, could intensify and maintain their situation. therefore The aim of this research was to compare the cognitive emotion regulation strategies (adaptive and maladaptive) in psoriasis patients and non-psoriasis individuals in Ahvaz city.

Methods : : The research method was casual- comprative design. The population of this study was all patients with psoriasis and all non-psoriasis individuals in Ahvaz city. By using convenience sampling method, 100 individuals (50 psoriasis patients and 50 non-psoriasis) were selected as the sample. The instrument was Emotin Regulation Questionnaire (ERQ) . Data were analyzed by using multivariate analysis of variance (MANOVA) method using SPSS19

Results : The results indicated that there was a significant difference between psoriasis patient and non-pesoriasis individuals in emotional regulation cognitive strategies (adaptive and maladaptive). Also, the psoriasis patients use the non-adaptive emotional regulation cognitive strategies more than adaptive emotional regulation cognitive strategies.

Conclusion : According to the findings of this researche, it is possible that the and emotional cognitive regulation problems are considered in increasing psoriasis, and patients with psoriasis, like other skin diseases use more the non-adaptive emotional regulation cognitive strategies. Key Words: psoriasis, adaptive emotional regulation cognitive strategies, non- adaptive emotional regulation cognitive strategies

Keywords : psoriasis, emotional regulation cognitive, non- adaptive emotional regulation cognitive strategies.

Count: 463
Abstract ID: 609
subject: Neuropsychiatry and Psychology: Other
Presentation Type: Poster

Investigate the relationship between self-efficacy and anxity sensitivity with fear of childbirth, with mediatiing rol of perceived socioal support

Submission Author: Kobra Salami Asl

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Background and Aim : The purpose of this study was to investigate the relationship between self-efficacy and anxiety sensitivity with fear of childbirth, with mediating role of perceived social support

Methods : The sample consisted of 200 pregnant women who went to therapeutic and health centers and were selected by multistage cluster sampling. The instruments which used in this study were Causes of Fear of Childbirth, Anxiety Sensitivity Index, Self-Efficacy, and Multidimensional Scale of Perceived Social Support (MSPSS). Fitness of the proposed model was examined through structural equation modeling (SEM), using IBM SPSS-19 and AMOS-21 software packages. The indirect effects were tested using the bootstrap procedure

Results : results indicated that the in this model, direct paths from anxiety to fear of childbirth and paths from perceived social support to fear of childbirth were statistically significant, but direct path from self-efficacy to fear of childbirth wasn't significant. Also, indirect paths with mediating role of social support were assessed, and all the indirect paths were significant

Conclusion : This study shows that to reduce fear of childbirth, variables like self-efficacy, anxiety sensitivity and perceived social support should be considered.

Keywords : self-efficacy, anxiety sensitivity, fear of childbirth

Count: 464
Abstract ID: 391
subject: Development: Neurogenesis and Gliogenesis
Presentation Type: Oral

Retinal Precursor-Like Cells Differentiation of Human Adipose-Derived Stem Cells by Hanging Drop Culture

Submission Author: Hossein Salehi

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Background and Aim : Retinal degenerative diseases lead to blindness due to poorly regenerative potential of the retina. Recently, cell therapy is more considered for degenerative diseases. Autologous mesenchymal stem cells derived from adipose tissue are a suitable source for this purpose.

Methods : Therefore, we conducted a stepwise efficient method to differentiate human adipose-derived stem cells (hADSCs) into retinal precursor-like cells in vitro. We compared two differentiation protocols, monolayer and hanging drop cultures.

Results : Through the defined medium and 3D hanging drop culture method, we could achieve up to 75% retinal precursor gene expression profile (PAX6, RAX, CHX10, and CRX) from hADSCs. By imitation of in vivo development, for direct conversion of stem cells into retinal cells, the suppression of theBMP, Nodal, and Wnt signaling pathways was carried out by using three small molecules. The hADSCs were primarily differentiated into anterior neuroectodermal cells by expression of OTX2, SIX3, and B-TUB III and then the differentiated cells were propelled into the retinal cells.

Conclusion : According to our data from real-time PCR, RT-PCR, immunocytochemistry, and functional assay, it seems that the hanging drop method improved retinal precursor differentiation yield which these precursor-like cells respond to glutamate neurotransmitter. Regarding the easy accessibility and immunosuppressive properties of hADSCs and more efficient hanging drop method, this study may be useful for future autologous cell therapy of retinal degenerative disorders.

Keywords : According to our data from real-time PCR, RT-PCR, immunocytochemistry, and functional assay, it seems that the hanging drop method improved retinal precursor differentiation yield which these precursor

Count: 465
Abstract ID: 101
subject: Neural Injuries and Neurodegenerative Disorders: Traumatic Brain Injury
Presentation Type: Poster

Effect of morphine on neurological and histological outcomes, brain water content, vestibulomotor function, brain edema in traumatic brain injury

Submission Author: Seyed pooria Salehi mashhad sari

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Background and Aim : TBI (traumatic brain injury) is one of the main causes of mortality and disability among young people. TBI has two events: primary injury and secondary injury. The secondary injury is the main cause of morbidity and disability after TBI. In past researchers had found that if we inject morphine and opioid-like to the body it has an analgesic effect. That shows we have opioid receptors naturally in the body. Endogenous opioids may have an important role in the pathophysiology of TBI because they release in brain injury in some regions that receive damage. Recently researches show that injection of morphine after trauma (within an hour) may decrease secondary injury. Morphine is an opioid that can decrease pain in moderate and severe pain. So in this research we are looking for these questions that: firstly, can morphine be effective in procedure of brain trauma. secondly, which dose of morphine is more effective in treatment of TBI.

Methods : For this study male wistar rats were used.The rats divided into 8 groups in this experiment: intact, sham, TBI, saline, 1 mg/kg morphine, 5 mg/kg morphine, 10 mg/kg morphine, 5 mg/kg morphine + Naloxone. We measured neurological outcomes, vestibulomotor function, behavioral tests, brain edema, and histopathological outcomes. The result showed significant increasing in neurological scores and behavioral scores within 4 times (day 0, 1, 2, 3) in 5 mg/kg morphine.

Results : There was significant difference between intact or sham groups and TBI or saline. That shows secondary injuries of TBI have some significant effects. There was some improvement in treatment with 1 mg/kg and 5 mg/kg morphine, but there was no significant difference between in 10 mg/kg morphine or 5 mg/kg morphine + naloxone and TBI or saline.

Conclusion : This study investigates the opioid receptor's roles in the secondary injury of traumatic brain injury. Evidence of this study confirms that ORs may have neuroprotective roles in TBI. In this test, some parameters were measured to check drug effects. In addition to that, another important target was finding the effective dose of the drug in TBI treatment. The result conduct that 5mg/kg morphine is the most effective dose to suppress effect of TBI among the experimental groups. The result of this study shows this drug can reduce secondary injury like brain edema, which is a similar symptom to strokes and ischemia.

Keywords : traumatic brain injury; opioid receptor; morphine

Count: 466
Abstract ID: 579
subject: Neural Injuries and Neurodegenerative Disorders: Neurodegenerative Disorders
Presentation Type: Oral

Clinical application of stem cell therapy in neurogenic bladder

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Background and Aim : Recently, stem cell (SC) therapy has been proposed as a potentially effective treatment option in neurourological disorders especially neurogenic bladder (NGB) as the most debilitating disorders. The aim of this review is evaluation the effect of SC therapy on management of NGB in four neurologic diseases including spinal cord injury (SCI), Parkinson's disease (PD), multiple sclerosis (MS) and stroke in clinical setting.

Methods : A comprehensive electronic databases searching was conducted in June 2019. All randomized or quasi clinical trials as well as observational studies that were investigated the effect of SC therapy on management of NGB were included. Cochrane appraisal risk of bias checklist and the standardized critical appraisal instrument from the JBI Meta-Analysis of Statistics, Assessment and Review Instrument (JBI-MAStARI) were used to appraise the studies.

Results : Only 27 studies among 1189 relevant publications met our inclusion criteria. Only SCs therapy was examined on SCI or MS patients, and the other neurological diseases weren't candidate for SC therapy for management of NGB in clinical setting. Phase I/II clinical trial (without control arm) were the most conducted studies, and only 4 studies were randomized controlled trial. In MS, included subjects were 49 MS patients in phase I and II open-label clinical trial and one case report. The prevalent used SCs were bone marrow mesenchymal SC. The mainly route of transplantation was lumbar puncture. There were not serious adverse events. SC therapy, improved bladder function. However, only nine studies in SCI and one in MS have used urodynamic and the others have reported improvement based on patient's satisfaction. Also the quality of these publications was low or unclear.

Conclusion : All these trials provide evidence of safety and effectiveness of MSCs on the management of NGB. However, the interpretation of studies results due to the lack of placebo controls are difficult. Double-blind placebo-controlled study with a larger number of patients are necessary.

Keywords : Stem Cell Therapy; Spinal Cord Injury; Neurogenic Bladder; systematic review

Count: 467
Abstract ID: 247
subject: Novel and Cutting-Edge Technologies: Brain Stimulation Methods   (ECT, rTMS, TDCS, DBS)
Presentation Type: Oral

Photobiomodulation for the Brain: A Systematic Review

Submission Author: Farzad Salehpour

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Background and Aim : Photobiomodulation (PBM) therapy is a developing therapeutic approach in which irradiation with low levels of red to near-infrared light (600 to 1100 nm) delivered from lasers or light-emitting diodes (LEDs) modulates cellular functions. As the proposed underlying mechanism of action, the absorption of red/near-infrared lights by CCO causes a redox change in the enzyme, leading to mitochondrial stimulation and increased ATP production. Evidence continues to accumulate regarding the effectiveness of PBM therapy in neurological and neuropsychiatric disorders as well as boosting brain function in healthy individuals.

Methods : The present study systematically reviewed published pre-clinical and clinical articles regarding PBM of neuronal cell cultures or the brain in animals and humans. We searched Web of Science and PubMed databases from 1967 to September 2019 using 233 relevant keywords. Results were reduced to peer-reviewed original articles.

Results : The initial search yielded more than 16,000 unique articles, of which 259 were eligible for inclusion. Of these, 59 were in vitro, 139 were in vivo, and 61 were original clinical articles. The specific wavelengths of 600-670 nm, 800-870 nm, 980 nm, and 1064-1068 nm appeared to be superior for brain PBM. Fluence values ranging from 0.1 to 15 J/cm2 were found to be effective for PBM of neuronal cells. Fluence levels measured at the cortex ranging from 1 to 8 J/cm2 were effective for the treatment of various animal models of brain disorders. For human studies, scalp fluences ranged from 10 to 30 J/cm2 for neurological disorders, 13 to 84 J/cm2 for neuropsychiatric disorders, and 15 to 60 J/cm2 for healthy individuals, depending on the severity of the pathology, depth of the target brain tissue, and the desired treatment outcomes. Brain PBM therapy could augment cerebral bioenergetics and blood flow, and could act as a neuroprotective approach via amelioration of neuronal oxidative stress, apoptosis, and neuroinflammation, and via stimulation of neurogenesis and synaptogenesis. Collectively, brain PBM could be promising in patients with (1) stroke by improving clinical metrics (NIHSS and Glasgow Outcome scales); (2) chronic traumatic brain injury by improving social functioning, self-awareness, sleep quality as well as mood and cognitive function; (3) major depression by alleviating depressive and anxiety symptoms (Hamilton scales) and sexual dysfunction; (4) dementia by improving cognitive function such as learning, memory and attention (MoCA and MMSE scales); and (5) Parkinson's disease by improving motor and cognitive functions. The potential benefits of this modality have also been shown in patients with bipolar disorder, consciousness disorders, autism, Down syndrome, multiple sclerosis, and amyotrophic lateral sclerosis. Furthermore, PBM can enhance higher-order cortical functions including

prefrontal rule-based learning, short-term memory, and sustained attention as well as executive functions in healthy individuals.

Conclusion : Although the number of controlled human studies has not yet reached a sufficient weight to support mainstream clinical acceptance, the majority of reports that have appeared so far support its neuroprotective effects and tolerability and safety. It is possible that brain PBM therapy will play an even larger role in the neurorehabilitation field in the future if controlled clinical trials now being performed are successful.

Keywords : Photobiomodulation; LEDs; Near-infrared light; Brain function; Neurological disorders; Psychiatric disorders

Count: 468
Abstract ID: 506
subject: Emotion, Motivation and Behavior: Behavioral Pharmacology
Presentation Type: Poster

The effects of injection of Amlodipine and Steroid Hormone into Hippocampus on Motor Skill Learning and Motion balance in the rats

Submission Author: Hossein Salmani

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Background and Aim : The durable memory makes motor skill learning an interesting paradigm for the study of learning and memory mechanisms and experiments showed blocking the calcium channels affecting memory and learning. So in the present study, the effect of Calcium Dihydropyridine antagonist and steroid hormones and their interaction in the motor skill learning and balance consolidation was investigated. Amlodipine (calcium dihydropyridine antagonist) by blocking the calcium channels of the nerve cells and affecting the synapses have a different effect on memory and learning. The steroids have a protective function on the central nervous system, steroid hormones with Amlodipine were used for a wider study.

Methods : In this experimental study, twenty-five mature wistar rats weighing 250 ± 25g were randomly divided into the 5 following groups (n=5 rats/group): Control, the groups received Amlodipine (3µl), Amlodipine plus Estradiol (2µl+1µl), Amlodipine plus Progesterone (2µl+1µl) and Amlodipine plus Estradiol plus Progesterone. Before surgery, the rats motion balance was examined with the rotarod set. The rotarod test is widely used to evaluate the motor coordination of rodents, and is especially sensitive in detecting cerebellar dysfunction. However, this test can be used to study motor skills learning. Animals in the control groups did not receive any drug. Rats in the drug groups were anesthetized with intra-peritoneal injection and bilateral cannulas were implanted 0.2 mm above hippocampus, by stereotaxic apparatus. A week after the surgery, the drugs were injected into the groups through cannulas in final volume of 3µl. To check the learning and memory criteria, at the end of injection, motor skill learning were assessed by rotarod tests (1,3 and 24 hours after the injection, because Successful learning of a motor skill requires repetitive training). The test measures parameters such as riding time (seconds) or endurance. One-way analyses of variance (ANOVA) followed by Tukey's post hoc test, were used for analysis of the data.

Results : The collected information from pharmaceuticals showed that intra-hippocampus administration injection of Amlodipine, significantly ($p < 0.01$) reduced rotarod test parameters. Also, 3h after the injection of Amlodipine plus estrogen, the results of the rotarod test in this group are significantly($p < 0.01$) higher than Amlodipine plus E2+P4 and Amlodipine plus P4 drug groups. The comparison of the rotarod test of each group suggests that the motor skill and balance index in the control group has significantly($p < 0.01$) increased in the 1,3,24 hours after injection. The rotarod test of drug groups with respect to the pre -

injection drug rotarod test showed a significant decrease at the level(p<0.001). However, in the Amlodipine plus estrogen medication group, 3 hours after the injection, a significant increase was observed relative to the rotarod test before drug injection.

Conclusion : It seems Amlodipine decrease the motion balance and motor skill learning. There is an interaction between Amlodipine and estrogen hormone in the motor skill learning at the hippocampus.

Keywords : Amlodipine, Steroid Hormones, Learning, Balance, Motor Skill Learning, Rat

Count: 469
Abstract ID: 68
subject: Special topics: Public Awareness
Presentation Type: Poster

Clinical Manifestations and Pathologic Findings of Pediatric Tumors with Neuronal Origin in Ardabil, Northwest of Iran

Submission Author: Ali Samady

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Background and Aim : Pediatric central nervous system (CNS) tumors are the second most common childhood malignancy after leukemia and the most common solid tumor. The incidence rate of childhood primary CNS tumors in the United States is approximately 5.67 per 100,000 person-years. Their comparative prevalence among other cancers, on one hand, the potentially threatening nature of involving a developing system such as nervous system and quite vague symptoms particularly in younger children, on the other hand, make them more noteworthy.

Methods : We prepare d a case series study of space-occupying tumors with the neuronal origin in Bou' Ali children's center in Ardabil province, northwest of Iran. A total of 20 proven cases according to the revised WHO histological types since the foundation of our hospital for 10 years were collected. All the cases were then classified and analyzed for the relative frequency, the initial symptoms, and the detailed location of tumors. The primary manifestations were placed in the 3 main categories: symptoms suggesting raised intracranial pressure, focal neurological deficits, and nonspecific ones. Pieces of evidence of abducent nerve palsy and hospitalization for chemotherapy adverse effects were the other instances.

Results : The most frequent type of CNS tumors was optic glioma, followed by medulloblastoma, and neuroblastoma beside 5 PNETs. We did not have an accurate diagnosis for a brain and a spinal tumor for the parental dissent to biopsy. 8 of 10 intracranial tumors had revealed intracranial hypertension and all 6 cases of optic gliomas had signs of 6th cranial nerve palsy. Cytopenia, pneumonia and oral ulcers were the commonest causes of hospitalizations without chemotherapy.

Conclusion : The relative frequency of our tumors corresponded to international reports. Moreover er, symptoms due to intracranial hypertension and esotropia representing abducent palsy were predominant which warns carefully evaluating for a child with these signs or symptoms especially in the youngers who cannot probably communicate.

Keywords : Pediatric, Nervous system tumors, Intracranial hypertension, Brain, Spinal cord

Count: 470
Abstract ID: 567
subject: Cognition: Other
Presentation Type: Poster

graph theory

Submission Author: Fatemeh Sarabadani tafreshi

Fatemeh Sarabadani tafreshi[1]

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Background and Aim : Alzheimer's disease (AD) is a progressive disease that causes problems of cognitive and memory functions decline. Patients with AD usually lose their ability to manage their daily life. Exploring the progression of the brain from normal controls (NC) to AD is an essential part of human research. Although connection changes have been found in the progression, the connection mechanism that drives these changes remains incompletely understood. The purpose of this study is to explore the connection changes in brain networks in the process from NC to AD, and uncovers the underlying connection mechanism that shapes the topologies of AD brain networks. In particular, we propose a mutual information brain network model (MINM) from the perspective of graph theory to achieve our aim. MINM concerns the question of estimating the connection probability between two cortical regions with the consideration of both the mutual information of their observed network topologies and their Euclidean distance in anatomical space. In addition, MINM considers establishing and deleting connections, simultaneously, during the networks modeling from the stage ofNCtoAD.ExperimentsshowthatMINMissufficienttocaptureanimpressiverangeoftopological propertiesofrealbrainnetworkssuchascharacteristicpathlength,networkefficiency,andtransitivity, and it also provides an excellent fit to the real brain networks in degree distribution compared to experiential models. Thus, we anticipate that MINM may explain the connection mechanism for the formation of the brain network organization in AD patients

Methods : Data used in this study were recruited from the public resting-statefunctionalmagneticresonance imaging (rs-fMRI) datasets named Alzheimer's Disease Neuroimaging Initiative (ADNI) (http://adni. loni.ucla.edu) consisting of a total of 147 participants. They are divided into three groups: normal controls (NC) group, mild cognitive impairment (MCI) group, and Alzheimer's disease (AD) group. The NC participants were non-depressed, non-demented, and had an average MMSE score of 28.72. The MCI group had an averageMMSEscoreof27.68. PatientswithADhadanaverageMMSEscoreof22.36. Eachparticipant underwent a scan session using a 3.0T Philips MRI scanner. All the resting fMRI scans were collected axially by adopting an echo-planar imaging (EPI) sequence with the following parameters: repetition time (TR) = 3000 ms; echo time (TE) = 30 ms; axial slices = 48; slice thickness = 3.313 mm; slice acquisition order = sequential ascending; and flip angle (FA) = 80.0∘. Participants were informed to relax their minds and keep their eyes closed during the scanning to obtain resting state MRIs

Results : 1

Conclusion : We have investigated how topological-based mutual information and Euclidean distance are adopted in the simulation of brain network topologies with AD. We also concentrate on how connections are established or deleted among different brain regions. Our ambition is to uncover the fundamentalconnectionmechanismthatfacilitatesthealterationsofbrainnetworksintheprogression from NC

to AD. We demonstrate that adding the mutual information into our model can promote the modeling performance in this progression. Successful models of AD brain networks have been instrumental in understanding how structural brain organizations affect the ability of cognition. Our work has opened new avenues toward the diagnosis and treatment of AD

Keywords : Alzheimer's disease; graph theory; mutual information; network model; connection mechanism; functional magnetic resonance imaging; topological structures; anatomical distance

Count: 471
Abstract ID: 409
subject: Neural Injuries and Neurodegenerative Disorders: Neurodegenerative Disorders
Presentation Type: Poster

Comparison of serum level of Prolactin with severity of Parkinson's disease in animal model of 6- hydroxydopamine

Submission Author: Ali Sarbazi Golezari

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Background and Aim : Parkinson's disease (PD) has been shown to have relationship with changing in hormones, but it is not clear whether this is either a cause for or a result of the disease. To evaluate more, we examined the serum level of prolactin in 6-hydroxydopamine (6- OHDA)- induced Parkinsonism in male rats.

Methods : 6-OHDA was injected into medial forebrain bundle using stereotaxic surgery. Development and intensity of Parkinsonism were evaluated by apomorphine-induced rotational test and immunofluorescence labeling of dopaminergic (DA) neurons in substantia nigra. Blood samples were collected before the toxin and in the third and sixth weeks after that. The hormone levels were determined using Enzyme-linked immunosorbent assay (ELISA) kits.

Results : The severity of rotations was different among 6-OHDA- treated rats and accordingly they were divided into two subgroups of severe and mild parkinsonian rats. Degeneration of DA neurons was observed in both subgroups but it was significantly less in mild one. Prolactin increased in both subgroups in third week after the toxin but returned to normal in sixth week. There was no association between the pre-toxin levels of this hormone with the intensity of Parkinsonism.

Conclusion : Our findings indicate that 6-OHDA-induced Parkinsonism associates with increase in serum level of prolactin. Increase in prolactin was observed in rats with less DA neuronal loss. Therefore, prolactin level probably can predict death of DA neurons before the clinical signs of PD were revealed.

Keywords : Parkinson's disease; 6- OHDA; Prolactin; dopaminergic

Count: 472
Abstract ID: 102
subject: Epilepsy, Neural Excitability, Synapses, and Glia: Synaptic Transmission and Synaptic Plasticity
Presentation Type: Poster

the survey of the effect of Insulin therapy on gene expression and distribution pattern of BDNF protein in the hippocampus of newborns born to diabetic rats

Submission Author: Reza Sardar

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Background and Aim : Gestational diabetes is one of the most common disorders during pregnancy, disturbing fetus development which might ultimately lead to the perinatal or newborn mortality. Hippocampus is a part of the brain which has a major role in memory formation and one of the most vulnerable brain components sensitive to blood sugar fluctuations. Brain-derived nephrotic factor (BDNF) is a member of nephrotic factors which has a role to play in regulating the survival and differentiation of neuronal cells during development. Hippocampus is one of the major sites of BDNF function, and as growing evidence indicates, this factor is vital in learning and memory formation. This study aims to evaluate the effects of Streptozotocin-induced type 1 maternal diabetes on distribution pattern and also the expression of BDNF in different areas of the hippocampus in newborn rats.
Methods : 18 pregnant Wistar rats were obtained and then randomly categorized into 3 groups: 1. The diabetic group (STZ-D): 60mg/kg of STZ was solubilized in normal saline and injected intraperitoneally to rats. 2. The diabetic group treated with insulin (STZ-INS): after the diabetic model confirmation, the rats were treated with 4-6 insulin units subcutaneously twice a day for two weeks. During this procedure, the blood sugar level was monitored. 3. The control group (CON): there was an equal number to that of the diabetic group which the treated intraperitoneally with normal saline. Their blood sugar level was also monitored using a glucometer. At the end of the pregnancy, the newborns were anesthetized and after the brain and hippocampus dissection the distribution pattern and also the expression of BDNF in different areas of the hippocampus in newborn rats was evaluated using immunohistochemistry and real-time PCR, respectively.
Results : The results of this study demonstrated that there was no significant difference regarding the expression of BDNF mRNA in the newborns of diabetic mothers after 1, 7 and 14 days of their birth compared to their control group counterparts (P>0.05). Furthermore, the BDNF protein expression was significantly declined across the hippocampus in the newborns of diabetic mothers at days 1, 7 and 14 after birth (P<0.05). Additionally, it was found that using insulin possibly increase the protein expression of BDNF and also reduces its negative impact on the newborns.
Conclusion : The results of this study for the first time showed that gestational diabetes reduces the expression levels of BDNF protein across the hippocampus of the newborns. On the other hand, controlling the levels of blood sugar in diabetic mothers using insulin can reduce these complications.
Keywords : Gestational diabetes, Hippocampus, BDNF, Newborn rats

Oral & Poster Presentations

8th Basic and Clinical Neuroscience Congress
December 18-20, 2019
Razi Hall, Tehran, Iran

Iran University
of Medical Sciences

Iranian Neuroscience
Society

Count: 473
Abstract ID: 577
subject: Novel and Cutting-Edge Technologies: Brain Stimulation Methods   (ECT, rTMS, TDCS, DBS)
Presentation Type: Poster

The Effectiveness of Cranial Electrotherapy Stimulation (CES) on reducing Depression and Anxiety symptoms in veterans with PTSD

Submission Author: Shabnam Sarhadi

Shabnam Sarhadi[1]

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Background and Aim : The prevalence of comorbid disorders with Post-Traumatic Stress Disorder (PTSD) is high, furthermore, Anxiety and Depression are prevalent and often co-occur with PTSD among veterans. Non-Invasive Brain Stimulation (NIBS) are useful to treat Psychiatric and Neurological disorders; which one of them is Cranial Electrotherapy Stimulation (CES). CES is a FDA-Approved modality for treatment of Anxiety, Depression and Insomnia. The objective of this study was to evaluate the effectiveness of CES on reducing Depression and Anxiety symptoms in veterans with combat-related PTSD.

Methods : Current research was a Semi-experimental study with PreTest-PostTest and control group. This study carried out in 2019 with statistical population of veterans from Tehran, in which 32 subjects were selected by purposive sampling method and then randomly divided into experimental (treatment by CES) and control groups (each group had 16 subjects). Research tools were included Beck Depression Inventory-II (BDI-II) and Beck Anxiety Inventory (BAI). The Data analyzed with SPSS-25 software using ANCOVA.

Results : In the PostTest, There was significant diffrence between experimental and control groups in BDI-II and BAI mean scores.

Conclusion : CES had significant impact on reducing Depression and Anxiety symptoms in veterans with combat-related PTSD. The findings of this study could be useful for the clinical and research use of CES to treat Depression and anxiety symptoms.

Keywords : Cranial Electrotherapy Stimulation; CES; PTSD; Depression; Anxiety; Brain Stimulation Methods

Count: 474
Abstract ID: 159
subject: Epilepsy, Neural Excitability, Synapses, and Glia: Seizure and Epileptic Disorders
Presentation Type: Oral

The role of serotonergic system in anticonvulsant effects of deep brain stimulation

Submission Author: Abdolrahman Sarihi

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Background and Aim : The mechanisms of deep brain stimulation (DBS) for epilepsy or movement disorders remain incompletely understood. The synaptic terminal may independently influence by DBS. There are some evidence supports the possibility that serotonergic pathways and 5-HT1 are involved in seizure modulation by DBS.

Methods : Amygdala kindling was conducted in a semi-rapid kindling stimulations (12 stimulations per day) in male Wistar rats. Low Frequency Stimulation (LFS, 0.1 ms pulse duration at 1 Hz, 200 pulses, 50–150 μA, 5 min) was applied after termination of kindling stimulations. NAD-299 (a selective 5-HT1A receptor antagonist; 2.5 and 5 μg/μl) was microinjected into the hippocampal CA1 before applying LFS.

Results : Application of LFS following daily kindling stimulations reduced the behavioral seizure stages, afterdischarge duration, and stage 5 seizure duration and increased the latency to stage 4 seizure compare to the kindled group. However, Microinjection of NAD at the doses of 5 μg/1μl but not 2.5 μg/1μl blocked the inhibitory effect of LFS on behavioral and electrophysiological parameters in kindled animals.

Conclusion : There are some connections between serotonin and other neuromodulators actively involved in DBS anti-seizure effects which interactions and probable mechanisms has been discussed.

Keywords : Serotonin, Deep brain stimulation, Kindling.

Count: 475
Abstract ID: 78
subject: Neural Injuries and Neurodegenerative Disorders: Traumatic Brain Injury
Presentation Type: Poster

Losartan, a commonly used anti-hypertensive angiotensin II type 1 receptor (AT1) antagonist, ameliorates neurological scores, blood brain –barrier permeability and brain water content after severe tra

Submission Author: Shahin Sarikhani

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Background and Aim : Traumatic brain injury (TBI) is a serious medical and social problem worldwide. Because of the complex pathophysiological mechanisms of TBI, effective pharmacotherapy is still lacking. Angiotensin II (ANG II) plays an important role in the pathogenesis of brain injury. Overproduction of Ang II during traumatic brain injury (TBI) induces the activation neuroinflammation and cell death in a model of diffuse neuronal injury. Therefore, in this study, we investigated the effects of neuroprotective losartan after traumatic brain injury in male rats.

Methods : The male Albino wistar rats received different doses of losartan (5, 10, 20 unit/kg, i.p.). All animals were intubated before surgery. In the TBI groups except sham and intact control groups, diffuse TBI was induced by Marmarou method using a TBI induction device. The severe TBI was induced using a weight 450 gr. The neurologic scores (VCS) and brain water content, the beam-walk –balance task (WB) and BBB integrity (Evans blue) were recorded for 72 hours.

Results : Our results showed that traumatic brain injury led to significant brain edema and disruption of blood brain- barrier, neurological scores defect and Vestibulomotor dysfunction in compare with intact-sham control groups (P<0.001) but losartan in two dose (5 and 10 mg/kg) improved neurology dysfunction but in 10 mg/kg dose results were better in compare with TBI-saline control groups (P<0.001).

Conclusion : These findings showed that losartan has beneficial effects on blood–brain barrier permeability, neuroprotection and neural repair and also it can decrease BBB permeability, neurological scores and brain edema after traumatic brain injury.

Keywords : Losartan, TBI, neuroprotection, blood brain-barrier, rat

Count: 476
Abstract ID: 204
subject: Cognition: Learning and Memory
Presentation Type: Oral

Therapeutic role of berberine on cognitive deficit and brain oxidative stress in Thioacetamide-induced hepatic encephalopathy in rats

Submission Author: Alireza Sarkaki

Alireza Sarkaki[1], Yaghoub Farbood[2], Somayeh Hajipour[3], Mahin Dianat[4], Ali Nesari [5]

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Background and Aim : Hepatic encephalopathy (HE) is a serious neuropsychiatric syndrome due to hepatic failure. Berberine, an isoquinoline alkaloid isolated from Rhizoma coptidis with antioxidative activity and preserve cell viability induced HE in rats. The aim of current study was to investigate the effect of berberine on cognitive, and brain tissue oxidative stress in adult male rats with thioacetamide (TAA)- induced HE.

Methods : 48 adult male Wistar rats (200–250 g), divided randomly into 6 groups (n=8): Control; received normal saline containing DMSO (2 mL/kg/day, i.p.). HE; received TAA (200 mg/kg/day, i.p.). HE +Ber10; HE rats received berberine (10 mg/kg, i.p.). HE +Ber30; HE rats received berberine (60 mg/kg, i.p.). HE +Ber60; HE rats received berberine (60 mg/kg, i.p.). MK801+HE; HE rats received MK-801 (2 mg/kg/day, i.p.). Berberine and MK-801 were administrated after HE induction at seven alternative days for consecutive 14 days. Serum aspartate aminotransferase (AST) and alanine aminotransferase (ALT), passive avoidance memory in shuttle box and brain tissue oxidative stress were measured. Data presented as Mean SEM and analyzed with ANOVA fallowed by Tukey's post hoc test. $P<0.05$ assigned as significant difference.

Results : The BBB permeability, brain edema, liver enzymes (ALT and STL), serm total bilirubine, and MDA were increased significantly in HE group versus control ($p<0.001$). Berberine reversed them dose dependenty ($p<0.001$). STL and the GPx activity in brain tissue were decrease in HE group versus to control ($p<0.001$). Berberine could improve them significantly dose dependently ($p<0.001$). MK-801 through block the NMDA receptors had suppressive effect opposite the TAA to induce HE.

Conclusion : In the current study, we showed the beneficial effects of berberine on biochemical and behavioral alterations in HE induced by TAA. Therefore, our data indicate that berberine might be a promising therapeutic agent for HE adverse effects.

Keywords : Hepatic Encephalopathy; Liver enzymes; BBB permeability; Cognition; Oxidative stress, NMDA receptor

Count: 477
Abstract ID: 114
subject: Epilepsy, Neural Excitability, Synapses, and Glia: Neurotransmitters and Signaling Molecules
Presentation Type: Poster

The role of 5-HT3 receptor antagonist on the gene expression 5-HT3a in the electrical amygdala kindled rats

Submission Author: Zeinab Sayyahi

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Background and Aim : Epilepsy is a brain disorder characterized by the recurrence of otherwise unprovoked seizures, that is, by an enduring predisposition to generate seizures and by the neurobiological, cognitive, psychological, and social consequences of this condition. The definition of epilepsy requires the occurrence of at least one seizure. Among the different types of epilepsy, temporal lobe epilepsy is the most prevalent and its most commonly used animal model is kindling. In the kindling model of epilepsy, repeated electrical stimulation of a target brain area induces permanently enhanced seizure susceptibility and other enduring brain alterations that are similar to those occurring in human temporal lobe epilepsy. The amygdala is one of the most sensitive areas for the induction of kindled seizures. The aim of this study was to determine the role of 5-HT3 receptor antagonist on the gene expression 5-HT3a in the electrical amygdala kindled rats.

Methods : Male Wistar rats (weighing 270–350 g) were used in this study. Animals were assigned to seven groups as control, sham, kindled, kindled + vehicle, kindled + Ramo. 1µg, kindled + Ramo. 10µg, kindled + Ramo. 100µg. In kindled + vehicle group, animals were injected with ramosetron vehicle and then received the kindling stimulations. In kindled + Ramo. 1 µg group, animals were injected with ramosetron 1µg / 0.5 µl (ICV) and then received the kindling stimulations 24 h after applying the vehicle injection. In kindled + Ramo. 10 µg group, animals were injected with ramosetron 10 µg / 0.5 µl (ICV) and then received the kindling stimulations 24 h after applying the vehicle injection. In kindled + Ramo. 100 µg group, animals were injected with ramosetron 100µg / 0.5 µl (ICV) and then received the kindling stimulations 24 h after applying the vehicle injection. For quantitative real time-PCR (qRT-PCR), animals were sacrificed and their hippocampus were extracted immediately after Conduct behavioral tests.

Results : Main findings: 1) The 5-HT3a gene expression in Kindled and Kindled + vehicle groups compared with the control group and low and moderate doses compared with high doses was significantly reduced. 2) The 5-HT3a gene expression in moderate dose compared with Kindled and Kindled + vehicle

groups increased significantly. 3) The 5-HT3a gene expression in high dose compared with control, Kindled and Kindled + vehicle groups increased significantly.

Conclusion : The results of our study show that the expression level of 5-HT3a gene in kindle and kindle + vehicle groups was decreased compared to the control and low and medium dose drug groups compared to the high dose group, whereas Medium and high dose recipients were significantly increased compared to the Kindle and Kindle + vehicle groups.Previous findings showed that Cx30 mRNA expression was increased at the start of kindling and after focal seizures, and that when animals received general seizures, gene expression decreased. The increase in Cx30 mRNA expression at the start of kindling is inconsistent with the initial increase in the corresponding protein.

Keywords : Epilepsy, 5-HT3 Receptors, electrical kindling, Seizure, Amygdala, gene expression

Oral & Poster Presentations

8th Basic and Clinical Neuroscience Congress
December 18-20, 2019
Razi Hall, Tehran, Iran

Iran University of Medical Sciences

Iranian Neuroscience Society

Count: 478
Abstract ID: 43
subject: Emotion, Motivation and Behavior: Stress and the Brain (Stress-modulated Pathways, Stress and Cognition, Stress Related Disorders)
Presentation Type: Oral

Mesolimbic dopamine system and its modulation by vitamin D in a chronic mild stress model of depression in the rat

Submission Author: Katayoun Sedaghat

Katayoun Sedaghat[1]

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Background and Aim : Depression, a common mood disorder, involves anhedonia and defects in reward circuits and mesolimbic dopamine transmission in the striatum and nucleus accumbens (NAc). Active vitamin-D, (1,25-(OH)2 vitamin-D3), exerts protective and regulatory effects on the brain dopamine system.

Methods : In this study, key depression-like symptoms were induced in rats by chronic mild-stress (CMS) and the comparative effect of treatment with 1,25-(OH)2 vitamin-D3 (5, 10 µg/kg, or vehicle; i.p., twice weekly) or fluoxetine (5 mg/kg or vehicle, i.p., daily) on anhedonic behavior, locomotor activity and anxiety-like behavior was examined using sucrose preference test (SPT), open field test (OFT) and novel object exploration test (NOT), respectively. We also measured serum corticosterone levels and dopamine transporter-immunoreactivity (DAT-ir) levels in NAc shell and core. CMS exposure for 3 weeks was followed by a SPT and thereafter CMS was continued for 5 weeks, along with vitamin-D or fluoxetine treatment and further testing, which was concluded with another SPT.

Results : Vitamin-D treatment enhanced sucrose preference ($P < 0.01$; an hedonic effect) and increased object exploration ($P < 0.01$) in CMS rats. CMS significantly reduced the level of DAT-ir in NAc ($P < 0.0001$). Vitamin-D treatment restored/increased DAT-ir levels ($P < 0.0001$) in CMS rat NAc (core/ shell), compared to levels in fluoxetine treated and non-treated CMS rats. Vitamin-D did not alter locomotor activity or produce an anxiolytic effect in the OFT.

Conclusion : These data suggest that similar to the antidepressant, fluoxetine, regular vitamin-D treatment can improve 'anhedonia-like symptoms' in rats subjected to CMS, probably by regulating the effect of dopamine-related actions in the NAc.

Keywords : Depression, Vitamin-D, Fluoxetine, Chronic mild stress, Nucleus accumbens, Rat

Count: 479
Abstract ID: 379
subject: Cognition: Attention
Presentation Type: Poster

Could ASMR (Autonomous Sensory Meridian Response) Decrease the Brain Response-Selection Stage?

Submission Author: Sahar Seifzadeh

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Background and Aim : Autonomous sensory meridian response (ASMR) is the innovative audiovisual phenomenon, including various triggers, namely personal attention, whispering as well as slow movement, to generate a relaxing shivering sensation for the Reddit and Youtube subscribers. The number of ASMR published studies has grown drastically concerning numerous aspects of ASMR, such as changes mentally and physically, like in physiology or personality, although the most of papers investigate the influence of ASMR on decreasing the anxiety and inducing deep relaxed sleep.

Methods : In this paper, we aim to estimate the effect of ASMR videos on the Simon effect test. For this purpose, the difference in accuracy and reaction time between congruent and incongruent trials among ASMR and the control group was estimated. Twenty-Two healthy participants enrolled in our project, which divided into two groups, namely ASMR and control (Age mean$\pm$SD = 25.12). Firstly, both groups examined with Simon effect test in both trials; after that ASMR group watched fifteen minutes of ASMR video from famous ASMRtists; on the other hand, the control group watched a popular documentary movie about the earth with the same time duration. Afterward, both groups had the other Simon effect test.

Results : The results indicate that there is statistically significant difference ($p <= 0.01$) in the ASMR group in the post-ASMR stage in in-congruent trials.

Conclusion : According to these findings, ASMR could help in cognitive rehabilitation protocols, as an illustration, attention deficiencies.

Keywords : ASMR; Response-Selection Stage; Simon Effect; Cognitive Rehabilitation; Attention Deficiencies

Count: 480
Abstract ID: 380
subject: Cognition: Other
Presentation Type: Poster

The Nostalgic Music Time Perception in Bilingual and Monolingual Individuals

Submission Author: Sahar Seifzadeh

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Background and Aim : Music is a compelling emotional stimulus that alters the relationship with time. Time does seem to fly when listening to pleasant music, admittedly. The emotion of nostalgia has newly been the center of burgeoning practical and theoretical developments.

Methods : In this paper, we aimed to assess the relationship between bilingual and monolingual Individuals in nostalgic music time perception. The participants divided into two distinct groups, namely Turk and Persian (N=60) (Age Mean±SD = 23.06). Both groups listened to the same duration (three minutes) of two nostalgic music tracks (1980's), the first one is Turkish, and the other one is Persian, both of them are the same for both groups in all aspects (genre, overall loudness, male voice).

Results : The results indicated that the Turk group underestimated the time significantly ($p \leq 0.005$), in comparison with the Persian one.

Conclusion : According to these findings, playing mother-lounge music tracks could reduce the judgment of time in waiting situations for bilingual individuals such as waiting rooms, long-term travels, or in the queues.

Keywords : Nostalgic Music; Time Perception; Bilingual; Monolingual; Turkish Music; Persian Music; 1980's;

Count: 481
Abstract ID: 383
subject: Computational Neuroscience: Computational Tools
Presentation Type: Oral

An investigation of Stimulus Type Effect on Brain Functional Connectivity in BCI systems

Submission Author: Sara Sepehri Shakib

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Background and Aim : Brain-Computer Interface (BCI) Systems can provide a bridge between humans and computers, which can improve disabled people's quality of life. In these systems there should be a way to receive the users' command and also send them the response. The goal of this research is to investigate the effect of system response (stimulus) type, such as visual and/or tactile on brain connectivity. Electroencephalogram (EEG) signals are greatly being used in BCI systems due to their high temporal resolution as well as low cost. Although there are lots of information in the local EEG signal recorded from the scalp, studying the connectivity between different brain regions can lead to a better understanding of brain functions. Brain connectivity shows different patterns in response to different types of stimuli. In BCI systems it is of great importance to find a distinguishable index in order to improve the system accuracy and reliability. In this research, brain functional connectivity pattern differences are investigated in two different stimulus types (visual and/or tactile).

Methods : 32-Channel EEG signal with the sampling frequency of 256 Hz, from 18 healthy participants (24 to 25 years old), was recorded in interaction with a BCI system. The participants had to try to move a red rectangle on the screen toward a green one by imagining their right hand (to move right) or their left leg (to move left) movement. Two blocks were corresponding to the visual or tactile stimulus individually. For visual stimulus, the system response was the movement of the red rectangle to the green one in the screen while for tactile stimulus, a vibrating motor on the users' wrists was activated in the right or left hand depending on the movement direction. After preprocessing, the coherence was calculated as the functional connectivity measure for all channel pairs. Wilcoxon test was then applied in order to investigate the differences.

Results : Based on the results, there are significant differences between tactile and visual stimulus conditions in the functional connectivity of the several channel pairs (P-Value<0.01): Fp2-F8, Fp2-Cp2, Fp2-P7, Fp2-O2, Af3-Po4, Fc2-Cz, and Cz-C4. Most of these significant differences are placed in the right hemisphere of the brain. Moreover, it was observed that brain connectivity is greater in the tactile stimulus compared to the visual stimulus.

Conclusion : The tactile stimulus induces brain connectivity significantly more than the visual stimulus. Therefore, the use of tactile stimulus in BCI systems can improve the accuracy of the system.

Keywords : Electroencephalography, Brain-Computer Interface, Brain Functional connectivity.

Count: 482
Abstract ID: 5
subject: Cognition: Learning and Memory
Presentation Type: Oral

Evaluation of methamphetamine-induced cognitive impairments using the novel object recognition task in rodents

Submission Author: Seyedeh Masoumeh Seyedhosseini Tamijani

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Background and Aim : Methamphetamine (MA) is a widely abused synthetic psychostimulant that produces cognitive impairment in MA abusers. MA-induced cognitive impairment in rodents may be useful as animal models of cognitive deficits in MA abusers. We observed that novel object recognition task used in many articles that investigated cognitive deficits produced by MA in the animal. The novel object recognition task measure non-spatial memory in rodent and it's based on natural tendency animal to explore novel object. It has been reported that this task has a similarity with the recognition task that is used in human to evaluate declarative memory impairment.

Methods : in this review, we summarized the results of almost all published these reports and their molecular mechanisms involved in memory impairment underlying use novel object recognition test in different administration of MA paradigm.

Results : We find that main neurobiological mechanisms that participate in MA-induced recognition deficits are monoaminergic systems dysfunction. Our review revealed that this impairment observes in a different type of MA dosing regimen in the rodents.

Conclusion : It considers that NOR is an appropriate task for neuroscientist in cognitive function fields, their neurobiological basis, and also for evaluating the efficacy of new therapeutic agents.

Keywords : Methamphetamine; Novel object recognition test; Monoaminergic systems; cognitive impairment; Rodents

Count: 483
Abstract ID: 26
subject: Computational Neuroscience: Computational Tools
Presentation Type: Oral

Comparing VBM and ROI analyses for detection of gray matter abnormalities in Patients with Bipolar Disorder

Submission Author: Seyedehsomayyeh Seyedi

Seyedehsomayyeh Seyedi[1], Raheleh Jafari[2], Ali Talaei[3], Shahrokh Naseri[4], Mahdi Momennezhad[5], Hosein Akbari Lalimi[6], Maliheh Dadgar Moghaddam[7]

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Background and Aim : With the increasing efforts to the better understanding of psychiatric diseases, detection of brain morphological alterations are necessary. The aim of this study is comparing two methods-voxel based morphometry (VBM) and region of interest (ROI) analyses- to identify significant gray matter changes of patients with bipolar I disorder (BP I).

Methods : The structural MRI were obtained in a total of 50 subjects (25 healthy subjects with a mean age of 34.48±8.32 years as a control group and 25 patients with a mean age of 37.68±10.88 years). We compared the gray matter alteration results obtained by VBM analysis using DARTEL approach with those obtained using ROI analysis which applies three probabilistic brain atlases namely, hammers, lpba40, and neuromorphometrics atlases. All analyses were conducted via the Computational Anatomy Toolbox (CAT12) implemented in Statistical Parametric Mapping (SPM12) software package.

Results : The VBM findings suggested that gray matter reductions in left precentral and right precuneus of the patients compared to healthy subjects. However, several areas reached the level of significance in ROI analysis. Most regions detected have deficits in gray matter volumes in the patients compared to the control group except bilateral pallidum.

Conclusion : Although the two methods exhibit different kinds of information, they complement each other. Therefore, the selection of a method should be guided by the purpose of research.

Keywords : voxel-based morphometry; region of interest analysis; bipolar disorder; MRI; brain

Count: 484
Abstract ID: 595
subject: Emotion, Motivation
and Behavior: Behavioral Pharmacology
Presentation Type: Poster

Therapeutic effects of Spirulina platensis against juvenile stress induced oxidative stress, BDNF alterations and morphological remodeling in the amygdala of female rats in adulthood

Submission Author: Seyed Ali Seyedinia

Seyed Ali Seyedinia[1], Tarahomi Parnia[2], Moradi-Kor Nasroallah [3], Ghanbari Ali [4], Rashidipour Hadi [5], Bandegi Ahmad Reza [6], Yousefi Behpour [7], Barati Mehdi [8], Kokhaei Parviz [9]

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Background and Aim : The amygdala structural and functional abnormalities has been implicated in numerous neuropsychiatric and neurodevelopmental disorders. Given the important role of the amygdala in stress responses and the susceptibility of the females to juvenile stress, the present study investigated the beneficial effects of Spirulina platensis microalgae (SP) as a neuroprotective supplement against juvenile stress induced oxidative stress, BDNF alterations, molecular and morphological remodeling in the basolateral amygdala (BLA) of female rats during adulthood.

Methods : During the juvenile period (PND30-40) rats were subjected to restraint stress (2 h/day for 10 days). Then, the animals were subjected to 15 days treatment (PND41-55) with SP (200 mg/kg/day) followed by biochemical (BDNF and stress oxidative markers), molecular (BDNF and TrkB mRNA expression), and morphological (dendritic remodeling) assessments in the BLA.

Results : The study revealed that juvenile stress decreased BDNF levels and reduced apical dendritic length and branch points of pyramidal neurons in the BLA. In addition, chronic stress significantly increased oxidative stress parameters and decreased BDNF and TrkB mRNA expression in the BLA. Treatment with SP alleviated both biochemical, molecular and neuroanatomical deficits that induced by juvenile stress.

Conclusion : Our findings provide important evidence that SP as a non-pharmacological intervention during pre-pubertal period can protect neuropsychiatric and stress related disorders in adulthood.

Keywords : Juvenile stress; Amygdala, BDNF; Dendritic remodeling; Spirulina; Adulthood

Count: 485
Abstract ID: 248
subject: Cognition: Learning and Memory
Presentation Type: Oral

Event-related potential markers of brands false memory

Submission Author: Mohsen Shabani

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Background and Aim : Electroencephalography (EEG) has been widely adopted for investigation of brain mechanism involved in different cognitive tasks such as learning and memory. In the case of memory retrieval, important role of frontal and parietal lobes for remembering of information has been indicated. However, about it is still unclear that how these regions exchange information during the memory retrieval. In this study, we tackle this question by investigation of ERP components during true and false memories of short-term autobiographical memories (STM) of brand contents. We hypothesized that frontal and parietal lobes are differently involved during true and false memory retrievals.

Methods : Thirty six (12 men, 12 women, and 12children) healthy subjects voluntarily participated in this research. All the subjects performed a modified version of Deese Roediger McDermott false memory task using brands images. EEG signal was also recorded using a 32-channel amplifier while the subjects were exposed to the brands stimuli. Subsequently, ERP components of false and true memories were extracted and statistically compared with each other.

Results : We found positive frontal amplitude associated with false memories is higher in the late time windows as compared to true memories. In contrast, ERP amplitude at parietal electrodes did not differ between true and false memories. Instead, parietal positivity was more pronounced during yes- compared to no-responses which could be counted as subjective reported memory by the participants. Consequently, our findings indicate that false memories differ from true memories with respect to late frontal activations.

Conclusion : Contrary to findings of previous studies in the DRM paradigm, the late positive ERP component did not differ between true and false memories. This might indicate that true and false memories were associated with recollection processes to the same extent; yet, specific methodological details of this study might have contributed to this finding contradicting the literature. Regarding the stable effect of response type at the parietal ERP components, it is concluded that higher positive activities at the parietal region indicate subjectively experienced memory rather than objectively correct memory. In addition, our results indicate false memories produce higher amplitude of late positive ERP components as compare to true memories. To conclude, we assume that parietal positivity reflects subjectively experienced memory, whereas the frontal negativity is differentially associated with true and false memories. Activation over the frontal regions could incrementally hold the information and may add false information to the subjectively experienced and reported memories. As this was the first study examining the event-related potentials in the misinformation paradigm, further studies are required to replicate the findings in more application-oriented approaches. Nevertheless, the finding that true and false memories differ in patterns of frontal activation is promising, as it leads to an assumption that true and false memories can be differentiated by the amplitude of event-related potentials at the frontal regions.

Keywords : False memory; Brain Waves; Autobiographical Memories

Count: 486
Abstract ID: 315
subject: Neural Injuries and Neurodegenerative Disorders: Ischemia, Stroke, and Neurovascular Disorders
Presentation Type: Oral

Effect of Reelin protein on endogenous neural progenitor cell migration and differentiation in animal model of stroke

Submission Author: Zahra Shabani

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Background and Aim : This study investigated the ability of intra-subventricular zone (SVZ) administration of Reelin protein on neural progenitor cells (NPCs) attraction from the SVZ toward the infarct cavity in photothrombotic stroke model of mice.

Methods : Bulb-c mice were assigned to four groups of the sham, stroke, and stroke+Reelin. The animal model of stroke was induced by green laser in right hemisphere under Stereotaxy. mice in the treatment groups received an intra SVZ injection of Reelin or the vehicle of Reelin one week after induction of stroke and were then subjected to the mNSS test on days 4 and 25 after Reelin injection. Bromodeoxyuridine (BrdU) was intraperitoneally injected to label newly generated cells. The samples were collected from the distance between SVZ and infarct cavity. Differentiation and proliferation of NPCs were assessed by BrdU/nestin/neuN double immunofluorescence method on days 5 and 28 after Reelin infusion.

Results : Stroke induced mice showed decreased neurological function compared to the Sham group. However, administration of Reelin improved motor and sensory function and the number of neuN expressing neuroblasts in the SVZ as compared to the stroke and stroke+Vehicle groups.

Conclusion : These results suggest that Reelin enhances the proliferation and differentiation of neural stem cells (NSCs) migrating toward the infarct cavity accompanied by improvement of stroke-induced neurological dysfunctions.

Keywords : Subventricular Zone, Reelin, photothrombotic stroke

Individual choice-induced preference chage in group settings

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Background and Aim : In our intricate world today, many of our value-based decisions are made in groups rather than individually. Therefore, it is of high importance to see how social interactions in group decision making changes behavioral phenomena that have been already established in individual decision making. One such phenomenon is choice justification reflected in choice-induced preference change. Choice-induced preference change (CIPC) is when individuals change their existing preferences to align more closely with their prior decisions. Encountering two almost equally valued alternatives, individuals often upgrade the selected item and/or downgrade the rejected one. This phenomenon is explained by cognitive dissonance theory in social psychology: inconsistency between rejecting an item while liking it, or selecting an item while disliking it arouses an unpleasant feeling (dissonance). This tension in turn motivates individuals to justify their choices to retain consistency. Relatedness self-concept and thus feeling of commitment and responsibility is essential for dissonance arousal and the subsequent attitude change. It has been argued that making decisions together reduces the burden of responsibility. We hypothesize that when people make decisions together, they share the responsibility for it and thereby, the role of self-concept becomes less important and decision-related stress is reduced. Hence, if joint decision making reduces decision-related stress, then it will also reduce CIPC.

Methods : Two experiments, individual and joint decision making, were run. In each experiment 44 participants, in pairs of the same sex, completed a modified free-choice paradigm. In the individual experiment, participants performed all the tasks independently but simultaneously. In the joint experiment, dyads were asked to jointly select a single item using a competing/comparative strategy; the joint choice would be the item for which more desire had been reported. However totally unbeknownst, in reality, they were interacting with pretend partners programmed by the computer. The experimental set-up was designed such that reciprocity and vicarious reward were controlled. Accordingly, depending on the relative positions of the individuals' preferences in the decision process and in the final outcome, three social outcomes were generated: non-conflict, conflict-win and conflict-lose.

Results : Pooling all social outcomes together, choice-induced preference change for dyadic decision makers was positive but weaker than for individual decision makers. This is consistent with reduced choice justification due to weaker sense of responsibility for the joint decisions. However, isolating different social outcomes of joint decision making showed that CIPC in joint decision makers was as much as it was in individual decision makers when the joint outcome was identical to one's own preferred alternative (i.e. in non-conflict and conflict-win cases). Otherwise (i.e. in conflict-lose case), people had tendency to justify their own preferred alternative rather than the joint choice. Valence of the offers did not matter in the degree of choice-induced preference.

Conclusion : Our findings showed that in joint decisions people might feel full commitment to their individually made decisions. Therefore, it is implied that diffusion of responsibility and less attitude change in joint decisions might not be guaranteed but rather depend on social setting.

Keywords : choice-induced preference change; cognitive dissonance; joint decision making; shared responsibility; social outcome

Count: 488
Abstract ID: 401
subject: Pain and Sensory Systems: Tactile, Somatosensation and Pain Syndromes
Presentation Type: Poster

Comparison of pre-pulse inhibition, tactile discrimination learning and barrel cortical neural response in adult male rats following chronic exposure to morphine, methadone and buprenorphine

Submission Author: Faezeh Shafiei

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Background and Aim : Chronic exposure to opioids is the most common treatment plan to reduce the pain. In this study, the stereotyped behaviors and cognitive functions related to different types of tactile and auditory inputs were investigated in the rats following chronic exposure to the morphine, methadone, and buprenorphine.

Methods : Here, three addicted groups received morphine, methadone, and buprenorphine while the control rats received saline for 21 days. after Novel texture recognition test, the pre pulse inhibition test was performed in an acoustic startle box. Multi-unit recording technique was used to study the excitatory and inhibitory receptive fields of barrel cortical neurons.

Results : Our results demonstrated that the opioid-treated groups showed stereotyped behaviors including grooming and rearing. In the behavioral level, prepulse inhibition and preference indices were not changed significantly in the opioids treated groups compared to those of the saline group as two criteria for acoustic startle reflex and tactile discrimination, respectively. In the neuronal level, chronic morphine and methadone treatment changed the response properties of the barrel cortical neurons to the whisker deflections in the experimental groups compared to the saline group.

Conclusion : Thus, it was concluded that the excitatory receptive fields of neurons in the barrel cortex can be changed as a result of chronic exposure to morphine and methadone.

Keywords : Morphine; Methadone; Buprenorphine; Startle box ;Barrel cortex; Rat

Count: 489
Abstract ID: 185
subject: Neural Injuries and Neurodegenerative Disorders: Ischemia, Stroke, and Neurovascular Disorders
Presentation Type: Poster

Methods that minimize preoperative bleeding in hypevascular metastatic tumors

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Background and Aim : Hypervascular metastatic tumors sometimes cause serious bleeding in surgery. This issue may not allow total excision of the tumor. Preoperative tumor embolization is beneficial for reducing intraoperative blood loss in patients with vascular tumors. So here we want to express methods that minimize preoperative bleeding according to such studies.

Methods : This study was searched in data bases like PubMed, Science direct, Sid,… with key words Preoperative Bleeding, Tumor Embolization, Hypervascular tumors between 2014-2018.

Results : Such studies have said Trans catheter Arterial Embolization (TAE) is useful way for reduce blood loss during surgery also have emphasized on Ethyl Alcohol (EA) injection for decrease bleeding. Both are decreasing bleeding through intraoperative when used before surgery.

Conclusion : Since the blood losing is significative to patient health we should use this method for tumor devascularization. Preoperative TAE clinically effective to minimize bleeding also EA is an easy, cheap and less invasive method.

Keywords : Preoperative bleeding; Tumor Embolization; Hypervascular Tumors.

Count: 490
Abstract ID: 574
subject: Neuropsychiatry and Psychology: Mood Disorders
Presentation Type: Poster

Effects of isoniazid on immobility time in a forced swimming test study in male mice

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Background and Aim : Isoniazid is an antibiotic that has been used for the treatment of tuberculosis since 1952. However, this drug has also shown some euphoric effects on TB patients. Isoniazid is among the first drugs that suggested having antidepressant effects. However, to our knowledge, there is no report about the antidepressant-like effects of isoniazid in forced swimming test in the laboratory animals. Therefore, this research aimed to evaluate the possible antidepressant-like effects of isoniazid in the forced swimming test.

Methods : : In this research, a forced swimming test was conducted to evaluate the possible antidepressant-like effects of isoniazid. Saline and low doses of isoniazid (12.5, 25, 50, and 75 mg/kg, i.p.) were administered to 5 groups of male mice, and the immobility time of the animals was recorded. Moreover, the effects of the low doses of isoniazid on the locomotor activity of the animals were assessed with an open field method.

Results : : The mice that received isoniazid 1h before the test showed a significant decrease in the immobility time compared to the saline-treated animals. However, the open field test showed an increase in the locomotor activity in the animals that received isoniazid.

Conclusion : The antidepressant-like effects of isoniazid on the reduction in the immobility time in the forced swimming test may be due to its effects on increasing the locomotor activity of the animals.

Keywords : : Isoniazid, Forced swimming test, Immobility time, Mice

Count: 491
Abstract ID: 611
subject: Neurorehabilitation and Regeneration: Speech and Language Therapy
Presentation Type: Poster

Oropharyngeal Dysphagia in Amyotrophic Lateral Sclerosis

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Background and Aim : ¬¬Amyotrophic Lateral Sclerosis(ALS) is the most common type of degenerative motor neuron disease in adults which progressively affect lower motor neurons (LMN) and upper motor neurons (UMN) in cortex,brainstem,and spinal cord,without showing cognitive impairment.Symptoms of LMN include muscle weakness,hypertonia,and hyperreflexia,while UMN symptoms are hypotonia,muscle weakness and atrophy,and absent stretch reflex.Based on the area that ALS begins,it can be divided into two categories:Spinal and bulbar.Although the etiology of ALS has not been determined yet,5-10percent of cases have a family history of this disease.The incidence of ALS is about 5/2 per 100,000 people.In general,the symptoms of ALS are fasciculation,atrophy,progressive skeletal muscle weakness,muscle spasms,dysarthria,dysphagia, and dyspnea.Dysphagia alone or related to dysarthria is one of the most debilitating clinical problems of ALS.Dysphagia is a suitable indicator of ALS stage and severity.The swallowing disorder has been reported in 85% of all ALS cases.Dysphagia interferes in three steps of swallowing and it progresses over time until oral feeding becomes impossible for the patient.The postnasal drip,especially during drinking liquid or intermittent choking on saliva,can be the early symptom of dysphagia.Initial levels of dysphagia in ALS are due to oral dysfunction.Dysphagia in ALS is due to weakness or spasms of swallowing muscles,including chewing,tongue,lip,pharynx,and larynx.The weakness of the chewing muscle (pterygoid,masseter,and temporalis) leads to fatigue during chewing.The weakness of the facial muscles also causes problems with the formation of lips and the control of saliva in the oral cavity.As the tongue muscle weakens,manipulation and transfer of the bolus will be in trouble.Palatal and pharynx weakness also lead to nasopharyngeal seal damage and the regurgitation of food through the nose.The weakness of the pharyngeal and hyoid muscles may cause choking and aspiration.These symptoms can increase the risk of aspiration,dehydration,malnutrition,pneumonia,decreased quality of life,choking,social isolation and embarrassment and eventually death.The purpose of this study was to review the pathophysiology,evaluation methods and therapeutic strategies of dysphagia in patients with ALS.

Methods : In this study,we reviewed articles from 1996 to 2019 regarding the swallowing dysfunction in ALS.These papers were obtained through the following databases:Cochrane,PubMed,SAGE,CINHAL,ScienceDirect,ASHA,Wiley Online Library,and Google Scholar.We used"swallowing disorder","amyotrophic lateral sclerosis","Swallowing rehabilitation(therapy)","oropharyngeal Dysphagia","Deglutition disorders" as keywords for search.

Results : In this work,44 papers have been reviewed.Among these,11 studies have described the physiological changes in swallowing function after ALS.17 articles have investigated the swallowing function through different methods of instrumental and non-instrumental assessment.The effectiveness of

treatment on improving the swallowing function has been discussed in eight other papers.Four studies examined the changes in the quality of life while the remaining two were case reports.

Conclusion : Due to the high prevalence of swallowing disorder in ALS patients and serious complications,it can be concluded that timely and rapid evaluation of dysphagia in these patients is essential.Providing appropriate therapeutic and rehabilitation strategies can help to improve this disorder and the quality of life for these patients and their families.Therefore,more elaborate research and appropriate therapeutic strategies for the treatment of dysphagia by a speech therapist with accompaniment to other members of the management team will be critical for the treatment of ALS patients.

Keywords : amyotrophic lateral sclerosis,Oropharyngeal Dysphagia,swallowing rehabilitation,Therapy

Count: 492
Abstract ID: 382
subject: Cognition: Other
Presentation Type: Poster

Identity and Category Coding In Frontal Eye Field

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Background and Aim : The Frontal Eye Field (FEF) is an area of the prefrontal cortex, initially known for its role in the planning and execution of saccadic eye movements and visual-spatial selection. However, due to its widespread anatomical and functional connections with the visual system, the idea that FEF may play a more prominent role in object identification seems valid. A number of studies have shown that the FEF activity influences visual processing specifically during the period of time in which neurons in the visual cortex are processing the object to be identified.

Methods : To address this question, we simultaneously recorded single neurons of the FEF and inferotemporal cortex (known for its role in object identification) of a monkey performing a Rapid Serial Visual Presentation task (RSVP). We applied a combination of coding and decoding methods to calculate identity and category information in the FEF and IT cortex.

Results : The object information in both levels of individual cells and population suggests a small but significant complex feature information in the FEF cortex.

Conclusion : Our results provide evidence for the modulatory effect of PFC on the processing of complex objects in the extrastriate cortex.

Keywords : Frontal Eye Field; IT cortex; Object identity; Object category

Count: 493
Abstract ID: 16
subject: Pain and Sensory Systems: Multisensory Integration
Presentation Type: Poster

Translation and Psychometric Properties of the Persian Version of the Sensory Profile 2

Submission Author: Marjan Shahbazi

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Background and Aim : Achieving an effective and reliable evaluation tool for measuring sensory processing in infants, children and adolescents is necessary. The ultimate aim of the present study was to investigate the psychometric properties of sensory profile 2 to provide an appropriate tool for sensory processing.

Methods : After translating and obtaining the views of rehabilitation specialists and experts in Persian literature, the face and content validity of the assessment was determined by a survey of 20 rehabilitation professionals. To determine the construct validity of the convergence type, the comparison of the dimensions of the sensory profile 2 and adolescent-adult sensory profile and the Vineland adaptive behavior scale were used. The determination of reliability was carried out by analyzing the internal consistency and the test-retest in the 0 to 14 year old populations.

Results : In this study, 1272 parents and teachers from 0 to 14 years old who were referred to comprehensive centers of urban health and schools in Tehran participated. After calculating the score, the item impact with values higher than 1.5, content validity ratio was more than 0.42 and content validity index was higher than 0.79 all items of sensory profile 2 enumerated. Significant negative correlation between touch processing dimension from the toddler's sensory profile 2 and socialization of the Vineland adaptive behavior scale were reported (P < 0.05). There was a direct and significant correlation between the sensory avoiding aspects of adolescent-adult sensory profiles with all dimensions of the short sensory profile 2 (P < 0.05, r = 0.26, r = 0.62). The range of intra class correlation for the test-retest reliability of the test was in the range of 0.72 to 0.95 and the Cronbach's alpha coefficients were in the range of 0.61-0.91.

Conclusion : The Persian version of Sensory Profile 2 has an acceptable validity and reliability and is usable for sensory processing measure.

Keywords : Psychometric Properties, Validity, reliability, Sensory Profile 2

Count: 494
Abstract ID: 47
subject: Neurorehabilitation and Regeneration: Occupational Therapy
Presentation Type: Poster

Sensory processing of children with autism Spectrum Disorder from 3 to 14 years' old

Submission Author: Marjan Shahbazi

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Background and Aim : The aim of this study was to investigate the sensory processing status of children with autism from 3 to 14 years old based on the children sensory profile 2.

Methods : In this descriptive study, 43 children with autism disorder participated. After completing the demographic questionnaire and obtaining consent, parents of children with autism were asked to complete the children sensory profile 2. Participants' demographic information and sensory processing status were analyzed by SPSS software version 22 based on the cut-offs of the 13 sections of the questionnaire.

Results : In this study, 25.6% of the children were female and 74.4% of them were boys. Frequency of sensory processing disorder based on cut of point the children sensory profile 2 (seeking: 37.2%, avoiding: 53.6%, sensitivity: 55.8%, registration: 60.5%, auditory: 28.8%, visual: 39.6%, touch: 58.2%, movement: 44.2%, body position: 53.5%, oral: 39.6%, conduct: 48.9%, social emotional: 67.6% and attentional: 44.2%).

Conclusion : Awarding to the findings, it can be concluded that increasing the frequency of registration as a sensory processing disorder leads to affecting social emotional responses.

Keywords : Autism Spectrum Disorder, Sensory Processing, Sensory Processing Disorder

Comparing brain-inspired artificial networks against human object recognition

Submission Author: Niloufar Shahdoust

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Background and Aim : Simulation of human visual perception stands out amongst the most important purposes of artificial intelligence. Artificial neural network, a computational model of biological neural network, is assumed as being highly inspired by human visual representation. Thus, understanding the cortical object representation would lead us to ameliorate deep neural network structures. Understanding the mechanisms of representation of objects in visual ventral pathway is achieved by analyzing the responses of neurons across temporal ventral stream. Layers of a deep neural network are claimed to resemble ventral pathway; theories posit that the DNN first layers and last layers are analogous to Retinal Ganglion Cells and Anterior Inferior Temporal respectively. Nevertheless, in theory they work; in practice, some of them fail.

Methods : The main focus of this study is comparison of stages of cortical object representation with neuroscience-inspired deep neural network layers with human object recognition performance. To this end, a dataset comprising of two groups of animate and inamitate line-drawings are divided into three groups: COMP, EDGE, and VERT. COMP group consist of intact line-drawing of animate and inamitate objects, while EDGE and VERT groups are fragmented images of the same objects with only edge and vertex information respectively. On one hand, the stimuli have been shown to sixteen 8 to 12 year-olds and they were asked to name the image for each of the three types. On the other hand, the stimuli were fed into different deep neural networks in order to compare their accuracies to human performance.

Results : Human performance is the best in COMP and the worst in EDGE. However, in the brain-inspired artificial network, not only COMP recognition accuracy could not surpass human performance, but also quite unlike human performance, VERT and EDGE drawing accuracies did not follow the pattern of human performance. This result shows that different networks have distinct preferences in image recognition through different layers of networks. Our observation suggests that DNNs may not function exactly as humans and there is a great chance to efficiently alter those regarding new parameters.

Conclusion : Although being widely used, deep neural networks could not mimic the human visual perception precisely since they fail in some simple tasks done by human, such as line-drawing object recognition.

Keywords : Visual Ventral Pathway; Biological Neural Network; Artificial Neural Network; Deep Neural Network; Cortical Visual Representation

Count: 496
Abstract ID: 120
subject: Neuropsychiatry and Psychology: Disorders of Executive Functions
Presentation Type: Poster

DIR-based Floortime Play Therapy Model in Interventions for Children with Specific Learning Disorders

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Background and Aim : The main purpose of this study is to provide a therapy model to improve cognitive-emotional adjustments in children with specific learning disorders so that these children can more effectively communicate with their peers and their environment. Specific learning disorder is a neurodevelopmental disorder with biological origin that is the basis of cognitive disorders (Karimi, 1986). Learning disorders are characterized by the following symptoms: In writing, difficulty in computing numbers and difficulty in math comprehension, 2) This ability impairment interferes with one's academic and job performance or activities of daily living, 3) these problems begin during the school year 4) should be confronted with an intellectual disability, constipation or hearing problems and other mental or neurological disorders, lack of fluency in teaching language and health problems. Eni should not interfere (Tabrizi, 1979). Specific learning disabilities with a prevalence of 5% to 15% are the most important cause of poor academic performance (Sadok, Sadok, 2011). Among the problems children with learning disabilities face are emotional reactions and cognitive emotion regulation strategies. Emotional cognitive regulation is a specific form of self-regulation that allows us to experience what emotions we are experiencing and when we experience them. How we express them affects (Karimi, 1986)

Methods :). In Greenspan's view, developmental disorders are the result of poorly developed basic abilities, which can be due to malfunction of the child's nervous system or inappropriate parenting style. Therefore, the Floortime treatment space proposed by Greenspan (1997) is a dynamic, interactive, and social-based space that aims to integrate all aspects of human development and improve parent-child relationships. The focus of treatment for DIR is Floortime (Greenspan & Weider, 2006). One of the most widely used developmental interventions is Floortime or a growth-communication model based on individual differences. Floortime is an educational model developed by Greenspan. This program, like traditional therapies, specifically targets areas such as speech or motor development. The focus of this intervention is the manner in which a child's natural emotions and emotional interactions affect their intelligence, linguistic, cognitive abilities, as well as their self-regulation and social skills (Wieder, 2012).

Results :). Accordingly, in this study, we aim at considering the aspects of the DIR approach and its role in the emotional, cognitive, and value development of children with regard to the child's relationship to his or her interests at play, as well as the active role of adults in these relationships, and based on the logic of the integrated developmental approach. Based on DIR, the child can control underlying problems such as irritability, sensory overactivity, and other self-regulation problems through play and communication with parents.

Conclusion : On the cognitive-emotional regulation of children with specific learning disabilities It is worth mentioning that this article is an introduction to the original research using the longitudinal method.

Keywords : DIR-based, Floortime Play Therapy, r Children ,Specific Learning Disorders

Count: 497
Abstract ID: 293
subject: Neurorehabilitation and Regeneration: Psycho-cognitive Rehabilitation
Presentation Type: Oral

Effectiveness of cognitive rehabilitation therapy model for improvement executive functions in high-functions autistic children, by using neuropsychological technique and evaluation of gene expression

Submission Author: Fazlollah Shahraki

Fazlollah Shahraki[1]

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Background and Aim : Autism spectrum disorder (ASD) is known as a neurodevelopmental disorder with difficulty in social relationships, Verbal and non-verbal communication and Repetitive and ritualistic behaviors. Symptoms of this disorder occur before the age 3 and the main reason is unknown. Although genetics is known as the primary cause of autism spectrum disorders, but it is still not clear which genes and molecular mechanisms is effective in the pathogenesis of this disease spectrum. Cognitive rehabilitation treatment may help to reduce the symptoms of ASD. Electroencephalography (EEG) and gene expression analysis could help to examine the effectiveness of these new treatments.

Methods : In present study, an educational program based on Delis–Kaplan Executive Function System (D-KFES) was performed for 20 ASD patients. Expression level of BDNF, CREB1 and FOXP2 genes were assessed in blood samples of ASD patients before and after the D-KFES program by using Real time PCR. Also five minute eyes closed EEG were obtained from ASD patients before and after the educational program. Wisconcin sorting test was used to analyse the effects of D-KFES program on executive functions abilities.

Results : The results showed significant increase in expression level of CREB1 and BDNF genes after the program. Also theta wave of occipital lobe that was high in ASD patients before program had been reduced in patients after program treatment. Wisconcin sorting test showed that D-KFES program was improved the executive functions in all three parameters of test.

Conclusion : Findings revealed that D-KFES program may improve the symptoms of ASD patient. Increasing the expression of CREB1 and BDNF may lead to improve the memory and executive functions. Also brain mapping showed the theta wave of ASDs were increased after the program.

Keywords : : Autism, Delis–Kaplan Executive Function System (D-KFES), gene expression, Electroencephalography

Count: 498
Abstract ID: 336
subject: Emotion, Motivation
and Behavior: Stress and the Brain (Stress-modulated Pathways, Stress and Cognition, Stress Related Disorders)
Presentation Type: Poster

Control of Life Trapped Emotions by Neuroscience

Submission Author: Amene Shahrokhi

Amene Shahrokhi[1]

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Background and Aim : To live a life completely free of trapped emotions would truly be a wonderful thing. It might be achievable, but from what I have observed, there is rarely a person that does not get a trapped emotion from time to time. It seems to be part of the human experience,but understanding of neuroscience can solve some kind of these problems.

Methods : Meta-analysis Approach

Results : When our free ourselves of negative trapped emotions, we will find it easier to choose the positive emotions that will help us to attract what our really want in our life.

Conclusion : The good news is that trapped emotions can be released. When you make a habit of using the Emotion Code regularly, you will be able to avoid the damage that occurs on a subconscious level of thinking and feeling because you will be changing your thought frequencies.

Keywords : Trapped emottion, Art, Neuroscience

Count: 499
Abstract ID: 350
subject: Cognition: Other
Presentation Type: Poster

Relationship between workload and mental pressure with job cognitive error in Shahrood Industrial Park

Submission Author: Nasere Shakeri

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Background and Aim : This research has been done with the aim of relationship between workload (mental demand, temporal demand, physical demand, the need for performance, effort and frustration level) and mental pressure with job cognitive error (error recognition memory, cognitive error, error, error recognition and attention in cognitive functions–motion) in Shahrood Industrial Park

Methods : The method of research was descriptive and its kind was correlational. The statistic society was including of Shahrood Industrial Park company employees with 320 persons whith among them, regard to choice table of Mitchel and Jully in statistic level of 5%, 320 persons were chosen as the sample. The tools of data collection, was Job cognitive failures questionnaire including 30 questions, mental pressure questionnaire including 33 questions and the workload questionnaire with 6 questions were divided into two sets

Results : The acquired data of questionnaires were analyzed by using of Pierson correlation coefficient, enter and Stepwise regression analysis. The results showed that there is meaningful relationship among mental pressure with components of cognitive errors Jobs (error recognition memory, cognitive error, error, error recognition and attention in cognitive functions–motion) (p?0.05). Also there is meaningful relationship between workload (mental demand, temporal demand, physical demand, the need for performance, effort and frustration level) with cognitive errors (error recognition memory, cognitive error, error, error recognition and attention in cognitive functions–motion) (p?0.05)

Conclusion : Paying attention to workload andmental pressure on employees is very important subject and affects their cognitive processes to the extent that it can harm the employee and subsequently the organization.

Keywords : Workload , mental pressure , job cognitive error

Count: 500
Abstract ID: 635
subject: Neural Injuries and Neurodegenerative Disorders: Neurodegenerative Disorders
Presentation Type: Oral

Effects of Cyperus Rotundus Extract on Spatial Memory impairment, Alzheimer's disease and Neuronal differentiation in Beta Amyloid Rat Model

Submission Author: Zeinab Shakerin

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Background and Aim : Alzheimer's disease (AD) is one of the most common neurodegenerative diseases in the population older than 60 years and characterized by, progressive memory and cognitive impairment. Cyperus rotundus, a traditional medicinal herb, has analgesic, sedative, and anti-inflammatory effects. This plant is used to increase memory in Islamic traditional medicine and Arab countries especially in neighboring countries such as Iraq. This study was designed to consider the effects of Cyperus rotundus (C.rotundus(CR)) extract on memory impairment and neurogenesis in Beta Amyloid rats' model.

Methods : Materials and methods: In this study 42 Male Wistar rats were randomly divided into six groups (n= 7) for evaluation of baseline training performance in the Morris water maze test. Then amyloid-beta (Aβ1-42) was injected in animal hippocampal CA1 bilaterally in four groups. The first probeee trial was performed 21 days after Aβ injection, then, the C.rotundus extract in three different doses of 250, 500, and 750 mg/kg were administered to three Aβ injected groups for one month, then after that the second probeee trial was performed and rats were sacrificed after 28 days of the second probeee trial. The neurogenesis was detected in the hippocampus, by immunohistochemical staining.

Results : This study showed that spatial memory increased in a behavioral test in AD treated group with C. rotundus extract, compared with the AD group not received our extract (p=0.02). Also, immunohistochemical staining revealed that neuronal differentiation have been occurred in dentate gyrus of the hippocampus in AD treated group with C. rotundus extract compared with the AD group (p=0.01).

Conclusion : : This study showed that C. rotundus extract, repaired spatial memory impairment in the Aβ rat model, through increased neurogenesis in the hippocampus, which could be related to the flavonoid components in the extract.

Keywords : Cyperus Rotundus; Spatial Memory; Neuronal differentiation

Count: 501
Abstract ID: 633
subject: Emotion, Motivation
and Behavior: Stress and the Brain (Stress-modulated Pathways, Stress and Cognition, Stress Related Disorders)
Presentation Type: Poster

The Effect of Vitamin C on Fear(avoiding) Memory in Isolated Stress Rats

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Background and Aim : Social isolation of rats is a common model used to study the effects of isolation stress on behavior and brain activity. Furthermore, increased anxiety-like behaviors following isolation have been observed in the elevated plus maze, and shuttle-box tests. Social isolation decreased the activities of antioxidant enzymes catalase, glutathione peroxidase, superoxide dismutase, and the total antioxidant capacity, but increased levels of hydrogen peroxide, in certain brain regions, of which prefrontal cortex and hippocampus were most vulnerable. Therefore antioxidant components may through enhancment of antioxidant propertis may cause to improvement of memory and anxiety.

Methods : 32 male Wistar rats (200-250g) were randomly divided into the four groups (n = 8) Control(CO), Isolation stress(IS), Control and vitamin C (Co+V) and Isolation stress and vitamin C (IS+V). In IS groups animals were housed individually in the cages for 21 days. In IS+V and CO+V groups animals were received vitamin C (500mg/kg) for 21 days and in CO and IS animals were received normal saline for 21 days by gavage. After that passive avoidance test was done for considering fear(avoiding) memory

Results : in CO+V and IS+V groups step-through latency was increased in comparison to the control and IS groups and also in CO+V and IS+V groups, the rate of stay in shock(dark) chamber was significantly decreased in CO+V and IS+V groups in comparison to the control and IS groups

Conclusion : This study showed that isolation stress cause decrease in fear(avoiding) memory and vitamin C , repaired and improved this memory in isolation stress rat.

Keywords : vitamin C, isolation stress, memory.

Count: 502
Abstract ID: 97
subject: Cognition: Learning and Memory
Presentation Type: Poster

Vestibular tests: early predictors of Alzheimer's disease?

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Background and Aim : Recent studies have reported the connections between vestibular function and the cognition and also reported more prevalence of vestibular impairment in patients with Alzheimer's disease. Because patients with mild cognitive impairment (aMCI) are more likely to develop Alzheimer's disease, this study was conducted to evaluate vestibular dysfunction of otolith organs in aMCI patients compared to normal subjects.

Methods : Nineteen patients with aMCI with mean age of $62/22 \pm 10/75$ years and 20 normal participants with mean age of $56/25 \pm 7/97$ years were evaluated for ocular and cervical vestibular evoked myogenic potentials (o- and cVEMP) . Occurrence of VEMP responses, amplitude, latency and threshold of these waves were recorded and compared between the two groups.

Results : Ocular VEMP was absent in 60/52% of aMCI patients which was significantly higher than normal group (30 %) ($p = 0.007$), while occurrence rate, amplitude, latencies and threshold of cVEMP were not significantly different between the two groups ($p < 0.05$). There was no significant relationship between occurrences of two potentials in aMCI group.

Conclusion : These findings show the presence of vestibular dysfunction, especially in the pathways of ocular vestibular evoked potential, in patients with amnestic mild cognitive impairment. Given that previous studies have shown that cVEMP was absent in Alzheimer's disease, absence of oVEMP can be used as an indicator for predicting future impairment in individuals with amnestic MCI.

Keywords : Ocular vestibular evoked myogenic potential; Cervical vestibular evoked myogenic potential; vestibular system; cognition; mild cognitive impairment.

Count: 503
Abstract ID: 252
subject: Neural Injuries and Neurodegenerative Disorders: Ischemia, Stroke, and Neurovascular Disorders
Presentation Type: Poster

Combined administration of L- carnitine and L-Arginine protects against ischemia-reperfusion injury in the Brain

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Background and Aim : The present study was initiated to investigate the effect of l-carnitine and Nitric oxide precursor (L-Arginine) on ischemia-reperfusion injury in the brain

Methods : 50 adult male Wistar rats were used in this study. There are 10 rats in each group Group (1) control; group(2) negative control; group (3) rats subjected to cerebral ischemia and treated with L-Carnitine 100 mg/kg; group (4) rats with cerebral ischemia and treated with L-Arginine 100 mg/kg; and group (5) cerebral ischemia and treated with L-Carnitine plus L-Arginine. Cerebral ischemia was induced by bilateral occlusion of the right middle cerebral artery for 1 h followed by reperfusion. Brain catalase, super oxide dismutase (SOD) and brain malonedialdehyde (MDA) were measured and obtained data were compared with one-way ANOVA and Tukey statistical analysis. Statistical significance was set at $P < 0.05$.

Results : L-Carnitine significantly decreased brain MDA concentrations in rats subjected to cerebral ischemia ($P < 0.05$), and increased brain catalase and SOD levels compared to the negative control rats. Brain MDA levels were also decreased in the rats treated with L-Arginine compared to the negative control rats. There was also a significant increase in brain CAT and SOD levels of rats receiving L-arginine alone. Brain SOD and CAT levels were also higher in rats received the combined administration of L-Carnitine plus L-Arginine compared to the negative control rats ($P < 0.001$).

Conclusion : Combined administration of L-Carnitine and L-Arginine has more therapeutic effect compared to the administration of each one alone.

Keywords : L_carnitine;nitric oxide;ischemia;reperfusion;brain

Count: 504
Abstract ID: 34
subject: Neural Injuries and Neurodegenerative Disorders: Demyelinating Disorders
Presentation Type: Oral

Does the serum expression level of high-mobility group box 1 (HMGB1) in multiple sclerosis patients have a relationship with physical and psychological status? A 12-month follow-up study on newly diagn

Submission Author: Mojtaba Sharafkhah

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Background and Aim : There is a strong need to identify simple and cost-effective biomarkers for multiple sclerosis (MS). The present study aimed to evaluate the serum levels of Receptor for Advanced Glycation End-products (RAGE) ligand, the High-Mobility Group Box (HMGB) 1 in newly diagnosed female MS patients and to assess the correlation between serum HMGB1 level and changes in the physical and psychological indicators of MS.
Methods : During the 12-month follow-up, the serum level of HMGB1, Expanded Disability Status Scale (EDSS) score, rate of clinical relapse, quality of life (QoL), and other psychological indicators were assessed in three steps, i.e., at baseline, after six months, and after 12 months. Variables were compared between 60 newly diagnosed female MS patients, and 60 ages matched female healthy controls (HCs); variables were also compared within MS patients. The collected data were analyzed using an independent t-test, Mann–Whitney U test, Two-way repeated-measures analysis of variance (ANOVA) and Spearman's rank correlation coefficient. P-values less than 0.05 were considered statistically significant.
Results : Fifty-nine (98.3%) female MS patients completed this study. During the 12-month follow-up, repeated-measures ANOVA showed a significant decrease in the EDSS score (MD [95% CI]= 2.09 [1.8, 3.2]; P< 0.001) and a significant increase in the serum level of HMGB1 in MS patients (MD [95% CI]= 1.73 [1.2, 2.1], F= 3.41; P= 0.009). The serum level of HMGB1 was higher in MS patients, compared with HCs (baseline: 65.8%, P= 0.007; six-month follow-up: 73.9%, P= 0.004; and 12-month follow-up: 77.6%, P= 0.021). The serum level of HMGB1 in disease-modifying drug (DMD)-negative patients was 48.64% higher than that of the DMD-treated group (P= 0.001) and 83% higher than that of HCs (P= 0.01); however, no significant difference was found between DMD and HC groups. The serum HMGB1 level was not correlated with the EDSS score (r= 0.322, P= 0.18). However, there were significant positive correlations between the serum level of HMGB1 and scores of MS Impact Scale-Psychological Subscale (MSIS-PS) (r= 0.59, P< 0.001), Beck Depression Inventory (BDI) (r= 0.491, P= 0.031), and Pittsburgh Sleep Quality Index (PSQI) (r= 0.471, P= 0.035).
Conclusion : The present findings indicated the role of HMGB1 in MS, particularly in DMD-negative patients. The serum level of HMGB1 could predict the patients' psychiatric status better than their physical status. However, the role of HMGB1 level in MS pathology and psychiatric status warrants further investigations.
Keywords : Biomarker; Inflammation; High mobility group box protein 1; Disease-modifying drug; Multiple Sclerosis

Count: 505
Abstract ID: 304
subject: Neuropsychiatry and Psychology: Obsessive Compulsive Disorders
Presentation Type: Oral

Obsessive Compulsive Inventory-Child Version (OCV-CI) to Evaluate Obsessive Compulsive Disorder in Children With Early Stages of Chronic Kidney Disease: A Case Control Study

Submission Author: Mojtaba Sharafkhah

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Background and Aim : Chronic kidney disease (CKD) is a common medical condition among children and obsessive-compulsive disorder (OCD) is a frequent, chronic, costly, and disabling disorder among them.The aim of this study was to investigate obsessive-compulsive disorder (OCD) in children with early stages of CKD, and to compare it with the occurrence of OCD in healthy children.

Methods : In this case-control study, we evaluated 160 children aged 7 to 17 years old who were visited in the pediatric clinics of Amir-Kabir hospital, Arak, Iran. The control group consisted of 80 healthy children and the case group included 80 children with Stage 1 to 3 CKD. The ages and sex of the children in the two groups were matched. OCD in children was evaluated using the obsessive compulsive inventory-child version (OCI-CV).

Results : The mean scores of doubting/checking (case: 3.52 ± 2.54, control: 2.5 ± 2.32, P = 0.007) and ordering (case: 2.59 ± 1.81, control: 1.5 ± 2.56, P = 0.005) in the children with CKD was significantly higher than in the healthy ones. Moreover, the mean total scores for the OCI-CV of the children with CKD at 15.32 ± 7.69 was significantly higher than the scores of the healthy ones at 11.12 ± 2.54 (P = 0.021). There was a significant correlation between the CKD duration and doubting/checking (P = 0.004, correlation coefficient (CC): 0.4), obsessing (P = 0.06, CC: 0.02), washing (P = 0.031, CC: 0.8), ordering (P = 0.001, CC: 0.2), and the total scores of the OCI-CV questionnaire (P = 0.04, CC: 0.4).

Conclusion : The risk of OCD in children with CKD is significantly higher than that in healthy children. Although the results seem to suggest that psychiatric intervention can be helpful in treating OCD in children with CKD, further investigation into the medical condition is required so as to obtain more definitive conclusions.

Keywords : Child; Chronic; Obsessive-Compulsive Disorder; Renal Insufficiency

Count: 506
Abstract ID: 136
subject: Neural Injuries and Neurodegenerative Disorders: Traumatic Brain Injury
Presentation Type: Poster

Neurocognitive Impairment Prediction of Alteration to Psychological Disorder in Patients with Traumatic Brain Injury

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Background and Aim : Patients with traumatic brain injury (TBI) may present neurocognitive deficits within the first 24 h after trauma, which may lead to long-term functional impairment and change their mental health. The purpose of this study was to investigate the neurocognitive impairment scales in patients with TBI to predict their psychological disorder.

Methods : Eighty patients (aged 16–66 years: 66 % men and 34% women) with TBI participated in the study, which the mean age was 23.5 years-old. The most common causes of TBI was car accident multiple trauma (38%). All patients were evaluated at bedside during two months post-injury. Demographic and clinical data were registered. Neurocognitive impairment was assessed with the Mini-mental state examination (MMSE). Hospital Anxiety and Depression Scale (anxiety and depression) and Posttraumatic Diagnostic Scale for DSM-5 (post-traumatic stress disorder) were used to measure psychological disorder.

Results : The results showed a significant positive correlation between Recall (p=0.001), Language/Praxis (p=0.001), and Attention/Calculation (p=0.001) with psychological disorder. Meanwhile, psychological disorder accounted 4.1% recall, 4% language and praxis with 3.6% of variance for attention and calculation. No significant differences were found in orientation and registration when comparing patients with psychological disorder. Taken together, we found significant neurocognitive impairment in the psychological disorder of patients with TBI.

Conclusion : These findings highlight the need to carefully examine the long-term implications of psychological disorder in TBI patients reported neurocognitive impairment after their injury.

Keywords : Neurocognitive impairment, Psychological disorder, Traumatic Brain Injury

Count: 507
Abstract ID: 608
subject: Neurorehabilitation and Regeneration: Other
Presentation Type: Poster

Oral fl uoxetine in the management of amblyopic patients aged between 10 and 40 years old: a randomized clinical trial

Submission Author: Mohammad Hossein Sharif

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Background and Aim : Amblyopia is the most common cause of visual impairment among children with a worldwide prevalence of about 2 – 3%. Several studies reported diminished clinical improvement after critical period. However, this notion has been challenged by studies, which showed that amblyopia could be managed effectively in children older than 8 years of age and adolescents. finding ways to enhance visual plasticity after critical period may increase the effectiveness of the treatment.

Methods : In this double-blinded, randomized, controlled trial (IRCT2016052428046N1; registered retrospectively), 40 eligible participants with anisometropic or mixed amblyopia were randomly assigned to either fl uoxetine or placebo groups. Participants with anisometropia and logMAR best spectacle-corrected visual acuity (BSCVA) worse than 0.2 logMAR in the amblyopic eye or at least a two-line of difference in the BSCVA between the fellow eyes were included. Participants with signi fi cant ocular or systemic diseases were excluded. In both groups, the better eye of each patient was patched for 4 – 6 h a day during the study period. Participants in the treatment group were treated with oral fl uoxetine for 3 months. Change in the Snellen BSCVA (after 3 months) was regarded as the primary outcome measure.

Results : Data from 20 participants in the ? uoxetine group and 15 participants from the placebo group were analyzed (aged 11 – 37 years). The magnitude of improvement in visual acuity (from baseline to 3 months after treatment) was signi ? cantly higher in the ? uoxetine group (0.240 ± 0.068 logMAR; 2.4 line-gain) compared with the control group (0.120 ± 0.086 logMAR; 1.2 line-gain).

Conclusion : This study suggests bene fi cial effects of fl uoxetine in the management of adult and adolescent amblyopia.

Keywords : amblyopia,fluoxetine,brain plasticity

Count: 508
Abstract ID: 200
subject: Novel and Cutting-Edge Technologies: Drug Discovery and Neuropharmacology
Presentation Type: Oral

Silymarin improved motor manifestations of Parkinsonian patients : A randomized clinical trial

Submission Author: Hamdollah Sharifi

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Background and Aim : In the most advanced stages of Parkinson's disease, patients develop motor complications that are not manageable with current treatments. There is an urgent need for novel neuroprotective treatment options. Silymarin is one of these agents that have neuroprotective properties. This study aimed to evaluate the effectiveness of Silymarin on Parkinson's disease for the first time.

Methods : This was a phase III, randomized, double-blind, parallel group study in which the patients were divided into intervention and control group. The intervention group patients received levodopa, trihexyphenidyl, and Silymarin and the control group patients received levodopa, trihexyphenidyl, and placebo. The patients were visited regularly and evaluated for Modified Hoehn and Yahr scale motor disturbances before and 2, 4 and 6 months after intervention. The mean of motor disturbance scores was compared between the two groups at 4 measured time by using repeated measures ANOVA.

Results : Among 100 patients in the study 53 were males. Their total mean age was 70.00 ± 7.41. The mean duration disease in the Silymarin group was 2.60 year and in the placebo group was 2.21. Silymarin reduced the stage of disease significantly ($p < 0.001$) in comparison to placebo. Silymarin comparison with placebo slowed the slope of the disease process.

Conclusion : Short-term treatment with Silymarin improved motor imbalance and reduced stage of disease in this study. We suggest Silymarin can increase the responsiveness of disease to conventional drugs in Parkinsonian patients.

Keywords : Silymarin, Parkinson's disease, Motor imbalance, Herbal medicine

Count: 509
Abstract ID: 624
subject: Neuropsychiatry and Psychology: Anxiety Disorders and PTSD
Presentation Type: Poster

Investigating the effectiveness of combination of Accelerated Experiential Dynamic Psychotherapy (AEDP) with Transcranial Magnetic Stimulation (rTMS) for reducing the signs of Post-Traumatic Stress Dis

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Background and Aim : Because of identifying the multidimensional nature of AIDS disease (biological, psychological, social and economic factors), such as intense effects on psychological health and patients' quality of life, Experts tried to guide investigations toward determining biological variables of AIDS disease additional to control the psychological and behavioral variables of diagnosing this disease. This study aimed to investigate the effectiveness of combination of Accelerated Experiential Dynamic Psychotherapy (AEDP) with Transcranial Magnetic Stimulation (rTMS) for reducing the signs of Post-Traumatic Stress Disorder in women with sexual abuse.

Methods : This study's design was semi-experimental research design. Statistical population included all women who experienced sexual abuse and referred to therapeutic centers of behavioral and infectious diseases in Urmia city (Spring, 2019). 30 patients were selected randomly and they were located in two groups respectively, Experiment group (15 patients) and Control group (15 patients). The Post Traumatic Stress Disorder Check List (PCL) was used for collecting data. Data were analyzed with Multivariate analysis Covariance (MANCOVA).

Results : Findings showed that combination of Accelerated Experiential Dynamic Psychotherapy (AEDP) with Transcranial Magnetic Stimulation (rTMS) can have a meaningful effects and it can decrease signs of Post-Traumatic Stress Disorder in women with sexual abuse.

Conclusion : Results expressed that combination of Accelerated Experiential Dynamic Psychotherapy (AEDP) with Transcranial Magnetic Stimulation (rTMS) can reduce the sub-sings of Post- Traumatic Stress Disorder in women with sexual abuse.

Keywords : Accelerated Experiential Dynamic Psychotherapy (AEDP), Transcranial Magnetic Stimulation (rTMS), Post- Traumatic Stress Disorder, sexual abuse.

Count: 510
Abstract ID: 627
subject: Neuropsychiatry and Psychology: Other
Presentation Type: Poster

Investigating the Effectiveness of Combination of Accelerated Experiential Dynamic Psychotherapy (AEDP) with repetitive Transcranial Magnetic Stimulation (rTMS) on Psychological distress and physical a

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Background and Aim : Understanding the multidimensional nature (biological, psychological, social, and economic) of AIDS, including the profoundly negative impact on mental health and quality of life in patients with AIDS, has led experts to direct research that furthermore Identify and control the biological and biological variables affecting AIDS in individuals with this disorder. The purpose of this study was to Investigating the Effectiveness of Combination of Accelerated Experiential Dynamic Psychotherapy (AEDP) with repetitive Transcranial Magnetic Stimulation (rTMS) on Psychological distress and physical and psychological well-being in AIDS patients.

Methods : The research method was semi-experimental. The study population included all AIDS patients who referred to Behavioral and Infectious Disease Counseling and Treatment Centers (BDCC) in Urmia in the spring of 2010, 30 of whom were randomly selected and divided into two experimental groups (15). Patients (n = 15) and controls (n = 15). to collect the information required from the mental distress questionnaire (K10), physical and mental health (Katrndal and Ouiaru, 2007) and well-being (WBQ-12)were used .Data were analyzed using multivariate analysis of covariance (MANCOVA).

Results : result showed that the combination of Accelerated Experiential Dynamic Psychotherapy (AEDP) with repetitive Transcranial Magnetic Stimulation (rTMS) had a significant effect on reducing levels of psychological distress and improving physical and mental well-being in patients with AIDS.

Conclusion : The results showed that the combination Accelerated Experiential Dynamic Psychotherapy (AEDP) with repetitive Transcranial Magnetic Stimulation (rTMS) had significant effects on the subscales of psychological distress and physical and psychological well-being.

Keywords : Accelerated Experiential Dynamic Psychotherapy, repetitive Transcranial Magnetic Stimulation, Psychological distress, physical and psychological well-being, AIDS.

Count: 511
Abstract ID: 623
subject: Cognition: Other
Presentation Type: Poster

Investigating the effectiveness of frequent Transcranial Magnetic Stimulation (rTMS) on cognitive and emotional flexibility of patients with Bipolar II Disorder

Submission Author: Farangis Sharifi bastan

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Background and Aim : Bipolar Disorder is one of the most debilitative disorders that can cause intense dysfunctions in interpersonal relationships and individual's quality of life additional to loss of performances. Present study aims to investigate the effectiveness of frequent Transcranial Magnetic Stimulation (rTMS) on cognitive and emotional flexibility of patients with Bipolar II Disorder.

Methods : 30 patients from one of the Tehran psychiatric and psychological clinics have been chosen by purposive sampling. All patients were estimated before and after medical interferences by Beck Depression Inventory-II, Young Mania Rating Scale, Cognitive Flexibility Inventory (CFI) and Emotional Flexibility Inventory (EFI). Patients were classified randomly in two groups: Experimental and Control groups. Experimental group received 20 minutes of frequent Transcranial Magnetic Stimulation (rTMS) as daily 20 minutes of 1 Hertz in Dorsolateral Prefrontal Cortex of right hemisphere and stimulatory Teta breast in Dorsolateral Prefrontal Cortex of left hemisphere. Multivariate Covariance (Mancova) was used for analyzing data.

Results : Results showed that frequent Transcranial Magnetic Stimulation (rTMS) is useful for improving cognitive and emotional flexibility of patients with Bipolar II Disorder.

Conclusion : After medical interference, there were some meaningful changes about cognitive and emotional flexibility and improvement of Bipolar II Disorder between experimental and control groups. Also, the frequent Transcranial Magnetic Stimulation (rTMS) can enhance cognitive and emotional flexibility and help the symptoms of Bipolar II Disorder.

Keywords : frequent Transcranial Magnetic Stimulation, Cognitive flexibility, Emotional flexibility, Bipolar II Disorder.

Count: 512
Abstract ID: 496
subject: Cognition: Other
Presentation Type: Poster

Comparison of defensive styles and cognitive functions (memory, cognitive attention, sustained attention, planning) in individuals with borderline personality traits and normal individuals

Submission Author: Toba Sheibani

Toba Sheibani[1]

1. Master of Psychology

Background and Aim : Personality is an influential factor in general health and well-being and is a well-organized, unified set of relatively stable and stable traits that altogether distinguishes one person from another. Therefore, the present study was conducted to compare the defensive styles in people with borderline personality traits and normal individuals.

Methods : The present study is a causal-comparative study. For this purpose, 30 individuals with borderline personality traits (5 clerics in Tehran in 1997) were selected by convenience sampling and 30 normal individuals by sampling method. Random sampling was selected. Jackson and Claridge Borderline Symptoms Questionnaire (1991) and Andrews Defense Styles Questionnaire and Rescue Cognitive Functions Questionnaire (2013) were administered to the participants. Data were analyzed using SPSS software and descriptive statistics and one-way analysis of variance (ANOVA).

Results : The results showed that there was a significant difference between normal people and those with borderline personality traits in the total score of defensive styles variable and this difference showed that normal people developed Most of the non-growth styles were used, whereas in people with borderline personality traits, this result was reversed. There was also a higher score on cognitive functions of the normal subjects, except for the memory variable, which did not show a significant difference.

Conclusion : Considering the fact that one of the problems of people with borderline characteristics is their judgment and communication problems, the results of this study in the field of evaluation, training of counseling services for people with borderline personality characteristics is important.

Keywords : Defense styles, Cognitive functions, Borderline personality traits

Count: 513
Abstract ID: 465
subject: Neural Injuries and Neurodegenerative Disorders: Ischemia, Stroke, and Neurovascular Disorders
Presentation Type: Poster

Changes in hippocampal distribution and gene expression of insulin-like growth factor 2 (IGF-2) on different days following intracerebral hemorrhage

Submission Author: Shima Shirzad

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Background and Aim : The insulin-like growth factor 2 (IGF-2) is a growth factor and anti-inflammatory cytokine that plays a crucial role in memory consolidation. The present study aimed to examine the variations in distribution and gene expression of the IGF-2 on different days following acute hippocampal damage and cell death resulting from intracerebral hemorrhage (ICH).

Methods : ICH was induced by injection of 100 μL of autologous blood into the left hippocampus of 96 male Sprague-Dawley rats. Then, on postoperative days 1, 3, 7, and 14, samples of brain tissue were collected to perform histopathological, immunohistochemical, and RT-PCR examinations.

Results : The stereological study indicated that the volume of hippocampus and number of neurons had a significant reduction in ICH groups compared to sham groups, and the infarct volume, number of non-neurons and dead-neurons had a significant increase in ICH groups compared to sham groups; Immunohistochemical data showed that IGF-2 increased in ICH groups, and the expression of IGF-2 gene observed in all groups, but no significant difference was seen between sham and ICH groups.

Conclusion : . Increased endogenous IGF-2 as growth and anti-inflammatory factor following hemorrhagic stroke reveals a critical role of this factor in injury recovery.

Keywords : Intracerebral hemorrhage; Insulin-Like Growth Factor 2; Learning and Memory; Hippocampus

Count: 514
Abstract ID: 21
subject: Neuropsychiatry and Psychology: Disorders of Neurobehavior
Presentation Type: Oral

Comparing of understanding and application of the metaphorical phrases of temporal lobe epilepsy and Frontal Lobe seizures children with normal children (four and a half to five years old) Persian -s

Submission Author: Saeede Shojarazavi

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Background and Aim : This study compared ten normal children (4.5-5 years old), ten children with temporal lobe epilepsy and ten children with Frontal Lobe seizures (at the same age). To achieve a better understanding of the disease and cognitive knowledge of all three groups in this comparative study

Methods : The method of this research is descriptive-experimental and has been carried out without any manipulation of variables. The present study is based on the Bialka-Pikal (2003) method.

Results : Children with temporal lobe epilepsy and children with frontal lobe epilepsy answered the questions with a slight difference from normal children. In the test phase, binary cards for children with temporal epilepsy have the most correct response in olfactory and taste senses. And they scored lower on hearing and vision tests than children with frontal lobe epilepsy. However, the children with frontal lobe epilepsy received the least correct response in visual and tactile senses.

Conclusion : Conclusion: Epilepsy has a negative impact on the understanding and application of the child's embodiment metaphorical phrases, and overlooks their cognitive backgrounds as compared to normal children

Keywords : Cognitive Psychology, Metaphor, Frontal Lobe epilepsy, Temporal lobe epilepsy, Persian-speaking Children.

Count: 515
Abstract ID: 90
subject: Neural Injuries and Neurodegenerative Disorders: Traumatic Brain Injury
Presentation Type: Oral

The neuroprotective effects of berberine on the neurological scores, blood brain barrier permeability and brain edema after marmaru method severe traumatic brain injury in male rats: the role of IL-1β

Submission Author: ALi Siahposht khachaki

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Background and Aim : berberine is a flavonoid rich in barberries and many traditional Iranian herbal remedies. Immunomodulatory and ani-apoptotic activities in central nervous system has been shown by this molecule. These properties make it a viable treatment for neurodegenerative diseases like Alzheimer's disease, Huntington, Parkinsons and dementia. However, the exact mechanism of this molecule has yet to be elucidated. Therefore, this study is intended to show the neuroprotective activity of berberine in animal model of traumatic brain injury (TBI).

Methods : thrity minutes after traumatic brain injury induction by Marmarou free fall method, berberine three different doses (10, 20 and 50mg/kg) were adiministered intraperitoneally. VCS of animals were recorded perior (pre), after (D0), 24 hours later (D1), 48 hours (D2) and 72 hours (D3) after TBI induction. Vestibulomotor tests were evaluated by Beam Walk (BW) and Beam Balance (BB) tests in similar fashion. To determine permeability of Blood-Brain Barrier (BBB) and brain edema 24 hours after TBI induction, Evans-Blue dye and Wet-Dry methods were employed respectively. Cerebrospinal fluid (CSF) was collected 72 hours after TBI induction to evaluate the levels of a proinflammatory cytokine (IL-1β) and anti-inflammatory cytokine (IL-10).

Results : results have shown that inducing TBI can cause decline in VCS, cerebral edema, BBB dysfunction, vesibulomotor impairment, and alteration of cytokines in favour of inflammation in CSF. Nevertheless, i.p administration of berberine in 10 and 20mg/kg can attenuate these finding. Also, beberine (20 mg/kg) effectively increased IL-10 and decreased IL-1? in CSF. All findings were more noticeable in 20mg/kg berberine dose.

Conclusion : Single dose of berberine (10 or 20mg/kg) can effectively increase the activity of anti-oxidatve enzymes and attenuate the injury iduced by trauma. Although, all effects were more pronounced with 20mg/kg berberine.

Keywords : Berberine, Traumatic brain injury, Neuroprotection, Neuroinflammation,Rat

Count: 516
Abstract ID: 73
subject: Cognition: Learning and Memory
Presentation Type: Oral

The effect of cognitive load on the retrieval of long term memory: an fMRI study

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Background and Aim : One of the less well-understood aspects of memory function is the mechanism by which the brain responds to an increasing load of memory, either during encoding or retrieval. Identifying the brain structures which manage this increasing cognitive demand would enhance our knowledge of human memory. Manipulating load in working memory has been studied previously, but there is only one fMRI study on manipulating cognitive load in long term memory.

Methods : In a novel design, we asked 32 (18F) healthy young volunteers, with the mean age of 30.16 ± 6.4 (20-39 years old), to memorize all possible details of 24 images over a 12-day period ending two days before the fMRI scan; by this, each participant had two nights of sleep before the scan, as the memory consolidation phase. Using the Depression Anxiety Stress Scales (DASS-21), Rey Auditory Verbal Learning Test (RAVLT), and Forward and Backward Digit Span tasks, the participants were checked to have a healthy mind and memory function. The images were of 12 categories relevant to daily events, with each category including a high and a low load image. Behavioural assessments on a separate group of participants (#22) provided the average loads of the images and approved our selection of images. The participants had to retrieve each previously memorized image in 15 seconds after hearing the retrieval cues during the fMRI scan, with their eyes closed; the high and low load trials were randomly intermixed and presented. We used a 3T Prisma MRI scanner, and 355 fMRI data volumes were acquired which increased the statistical power of the study.

Results : Using both categorical and parametric fMRI design and data analyses, we observed eight brain structures showing the highest activation with increasing load of the retrieved images, viz. parahippocampus, cerebellum, superior lateral occipital, fusiform and lingual gyri, hippocampus, angular gyrus, and precuneus. Some structures showed reduced activation when retrieving higher load images, such as the anterior cingulate, insula, and supramarginal and post central gyri. The parametric study also showed a linear activation increment in six similar brain areas with increasing load, including precuneus, posterior cingulate, lingual gyrus, parahippocampus, fusiform, and cerebellum.

Conclusion : The findings of this study revealed that the same network of brain areas show an elevated activation under a higher LTM retrieval load, compared to acquiring additional brain regions, which is a help to better understand the LTM storage and retrieval processes.

Keywords : Long term memory; cognitive load; functional MRI

Count: 517
Abstract ID: 656
subject: Emotion, Motivation
and Behavior: Neural Basis of Human Behavior
Presentation Type: Poster

Evaluation of neural connectivity and features of EEG signals in healthy and individuals with cognitive impairment

Submission Author: Farhad Soleymani

Farhad Soleymani[1]

  1. Dr. Abharian

Background and Aim : Emotion is considered as one of the influential cognitive parameters in daily activities. Emotional activities in different situations and on different cognitive groups have different effects on brain and behavioral activities. Finding the relationship between brain activity in different emotional states will greatly aid in diagnosis and treatment as well as enhancing cognitive activity.

Methods : The results of feature extraction showed that there is a significant difference between healthy and cognitive impaired groups in the extracted features.

Results : By extracting features and classifying these data across all tested groups, it is possible to improve the performance and performance of those groups by classifying disorders with their specific treatment modalities.

Conclusion : By extracting features and classifying these data across all groups, it is possible to obtain methods for classifying different groups, with specific therapeutic approaches, to improve those features and thereby improve their performance.

Keywords : EEG Connectivity Emotion ADHD Autism

Count: 518
Abstract ID: 273
subject: Novel and Cutting-Edge Technologies: Brain Mapping   (MRI, fMRI, PET, Brain Mapping, EEG, EMG, QEEG, FNIRS)
Presentation Type: Poster

Electroencephalography source imaging(ESI) as a diagnostic tool in Patients with magnetic resonance negative focal epilepsy (MRN-E)

Submission Author: Yunus Soleymani

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Background and Aim : Epilepsy is a type of central nervous system disorder that causes abnormal brain activity. These abnormal activities can result in seizures, unusual behaviors, or even loss of consciousness. Magnetic resonance imaging is a very useful modality for detection of epileptic lesions. Despite advances in MR imaging techniques, MRN-E (magnetic resonance negative focal epilepsy) is still the most difficult scenario for diagnostic and treatment planning, especially in patients with extratemporal lobe focus of lesion. Electroencephalography (EEG) source imaging (ESI) can contribute to identification of the epileptic focus in patients with normal MRI. The purpose of this study was to investigate whether ESI can improve diagnostic accuracy of MRN-E patients.

Methods : We reviewed the related published articles in Science Direct, PubMed and Google Scholar using keywords such as "epilepsy", "MRI", "EEG", "ESI" and "MRN-E". About 10 fully relevant articles were extracted and reviewed. Then the effect of ESI in accurate diagnosis of epileptic lesions was assessed.

Results : In all papers long-term video-EEG recording was performed using standard EEG with 19, 21, or 31 electrodes and impedances were kept below 10 kOhm. Then epileptic spikes detectable in surface EEG were used for ESI imaging. Studies showed that ESI correctly localized the epileptic focus within the resection margins and in some studies ESI could even localize the epileptic focus outside the resection margins.

Conclusion : The results of our study showed that ESI imaging can effectively improve diagnostic and treatment accuracy of epilepsy and encourage broadening its application to patients with MRN-E.

Keywords : "epilepsy", "MRN-E", "EEG", "ESI"

Count: 519

Abstract ID: 451

subject: Cognition: Executive Function (Decision Making, Reasoning, Problem Solving)

Presentation Type: Poster

Effective of Transcranial Direct Current Stimulation(tDCS) on reaction time and risky Decision-Making in people with Depression

Submission Author: Fateme Soltani margani

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Background and Aim : The impairment in Cognitive functions are common symptoms of Depression. The purpose of this research is investigation of the effect of transcranial direct current stimulation (tDCS) on risky Decision-Making and reaction times (RT) in patients with Depression.

Methods : Thirty university students with depressive symptoms who were referred to the Counseling Center of Azarbaijan Shahid Madani University were selected and randomly divided into two groups : experimental and sham groups (n=15 per group). The experimental group received anodal-tDCS stimulation over the left DLPFC for two weeks, 5 days a week and each session for 20 minutes. Risky decision making and reaction time were assessed by Balloon Analogue Risk Task (BART) and reaction timer apparatus, respectively. The obtained data were analyzed using covariance analysis and paired t-test.

Results : : The Results showed that the reaction times of both hands and feet was significantly faster in experimental group than sham group (p <0.05). Moreover, adjusted mean number of pumps (AMP) was lower in the experimental group than in the control group, during the BART task.

Conclusion : according to our result, anodal tDCS stimulation reduced reaction time and decreased risk-taking behaviors. Therefore, transcranial electrical stimulation can be used as a non-pharmacological and safe intervention to improve cognitive impairment to enhance the cognitive functions in people with depression.

Keywords : transcranial direct current stimulation (tDCS), reaction time, risky Decision-Making, Depression

Count: 520
Abstract ID: 456
subject: Cognition: Attention
Presentation Type: Poster

Effective of Transcranial Direct Current Stimulation(tDCS) on Semantic attention in people with Depression

Submission Author: Fateme Soltani margani

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Background and Aim : The impairment in Cognitive functions are common symptoms of Depression. The purpose of this research is investigation of the effect of transcranial direct current stimulation (tDCS) on Semantic attention in patients with Depression.

Methods : Thirty university students with depressive symptoms who were referred to the Counseling Center of Azarbaijan Shahid Madani University were selected and randomly divided into two groups : experimental and sham groups (n=15 per group). The experimental group received anodal-tDCS stimulation over the left DLPFC for two weeks, 5 days a week and each session for 20 minutes. Semantic attention was assessed by semantic stroop test. The obtained data were analyzed using covariance analysis and paired t-test.

Results : The Results showed that the Semantic attention was significantly faster in experimental group than sham group (p <0.05).

Conclusion : according to our result, anodal tDCS stimulation Increased Semantic attention. Therefore, transcranial electrical stimulation can be used as a non-pharmacological and safe intervention to improve cognitive impairment to enhance the cognitive functions in people with depression.

Keywords : transcranial direct current stimulation (tDCS), Semantic attention, Depression

Count: 521
Abstract ID: 194
subject: Cognition: Learning and Memory
Presentation Type: Poster

Theta oscillations in the hippocampal-prefrontal pathway: importance in the cognitive performance

Submission Author: Hamid Soltani Zangbar

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3. Ageing Research Institute, Tabriz University of Medical Sciences, Tabriz, Iran.

Background and Aim : The prefrontal cortex (PFC) is a core structure for the execution of diverse higher cortical functions known as cognition. PFC connects to the hippocampus, and together synchronize and transmit acquired information during cognitive behaviors. Numerous evidences exhibit that theta oscillations provide communications between these two crucial areas during functional, executive, and cognitive performances.

Methods : Various databases such as google scholar, Pub Med and Science direct were reviewed and 70 papers were selected. Of these, 40 articles were selected as the main essay for writing this review.

Results : Theta rhythms relay hippocampal inputs to the prefrontal cortex during memory and learning tasks as well as cognitive malfunctions like schizophrenia and integrate these two regions. The direct and indirect connection between hippocampus and PFC through structures such as thalamus and amygdala lead to the formation of various circuits between them. Miscellaneous animal studies indicate that theta phase-locking is disturbed in psychiatric disorders such as schizophrenia and depression.

Conclusion : Based on these documents, theta rhythm has a key role in the hippocampal-prefrontal connections, but further studies are needed to disclose the precise role of theta rhythm fluctuations in the hippocampal-prefrontal pathway.

Keywords : theta rhythm, hippocampal-prefrontal pathway, cognition, memory

Count: 522
Abstract ID: 198
subject: Cognition: Learning and Memory
Presentation Type: Poster

Spatial Memory Deficits Following Spinal Cord Injury

Submission Author: Hamid Soltani Zangbar

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Background and Aim : Cognitive disturbances has been reported in spinal cord injury (SCI) patients, but it is not clear whether such malfunctions may reflect concurrent brain injury, and the problem has not been addressed mechanistically.

Methods : we had two groups; Sham (8) and moderate SCI (8) animals and studied effects of thoracic spinal cord contusion in rats on spatial memory with using T-maze. hippocampal apoptosis was assessed with Tunnel staining and western blotting for detection of Caspase3. Hippocamapl neurogenesis evaluated with detecting DCX and BrdU which injected three days consecutively three days befor sacrificing. Expresion of receptors like muscarinics and NMDA, important in the cognition, was studied with western blotting.

Results : Results Showed significant deficit in the spatial memory three weeks after recovery of SCI (P < 0.005). Apoptosis was increased in the hippocampus and neurogenesis decreased significantly (P < 0.005). Expression of muscarinic and NMDA receptors were lower in the SCI group (P < 0.005).

Conclusion : These studies show that SCI induces chronic brain neurodegeneration and disrupts hippocampus dependent spatial memory.

Keywords : SCI , Spatial Memory, Neurodegeneration

Count: 523
Abstract ID: 480
subject: Emotion, Motivation
and Behavior: Motivation and Emotion
Presentation Type: Poster

Children's Emotion Recognition task: Design and Psychometric properties

Submission Author: Zahra Soltaninejad

Zahra Soltaninejad[1], Reza Khosrowabadi [2], Vahid Nejati [3]

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Background and Aim : Facial expression is one of the most important social indicators that allows people to know our emotions. Emotion recognition is mostly defining as an ability to understand facial expressions. The study is aimed at designing a test to measure emotion recognition in children and determining its psychometric properties

Methods : A test consists of 44 (male/female and mild/intense) facial expressions were designed to measure 6 basic emotions. 242 students were selected using cluster sampling method

Results : Split-halves and Kuder-Richardson coefficients were used to assess reliability of the test. In order to assess internal consistency Pearson coefficients were calculated between total score and 6 scales. Relationships between total score of Emotion Recognition, Interpersonal Reactivity Index (IRI) and Theory Of Mind test (TOM) were calculated to show validity

Conclusion : The results showed that the test is reliable and valid. Therefore, it can be used in developmental studies and those research with the purpose of investigating emotion recognition especially in children.

Keywords : Recognition, Emotion, Child, Psychometric properties

Count: 524
Abstract ID: 109
subject: Computational Neuroscience: Virtual Reality
Presentation Type: Oral

Effective Treatment for Acrophobia by Virtual Reality Techniques

Submission Author: Minoo Tabandegan

Minoo Tabandegan[1], Jalal Jalal Shokouhi [2], Ali Akbar Khadem [3]

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3. Biomedical Engineering (PhD)

Background and Aim : VR (Virtual reality) is a new technology to make a better understanding of what we will face in real world. There are many applications of VR in different fields of science.Now, VR has an important position in Medical and Paramedical Sciences from surgery, therapy, rehabilitation and also cognitive sciences. Possibility to generateing a 3D model from a human body, various and controlable environments , allow the specialist to describe a special situation for the patients. controling the environment and the objects by both specialist and the patient, enable physiologist to control the process of activity in patient's brain in the right way. Physiologist and specialist are able to create any environment to improve anxiety disorders, including fear of height, elevators, thunderstorms, and public speaking and flying, in his/her office with safe situation. In this study, by defining an elevated space, we made it possible for a person with a phobia to wear a headset in that environment. Then, the individual will be able to overcome their fears with the guidance of their therapist and place in the environment.

Methods : We generate stimuli that could be utilized in desensitization therapy by 3D modeling of environment. It can be modeled in line with patient phobia such as pilot experiments, fear of flying, fear of heights, fear of being in dark area, bridge over a river, and in the presence of an animal and fear of public speaking. We start our simulation environment based on programing software (unity) and we make the environment according to the patient background in the software. In addition we set a goal for the person in the VR environment and encourage him to follow it. Computer graphics and input technologies are integrated to give the user a sense of presence or immersion in the VR. As soon as the patient start to play the in the VR (when the tester wearing VR headset glasses) we started recording his behavior and give him a score of level of feedback by a questionnaire. The persons were evaluated based on the dedicated value was assigned to each level of feeling and was determine the mental performance assessment score for the individual under different conditions.

Results : There is no limitation for person to start therapy and person can use the system in the home. and we have the Min risk for therapy and do not need to have any specialplaces. In this research we have found that an increase in the feeling of immersion was directly correlated to a physiological response.A person's physiological behavior reflects one's complete belief in the environment built in front of his or her eyes.

Conclusion : In this study at the first we introduce Key topics and basic foundations related to VR and then discuss about potential of this technology for enhancing better understanding of brain activities.So we describe VR and the technic, with the aim of enhancing the level of brain activity and how to get its feedback. Phobia therapy is the case study of this research and we develop the environment according to treatment.

Keywords : Virtual reality, Acrophobia, Phobia, Unity software

Count: 525
Abstract ID: 408
subject: Novel and Cutting-Edge Technologies: Other
Presentation Type: Oral

Landolt paradigm as a Task design to study reading features in eyetracker : pilot study

Submission Author: Niloufar Tabandeh

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Background and Aim : In this pilot research, we intend to study eye movements in the reading process and use a new paradigm to eliminate semantic and spelling effects. The Landolt paradigm has been used with strong evidence of structural studies in other languages. Due to fundamental differences in the Persian language, we have redesigned the eye tracker task with this paradigm. We use it to examine the pattern of eye movements while reading the standard text and following the same design with Landolt. The Eye trackers are devices that measure eye movements like fixation and saccade. In new systems, infrared beam is used for detecting the gaze in each sample rate, so we can measure the pattern of eye movements or even the visual attention. The Landolt paradigm is a visual scanning task intended to evoke reading-like eye-movements in the absence of orthographic or lexical information.

Methods : For task design, all letters in sentences of the text are exchanged with closed Landolt rings. As a target for searching, random numbers of these circles change with open rings, Landolt symbol. We used the standard font of elementary school textbooks in size of 14 to create five standard three-line texts that contain words up to third-grade level. In the first place, for normalization, task was performed on adults and then on healthy children. Task contain five standard text and five Landolt that are the same with their texts. Participants must read the standard text load and in Landolt part they must count the circles. We investigate the speed and accuracy of reading, and compare the pattern of eye movements in two groups with eyetracker's Heatmap and Gaze path.

Results : The descriptive results show that the speed of eye movement on the texts is slower in children. and eyetracker's Heatmaps illustrate different patterns, but both groups have more regressive saccades in reading with orthographic contents.

Conclusion : Beside several differences in eye movement patterns between children and adults, there are a correlation between speed and error in both groups.

Keywords : Landolt paradigm , eye tracker, reading

Count: 526
Abstract ID: 134
subject: Cognition: Other
Presentation Type: Poster

Masked Semantic And Translation Priming Effects In Bilinguals

Submission Author: Hoda Taghilou

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Background and Aim : In the present study, we examined bilingual memory organization, using the masked priming paradigm. The aim of the present research was to study the differences of first and second language understanding in bilingual students.

Methods : In this experiment 51 Turkish–Persian bilinguals participated in a semantic and translation masked priming study in which a lexical decision task was used.

Results : The results revealed significant translation-priming effects in the L1-L2 directions and, also, significant semantic priming in the L1–L2 direction. Furthermore students participated in a non-semantic task. The results revealed no differences in reaction time of students in both L1-L2 and L2-L1 direction.

Conclusion : With regard to models of bilingual lexical memory, the revised hierarchical model, it is successful in predicting the semantic- and translation priming asymmetries that have been reported. Since the link between the conceptual store and the L2 lexicon is weaker than the link between the conceptual store and the L1 lexicon, it has been suggested that priming in the L2–L1 direction will be weaker and lower in magnitude than that obtained in the L1–L2 direction. This phenomenon can be attributed to the fact that less semantic information is accessed in the L2, resulting in decreased priming effects for both semantic and translation word pairs in the L2– L1 direction. And maybe, because the letters in the two languages are the same, and it doesn't make any difference in non-semantic task.

Keywords : masked priming ;bilingual; translation priming;semantic priming

Count: 527
Abstract ID: 113
subject: Pain and Sensory Systems: Other
Presentation Type: Poster

Spinal microglia dependent BDNF as a key modulator in Thermal Hyperalgesia and spinal neuron apoptosis association

Submission Author: Mona Taghizadeh

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Background and Aim : Inflammatory pain is a major clinical problem in several disorder. Following peripheral inflammation, neuronal and microglia cells release inflammatory mediators and growth factors like BDNF. BDNF, is a neurotrophic factor with important biologic roles in neuronal survival and differentiation not only produced by neurons but also by microglia. On the other hand, functional and structural changes (apoptosis) of pain pathway due to release of various mediators, play a sophisticated role in development of chronic pain. In this study, we investigated the role of microglia dependent BDNF in the complex scenario of interaction between spinal neuron apoptosis and pain behavioral responses.

Methods : Thermal hyperalgesia assessed by means of Radiant heat apparatus on 0, 7, 21 days of study after Persistent inflammation induction by CFA. Minocycline, as microglia inhibitor, was administered during the 21 days of study. Microglial activity, microglia dependent BDNF expression and apoptosis assessed by western blotting.

Results : Our findings revealed that CFA-induced inflammation significantly increased hyperalgesia and spinal neuron apoptosis increased at first week after injection and decreased at the third week of study. Moreover, in parallel with these variations, Microglial activity and microglia dependent BDNF significantly increased during acute phase of CFA-induced inflammation.

Conclusion : These results suggested that during CFA induced inflammatory pain model, thermal hyperalgesia increased due to increment of spinal neuron apoptosis. In our study, we showed that peripheral inflammatory pain can be effectively controlled by microglia dependent mediators specially, BDNF which required further investigations.

Keywords : Inflammatory pain, Microglia, Apoptosis, Thermal hyperalgesia, BDNF

Count: 528
Abstract ID: 559
subject: Cognition: Other
Presentation Type: Oral

Does caffeine therapy improve cognitive impairments in valproic acid rat model of autism?

Submission Author: Farahnaz Taheri

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Background and Aim : Autism spectrum condition is a neurodevelopmental disorder. Pregnant rats' exposure to valproic Acid (VPA) causes cognitive deficits in pups similar to those observed in humans with autism- like behaviors. Caffeine therapy is an important pharmacological research line for studying the involvement of adenosine receptors in cognitive functions. Here, we investigate the effects of caffeine on cognitive, anxiety-like behaviors and social functions of offspring's rats following congenital VPA administration using by Morris water maze (MWM), Elevated plus maze, and three chamber social assay, respectively.

Methods : On postnatal day 21, male rats received caffeine orally in drinking water at a dose of 1mg/mL for 30 days. The pups were divided into four groups as follows: (1) vehicle (treated by saline), (2) VPA group, (3) Caffeine group and (4) VPAþCaffeine

Results : We observed remarkable learning and memory impairments, increased anxiety like behaviors and social interaction deficits which were observed in autism rats can improve after caffeine therapy.

Conclusion : our results suggest that VPA could disrupt some aspects of cognitive, social and anxiety-like behaviors but chronic administration of Caffeine may partly restore these behaviors close to vehicle treated animals in this rat model.

Keywords : Autism; Valproic Acid (VPA); Caffeine; Morris water maze; plus maze; social interactions

Count: 529
Abstract ID: 556
subject: Computational Neuroscience: Modeling and Simulation
Presentation Type: Poster

Dimension reduction in the computational model of the CaMKII phosphorylation process

Submission Author: Zeinab Tajik Mansoury

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Background and Aim : CaMKII (Calcium calmodulin-dependent protein kinase II) is one of the important protein kinases in the hippocampus. Phosphorylation of CaMKII is due to the Ca2+ (calcium II ion) concentration increasing for short term in the postsynaptic neuron. The phosphorylation of CaMKII can lead to LTP (Long Term Potentiation) induction in the synapses. The significance of the CamKII phosphorylation process has motivated some researchers to develop computational models of this process. However, these models are very detailed and complicated and also can not be used for dynamical analysis purposes. So, in this paper, we present our simplified model of CaMKII phosphorylation process. The model does not have unnecessary complexities and can easily be used for dynamical analysis purposes.

Methods : Here a Hodgkin-Huxley type approximation method is used to model the CamKII phosphorylation process. We considered the twelve_dimentional nonlinear model of the CamKII phosphorylation (Borjkhani et al.,2018)as a black box, which its input and output are Ca2+ and phosphorylated CamKII, respectively. We inserted different step inputs into the validated model. The outputs were the step responses of a first-order system. Therefore, we recorded steady-state and time constant of response for each concentration of Ca2+. Then we identified nonlinear relation of Ca2+ with the time constant and the nonlinear relation of Ca2+ with steady-state of CaMKII phosphorylation by choosing high adjusted R square models.

Results : We calculated the output signal of phosphorylated CaMKII of our first-order model and the twelve_dimentional model for 19 times. We used the hypothesis test with student's t distribution, one of the statistical inference methods(Lyman Ott et al.,1977), to compare our model and the twelve_dimentional model results. We set the equality of mean of the sampling distribution of two models for each time sample as the null hypothesis(H0) and inequality of mean of the sampling distribution of two models for each time sample as the alternative hypothesis(HA). Then we used student's t distribution to find the probability of observation assuming that the H0 is true. So, we calculated the p_value for each time sample. The results show that for 99 percent of time samples, the H0 was not rejected. Therefore, we can confidently state that means of these two model sampling distributions are equal by the significance level of 0.01. Then, our proposed model is validated to be used for the purposes mentioned.

Conclusion : The presented simplified model can be used for different purposes, such as modeling of LTP and memory formation for neurodegenerative diseases like drug addiction.

Keywords : Dimension Reduction; CaMKII phosphorylation;nonlinear dynamic model;computational model

Count: 530
Abstract ID: 591
subject: Cognition: Executive Function (Decision Making, Reasoning, Problem Solving)
Presentation Type: Poster

A review of the decision-making process based on the dual-process theory

Submission Author: Sara Tarvand

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Background and Aim : One of the cognitive functions of the brain is decision making, which refers to the process of choosing from a set of options. This process has always attracted the attention of many researchers because of its importance in psychology and management.Until now, the dominant theory in this field was unlimited rationality, but in recent years one of the most popular theories has been the dual processing theory which explains the human decision-making process under two systems 1 and 2.

Methods : Our method of gathering information in this article was to search the keywords of decision making and dual processing theory in google scholar and science direct databases and to review articles in this domain between years 2010 and 2020 to investigate our question

Results : This theory has largely been able to explain the behavior of choice in the field of economics because using rationality theory we could not explain choices that are not profitable, but the dual processing theory has justified such choices. But it always faces challenges in this direction because it does not specify what distinguishes these different mental processes from one another and does not provide a detailed description of the functioning of these two systems, but rather a general theory of the possible origin of the arguments and errors

Conclusion : In this article, we intended to review the research in this area to answer the question of whether the dual-processing theory has been able to provide a proper and accurate picture of the decision-making process and to answer the questions in this region. We have found that this theory may start a new path, but there is still a long way to go and there are many vague issues to address.

Keywords : Decision-making; the dual-process theory; review

Count: 531
Abstract ID: 526
subject: Neuropsychiatry and Psychology: Addiction (Drug, Alcohol, Internet, Food) and Gambling
Presentation Type: Poster

Methamphetamine injection during pregnancy decreases STIM2 in different brain regions of rat's offspring

Submission Author: Romina Tavassoli

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Background and Aim : There has been a large increase in the overall abuse of Methamphetamine (MA) in recent years and indications report that its use among pregnant women may also be increasing. Whereas its use continues to grow worldwide, yet what is known about the effects of use during pregnancy is limited. The aim of this study was to investigate calcium release form intracellular calcium stores, following prenatal MA exposure, in the rat's offspring through measurement of STIM2.

Methods : : Female Wistar rats, weighing an average of 200 were used. All rats were kept in temperature-controlled room (25±10), on a 12 h (light): 12 h (dark) cycle. Female rats were housed with male rats and there was always two females one male per cage. From the day 10 to 20 of gestation female rats were intraperitoneally injected with MA (2 and 5 mg/kg) at 10 a.m. per day. Pups were sacrificed 8 to 10 weeks after birth then STIM2 levels in the Hippocampus, Amygdala and Prefrontal cortex areas were measured via western blotting test.

Results : Data have shown that STIM2 level decreased in prenatally MA induced male and female rats in comparison to control group. Statistical analysis revealed that there were significant difference in the STIM2 level in Hippocampus ($P<0.0001$), Amygdala ($P<0.0001$) and in Prefrontal cortex ($P<0.0001$) of male rats between groups. Also in female rats there were significant difference in the STIM2 level in Hippocampus ($P<0.0001$), Amygdala ($P=0.0006$), Prefrontal cortex ($P<0.0001$) between groups.

Conclusion : Our data demonstrated that treatment with MA decreases STIM2 levels and as STIM2 is a key regulator of Ca2+ channels therefore it interferes with calcium release from intracellular calcium stores.

Keywords : STIM2, Pregnancy, Methamphetamine

Count: 532
Abstract ID: 616
subject: Cognition: Executive Function (Decision Making, Reasoning, Problem Solving)
Presentation Type: Poster

Relationship between sleep quality and Executive Functions in patients with high blood pressure

Submission Author: Sima Tavosi Jonaki

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Background and Aim : Objective in current study: The purpose of this study was to investigate the relationship between sleep quality and executive functions in patients with high blood pressure. Study community: 40 subjects between 37-55 years old with high blood pressure were selected in medical clinics in Tehran City in 2017. They were matched with 40 healthy person who didn't blood pressure. They were matched in age, sex, education level and smoking history. Then the Pittsburgh Sleep Quality Index (PSQI) was used to assess sleep quality in both groups and tests of assessment (Visual prob task and N-Back) of attentional bias and working memory were implemented on them for assessing execute functions. Research design: The current study was a correlation research

Methods : First, the Pittsburgh Sleep Quality Index (PSQI) was filled and then the tests of assessment (Visual prob task and, N-Back) of attentional bias and working memory were implemented on them. The collected data were analyzed with SPSS software through Two-way analysis of Variance.

Results : Total PSQI score, sleep latency, sleep duration, average use of sleep aids and sleep disturbances in patients with high blood pressure were significantly higher than the control group. When executive functions impairment were compared, statistically significant relationship was established between cognitive impairment and sleep quality.

Conclusion : The findings indicated that bad sleep quality in high blood pressure is common as well as executive function deficits. This showed that there is relationship between sleep quality and executive function in high blood pressure. But it is noticeable that know, improving sleep quality improves work memory and attentional bias, performance or decreasing blood pressure improves working memory, attentional bias and sleep quality. It is necessary more studies to find the best answer for that.

Keywords : Sleep quality; Executive functions; High blood pressure.

Count: 533
Abstract ID: 154
subject: Neuropsychiatry and Psychology: Other
Presentation Type: Poster

The peridiction of social anxiety based on perceived social support and individual loneliness among the female students of the University of Qom in the academic year 2017_18

Submission Author: Fereshte Toghiyani Rizi

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Background and Aim : Introduction: The present study was conducted with the aim of predicting social anxiety based on Perceived Social Support and loneliness Scale in female students of Qom University in the academic year of 2017-18.

Methods : Material and method: The research method was correlation and using a proportional sampling, 354 students were selected. The research instrument included Watson and Friend's social anxiety questionnaire (1969), Zimet's Multidimensional Scale of Perceived Social Support (1988) and Russell's Loneliness Scale (1980).

Results : Results: The data were analyzed using descriptive and inferential statistics. At the descriptive level, the statistical indices such as frequency, percentage, mean, standard deviation were used and at the inferential level, Pearson correlation and regression analysis were used. After analyzing the data, the results showed that there was a two-way and significant relationship between social anxiety, loneliness and perceived social support ($p > 0.05$) and According to the results of regression analysis.

Conclusion : Conclusion:The variables of perceived social support and loneliness were able to predict social anxiety, so that high level of perceived social support indicates low social anxiety and high level of feeling of loneliness, predicted higher level of social anxiety. Also, there was a negative and significant relationship between perceived social support and social anxiety ($p > 0.05$).

Keywords : Social Anxiety, Perceived Social Support, Loneliness, Qom University

Count: 534
Abstract ID: 416
subject: Computational Neuroscience: Computational Tools
Presentation Type: Oral

Robust and Automated Sorting Algorithm Using General Spike Detection

Submission Author: Ramin Toosi

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Background and Aim : Neural activity monitoring is the basis for understanding the brain behavior. The recorded activity is a combination of multiple neurons activities corrupted by noise. A main step in analyzing of this data, is to differentiate among different neuron activities. Spike sorting is the process of assigning each detected spike to the corresponding neurons. That is to say, spike sorting is a clustering procedure where spikes are the samples that are clustered. Thus spikes in one cluster are assumed to belong to the specific neuron. There exist several challenges for spike sorting algorithms: complex noise, non-Gaussian, skewed cells and time overlapped spikes due to the simultaneous activity of several neurons. While different spike sorting algorithms are developed, yet there exists no universal algorithm that performs well in all situations.

Methods : Mixture modeling is one of the successful clustering algorithms usually used in spike sorting methods. Primary works focused on Gaussian mixture models, however, it has been shown that mixture of t-distributions is more powerful than Gaussian mixtures in modeling neural data. By using mixture of Gaussian or t-distribution, we assume that the clusters are symmetrical, however, skewed clusters are reported in the literature. In this paper, we propose a new clustering method based on skewed t-distribution. Our proposed clustering method, could handle non-symmetrical clusters alongside preserving powerful features of symmetrical t-distribution like heavy tails. In addition, we introduce two preprocessing algorithms, which are a new alignment algorithm, and a statistical filtering algorithm for noise removal. In alignment phase, we propose to align detected spikes based on multiple target (aligning) points corresponding to the shapes of other spikes, instead of just aligning according to their extremum. For noise removal, the statistical characteristics of the spike shapes are used and false alarms (noise detected as spike) are removed accordingly.

Results : The performance of the proposed method is investigated using artificially simulated and real datasets. Results show that the preprocessing algorithms improve the recall and precision of detection phase. Also, the alignment algorithm improves the compactness of clusters in terms of within cluster distance. The noise removal algorithm is also compared with a manual sorting results, which shows that, on average, 90% of removed spikes by the algorithm is also removed by human operator. In the clustering phase, results on simulated data shows an improvement over purity and accuracy of the sorting results. Also, the automatically determined number of clusters, is closer to the manual sorting results, than mixture of t-distributions method.

Conclusion : The proposed method has three main contributions: 1) considering skewness for clusters, 2) new alignment algorithm, 3) statistical filtering for noise removal. We show that using the proposed method have some advantages in both detection and clustering phases. In detection, the correct detection rate is increased, while the false alarm is decreased. In clustering phase, the number of neurons could be determined more precisely alongside with pure and accurate clusters. However, estimating the skewness parameters, adds additional computational complexity to the proposed method.

Keywords : Spike Sorting, Mixture of Skew t-distributions, Spike Detection, Spike Alignment

Count: 535
Abstract ID: 262
subject: Neuropsychiatry and Psychology: Disorders of Executive Functions
Presentation Type: Poster

Theta burst stimulation (TBS) over DLPFC enhances executive functions in depressed patients

Submission Author: Sepide Toursina

Sepide Toursina[1]

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Background and Aim : Executive function includes many skills such as self-monitoring, task monitoring, inhibition, shift, emotional control, initiation, planning organizing, working memory. Executive function disorder is not a specific, standalone diagnosis or condition. Instead neurological, mental health and behavioral disorder, such as depression can affect a person's executive function. the Dorso-Lateral Prefrontal cortex exhibits decreased connectivity with the dorsal anterior cingulate in depressed elderly and is a key in orchestration of executive function. A newer form of rTMS protocol , Theta burst stimulation (TBS) is a highly efficient repetitive transcranial magnetic stimulation (rTMS) variant employed in experimental and clinical treatment paradigms. TBS involves pulses being applied in bursts of three at high frequency (50hz) with an inter burst interval of 200ms (5hz, which is in the range of theta frequency). In cTBS Either 300 pulses (20s) or 600 pulses (40s) of TBS are delivered without any interruption. This paradigm reduces cortical excitability beyond its stimulation duration by approximately 20 min for 300 pulses of cTBS and up to 1 hr for 600 pulses of cTBS. In iTBS ,2s of TBS trains (30pulses) are repeated every 10 s for 190s, with a total number of 600 pulses. TBS over DLPFC modulates working memory performance and executive processes.

Methods : This article is a review of published articles regarding Theta burst stimulation over DLPFC and executive functions in depressed patients.

Results : The role of the executive function in the human left dorsolateral prefrontal cortex (LDLPFC) was explored using transcranial magnetic stimulation (TMS) after confirming the LDLPFC activation using fMRI. researches have explored the ability of cTBS and iTBS to modulate working memory and executive functions. Both protocols resulted in similar working memory and information processing speed outcomes, whereas their effect on executive functions differed: cTBS impaired inhibitory control but improved planning abilities in a spatial task, meanwhile, no specific effects were observed following iTBS. The iTBS paradigm was effective in improving mood and executive function in older adults. Both the psychometric measure and the self-reported executive function measure (indicative of dysexecutive behavior) reflected improvements post iTBS. Improvement in executive function was correlated with depression improvement

Conclusion : TBS protocol have a major advantage over standard rTMS approaches in their reduced administration duration. TBS protocols hold high promise in neuropsychological rehabilitation thanks to its ability to induce lasting effects on cortical excitability following a short delivery time. Nevertheless, its ability to inhibit (continuous protocol, cTBS) or facilitate (intermittent, iTBS) brain function from cortical areas other than the motor cortex remains to be fully established.

Keywords : transcranial magnetic stimulation, Theta burst stimulation, Dorsolateral prefrontal cortex, DLPFC, executive function, depression.

Count: 536
Abstract ID: 314
subject: Cognition: Learning and Memory
Presentation Type: Oral

The role of medial prefrontal cortex and its glucocorticoid receptors on fear memory extinction

Submission Author: Abbas Ali Vafaei

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Background and Aim : Fear extinction is induced when the conditioned stimulus is repeatedly presented without the aversive outcome unconditioned stimulus, resulting in a decline of conditioned fear response. In rodents, fear responses are typically assessed via freezing behavior or the fear-potentiated startle reflex.

Methods : Also recent studies revealed that stress and its related hormones modulate the extinction of various memories, including of spatial and auditory fear conditioning. It has been showed that brain glucocorticoid receptors (GRs) are involved in many processes such as fear extinction that drive learning and memory.

Results : In this review, we discuss the role of medial prefrontal cortex and its glucocorticoids receptors on fear memory extinction. Also we review some behavioral, pharmacological and neurochemical studies from our laboratory on rodents, which might contribute to our understanding of the complex processes of memory extinction. More importantly, we discuss the pre-reactivation (memory extinction) effects of systemic as well as intra-infralimbic of medial prefrontal cortex infusions of agonist and antagonist of GRs on fear memory extinction.

Conclusion : Our findings indicate that medial prefrontal cortex and its glucocorticoid receptors have important role on modulate of fear memory extinction in the rodents.

Keywords : Glucocorticoid receptors, Fear memory extinction, Medial prefrontal cortex, Rodents

Count: 537
Abstract ID: 563
subject: Development: Neurodevelopmental Disorder (ADHD, Autism, Learning Disorders)
Presentation Type: Poster

Effectiveness of child-centered play therapy on Resiliency and Improvement mother-child interaction in children with attention deficit- hyperactivity disorder

Submission Author: Samira Vakili

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Background and Aim : The purpose of this study was to determine the effectiveness of a child-centered play therapy on Resiliency and Improvement on mother-child interaction in children with attention deficit hyperactivity disorder(ADHD).

Methods : The research method is quasi-experimental, and employed a pretest-posttest design. The statistical population includes all 7-12 year-old children with AD HD in Tehran's Psychology Clinic. For the sample selection, 30 children with attention deficit hyperactivity disorder were selected in medical records and randomly assigned to two groups of 15 as experiment and control. The method of research sampling was available and purposeful. The child-centered therapy game was performed for 10 individual sessions, twice a week, and each session lasted 45 minutes in the experimental group. The Resiliency problems in children were measured by using the sears questionnaire and mother-child interaction in children were measured by using the pianta questionnaire

Results : Data were analyzed by single-variable covariance analysis (ANCOVA).The findings of the research showed that there is a significant statistical difference between the experimental and control groups

Conclusion : The child-centered play therapy increased the resilience (EF=0.67)and improve the mother-child interaction(EF=0.52) in children with attention deficit / hyperactivity disorder in the experimental group.

Keywords : child centred play therapy,mother-child interaction ,Resiliency,attention deficit hyperactivity disorder

Count: 538
Abstract ID: 312
subject: Development: Neurodevelopmental Disorder (ADHD, Autism, Learning Disorders)
Presentation Type: Poster

The Effects of Family-centered Structured Games using Lego Bricks on the Impulsiveness of Children with Attention Deficit and Hayperactivity disorder

Submission Author: Samira Vakili

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3. Ma in Psychology and Education of Exceptional Children

Background and Aim : One of The most common symptoms of Attention Deficit and Hyperactivity Disorder is lack of impulsivity, due to the inactivity of behavioral inhibition system that is associated with the ability to self-regulation, analysis and synthesis of behavior, goal-directed behavior, problem solving, and cross-temporal organization.so the aim of this study was to study the effectiveness of family-centered structured games using Lego bricks on the impulsiveness of Children with Attention Deficit and Hyperactivity

Methods : The research method was a pretest-posttest test with control group in this study. The statistical society of this study included all children aged 7 to 9 are at a rehabilitation center in Tehran. For this purpose, 30 children were selected by available sampling. Child Behavior Checklist (Achenbach, 2001) was used to evaluate the impulsiveness. The experimental group participated in family-centered structured games using Lego bricks in 16 sessions for 60 minutes.

Results : The obtained data were analyzed by using Analysis of Covariance. The results showed that family-centered structured games using Lego bricks had a significant effect(EF=0.82)on the impulsiveness of the participating children (P< 0.01).

Conclusion : At the end, using Family-centered Structured Games using Lego Bricks for improving resiliency of Children with Attention Deficit and Hayperactivity was discussed. Further discussions as well as suggestions for future research were presented.

Keywords : family-centered , Lego bricks, Impulsiveness, Attention Deficit and Hyperactivity Disorder

Count: 539
Abstract ID: 44
subject: Neural Injuries and Neurodegenerative Disorders: Neurodegenerative Disorders
Presentation Type: Oral

Knowledge, Attitude and Practice of Patients with Multiple Sclerosis toward Their Medications: The Impact of Pharmacist-Based Pharmacotherapy Clinic

Submission Author: Nastaran Valitabar

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Background and Aim : Pharmacists are the key members of the multidisciplinary team caring for patients with multiple sclerosis (MS) in drug treatment process. The potential benefits of pharmacist interventions in the concepts of patient education, may be optimize drug treatment and decrease hospitalization due to poor adherence. The goal of pharmacist' interventions regarding treatment process is supporting patients' decision-making and self-care management. The aim of this study is to evaluate the role of pharmacist in decrease interferon beta related problems in patients with MS.

Methods : In this interventional pre-post design study, we prepared a questionnaire consist of 17 items to assess the patients' knowledge on correct using of interferon-beta, and actions needed to reduce the side effects of medication and improve the control of the disease symptoms. After validity and reliability test based on opinions of a multidisciplinary panel, pre-testing on 15 patients, 15 items remained. One hundred patients, who were diagnosed with MS and receiving interferon-beta for at least one year, answer the questionnaire before and after pharmacist consultation.

Results : Patients' achieved scores before and after consultation, were 4.90 ± 5.79 and 14.44 ± 0.99 respectively. Although they have received this medication for at least 1 year, and there is a significant difference between knowledge of patients before and after pharmacist educational program ($P< 0.001$).

Conclusion : There are few studies evaluating the potential impact of pharmaceutical care on patients with MS. The results of this study show that most participants didn't have enough knowledge about interferon-beta while they received this medication for at least one year. Pharmaceutical care could improve the patient's knowledge, adherence and practice about their medications.

Keywords : Pharmacists; Interferon-beta; Multiple Sclerosis; Pharmaceutical Services; Patient Care Team

Oral & Poster Presentations

8th Basic and Clinical Neuroscience Congress
December 18-20, 2019
Razi Hall, Tehran, Iran

Iran University of Medical Sciences

Iranian Neuroscience Society

Count: 540
Abstract ID: 178
subject: Epilepsy, Neural Excitability, Synapses, and Glia: Seizure and Epileptic Disorders
Presentation Type: Poster

The evaluation of the 2-deoxy-D-glucose effect on hippocampal levels of interleukins (IL-10 and IL-1β) in hippocampus in model of temporal lobe epilepsy in the male rat

Submission Author: Somayeh Vazifekhah

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Background and Aim : Epilepsy is a recurrent brain disorder. This condition has arisen from abnormal the excessive electrical activity of neurons in different parts of the brain. Temporal lobe epilepsy is one of the most common and drug-resistant type of epilepsy. ketogenic diet is a common treatment for controlling seizures in drug-resistant epileptic children and adult with refractory epilepsy. 2-DG is an analogue of glucose which can enter the cell through glucose transporters due to structural similarity with glucose. By inhibition of glycolysis, 2-DG diverts the energy pathway to the pentose phosphate shunt and mimics the ketogenic effects in the body. Epilepsy is always accompanied by inflammation. On the other hand, the increase of inflammatory cytokines in the brain can lead to the development of seizure. In some studies, the protective effects of 2-deoxy-D-glucose (2-DG) has been detected. in some neurodegenerative diseases such as Parkinson's, Alzheimer's. In this study, we try to measure the effects of 2DG on hippocampal levels of interleukins (IL-10 and IL-1β) in an experimental model of temporal lobe epilepsy in the rat.

Methods : 50 male Wistar rats were randomly divided into 4 groups as follows: 1. Control/ vehicle group (2-DG solvent): n=10 2. 2-DG group (intraperitoneal injection of 125mg/kg 2-DG): n=10 3. KA group (injection of 0.8μg kainic acid in 1 μg normal saline into the left ventricle): n=10 4. 2-DG+KA (pretreatment injection of 125 mg/kg 2-DG half an hour before induction of epilepsy): n=10 Hippocampus of 25 epilepsy-induced rats was freshly removed and homogenized for detection of IL-1β and IL-10 concentration with ELISA test. The brain of 25 rats were used for immunohistochemistry detection of IL-10-secreting cells.

Results : The level of IL-1β was significantly increased after epilepsy. However, in 2DG treated epileptic group the level of this inflammatory cytokine decreased, showing the anti-inflammatory properties of 2-DG. A significant increase in IL-10 concentration was also observed in KA+2-DG group vs KA group. The IHC results revealed positive IL-10 neuron in CA3, hilar and dentate gyrus regions of the hippocampus

Conclusion : 2-DG has an effective role in controlling inflammation in epilepsy by inhibiting IL-1β and producing IL-10 which is an anti-inflammatory cytokine.

Keywords : Temporal lobe epilepsy, IL-1β, IL-10, 2-deoxy-D-glucose (2-DG)

Oral & Poster Presentations

8th Basic and Clinical Neuroscience Congress
December 18-20, 2019
Razi Hall, Tehran, Iran

Iran University of Medical Sciences

Iranian Neuroscience Society

Count: 541
Abstract ID: 523
subject: Neuropsychiatry and Psychology: Other
Presentation Type: Poster

Effectiveness of Mindfulness-Based Stress Reduction on Resilience, Severity of pain and Quality of life in Patients with migraine

Submission Author: Mehdi Yaghobi

Mehdi Yaghobi[1]

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Background and Aim : Migraine is one of the most common headaches that affect the quality of life. The aim of this study was to the effectiveness of mindfulness-based stress reduction (MBSR) on resilience, severity of pain and quality of life in patients with migraine.

Methods : In this semi-experimental study, pre-test and post-test, 40 patients with migraine referred to Beheshti Hospital of Qom were selected, randomly. The experimental group was received 8 session of MBSR. While the control group did not receive any interventions. To collect data, SF-36, pain scale and Conner-Davidson Resilience scale (CD-RIS) were used. Data were analyzed using SPSS-21 software and descriptive and inferential statistics methods.

Results : The result of this study showed that MBSR training increased resilience and quality of life score and decreased severity of pain in patients with migraine ($p < 0.001$).

Conclusion : The mindfulness training can use as an effective and accessible intervention in the headache treatment.

Keywords : Mindfulness, Resilience, Quality Of Life, Migraine, Pain

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Count: 542
Abstract ID: 524
subject: Emotion, Motivation
and Behavior: Motivation and Emotion
Presentation Type: Poster

Investigating the Relationship between Depression and Quality Of life in MS patient: Determining the mediating role of Anger

Submission Author: Mehdi Yaghobi

Mehdi Yaghobi[1]

1. Neuroscience Research Center, Qom University of Medical Sciences, Qom, Iran

Background and Aim : The aim of this study was to Investigating the relationship between Depression and quality of life in MS patient: determining the mediating role of anger.

Methods : 130 patients were selected by convenience sampling of MS association of Qom. Participants filled out the STAXI-2, Beck-II and SF-36 questionnaire. Then, data were analyzed by using correlation and structural equation modeling tests.

Results : Findings indicated that there is a significant correlation between depression and quality of life in MS patient. The statistical model for measuring the mediating role of anger in the relationship between depression and quality of life fitted well with the data. The effect of depression on quality of life was statistically significant. Anger (P <0.01, b = 0.42) had a significant effect on depression.

Conclusion : Anger and depression had a significant correlation with mobile dependency, but when impacted by a model, impulsivity had stronger and more predictive effects on mobile dependency.

Keywords : Depression, Quality Of life, Anger.

Count: 543
Abstract ID: 392
subject: Cognition: Learning and Memory
Presentation Type: Poster

Bee honey attenuates the memory loss and depression like behavior that induced by chronic unpredictable mild stress in rat

Submission Author: Azadeh Yazdi

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Background and Aim : Stress is an organism's response to internal or external stimulation. This natural response may get the living system ready to preserve its homeostasis. Chronic and higher levels of stress play a key role in the induction of various clinical disorders by altering the HPA axis and antioxidant defenses. Cognitive processes, such as learning and memory, are affected by chronic stress. Chronic unpredictable mild stress (CUMS) induces hippocampal oxidative stress which mainly involved in neurodegenerative disorders such as Alzheimer's disease. Bee honey is a natural and accessible product that has exhibited antioxidant capacity. Our study investigated the effects of bee honey pretreatment on two stress comorbidities, memory deficits, and depressive-like behavior, by examining the changes with Morris water maze memory test and sucrose performance tests in the CUMS.

Methods : 1o days before CUMS induction, honey (dose 0.2 and 2 g/kg, daily, orally) was delivered to the rats and continued until euthanasia. Animals were exposed to CUMS for 28 days. After this duration, the Morris water maze memory test and sucrose performance test was performed.

Results : Escape latency became progressively shorter across training sessions. A further analysis revealed that there are significant differences in escape latency at day 2 and 3 ($p < 0.01$, 0.05 respectively) between CUS and the control group, while honey administration (2 g/kg) significantly improved such deficiencies ($p < 0.05$ at day 2, 4 and $p<0.01$ at day 3 compare to stress group). To determine the degree of memory, on the fifth day the time that the animals spent in the target quadrant was recorded. Rats exposed to CUS spent less time in the target quadrant compared to the control animals, while treatment with honey (2 g/kg) reversed these changes ($p<0.05$). Also, chronic treatment with honey at both doses significantly increased the percentage of sucrose consumption, as compared to the stressed rats ($P<0.001$)

Conclusion : Our results showed that pretreatment with honey in the chronic unpredictable mild stress conditions decreased the learning and memory loss and also has a beneficial effect on depression-like behavior.

Keywords : Bee honey, learning and memory, Morris water maze, sucrose performance

Count: 544
Abstract ID: 486
subject: Neurorehabilitation and Regeneration: Other
Presentation Type: Poster

Neuroprotective and antioxidant effect of bee honey in the rat hippocampus under chronic unpredictable mild stress

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Background and Aim : Chronic stress, an external or internal stimulation, severely increases HPA activity, free radicals component, lipid peroxidation, and decrease in total antioxidant capacity in the hippocampus, which induces inflammation, neuronal loss, and neurodegeneration. Bee honey is a natural and accessible product that has exhibited antioxidant capacity. Honey has different components, such as phenolic acids, flavonoids, coumaric acid. These ingredients prevent auto-oxidation reactions and free radicals production. In the current study, we investigated the pretreatment effect of honey on total antioxidant capacity (TAC), malondialdehyde (MDA) as lipid peroxidation index, and neuronal loss in the hippocampus of the animals that were affected by the chronic mild unpredictable stress (CUMS).

Methods : 1o days before CUMS induction, honey (dose 0.2 and 2 g/kg, daily, orally) was delivered to the rats and continued until euthanasia. Animals were exposed to CUMS for 28 days. After this duration, the hippocampus was collected and stored at -80°C. TAC and MDA kit were used respectively to analyze the differences of total antioxidant capacity and lipid peroxidation in control and treated groups. Also, three brain samples were fixed in each group for further histological analysis. Nissl staining was performed to evaluate the cell density in CA1 and CA3 of the hippocampus.

Results : A trend of increased and decrease in TAC and MDA, respectively, has been shown in the hippocampus of the stressed animals, which were under pretreatment with honey, but data was not significant. Neuronal loss in both CA1 and CA3 of the stress group was significantly higher than the control animals (P<0.001). Quantitative analysis of Nissl staining revealed an increase in cell density in treated groups compare to the CUMS group (P<0.01 and P<0.001 in CA1 and CA3 in a dose of 2 g/kg respectively and P<0.05 in CA1 in a dose of 0.2 g/kg).

Conclusion : Pretreatment with honey in the chronic mild stress conditions may improve antioxidant capacity, prevents lipid peroxidation, and also has a neuroprotective effect on hippocampal neurons.

Keywords : Bee honey, hippocampus, neuroprotection, total antioxidant capacity, malondialdehyde

Count: 546
Abstract ID: 45
subject: Development: Other
Presentation Type: Poster

MR spectroscopy of brain tumors. .

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Background and Aim : Advanced imaging techniques, including diffusion tensor imaging (DTI), perfusion-weighted imaging (PWI), and magnetic resonance spectroscopy (MRS) can provide more information than that regarding anatomy.These techniques have been commonly used in the clinical field and recently been shown useful in diagnosing brain tumors, especially in cases difficult to specify using conventional imaging. Differentiation requires more than attention to each advanced image.Diagnostic accuracy improves by combining information from MRS with that from other sequences, such as maps of apparent diffusion coefficient (ADC) and fractional anisotropy (FA) generated from DTI and of cerebral blood volume (CBV) generated from PWI.

Methods : As MR imaging is applied further to cellular and molecular imaging (e.g., imaging of gene transfer and expression), more possibilities for brain tumor diagnosis and treatment will become evident.

Results : MR spectroscopy is a non-invasive technique for measuring tissue metabolites. Changes in tissue metabolites may be useful for diagnosing or characterizing primary and other brain neoplasms, planning treatment, and assessing the results of treatment. Ongoing improvements in equipment and pulse sequence design may make full brain spectroscopy clinically practical in the near future. The authors review the basic concepts of MR spectroscopy and its use in clinical management of brain neoplasms

Conclusion : MRS proved to be a useful tool supporting MRI in establishing the type of brain tumor.MRS also enabled the proper differential diagnosis in cases of large inflammatory tumor-like lesions.

Keywords : MR spectroscopy, brain tumors, clinical field

Count: 547
Abstract ID: 335
subject: Cognition: Attention
Presentation Type: Poster

Investigation of cortical communication created in the stroop test using functional near-infrared spectroscopy (fNIRS)

Submission Author: Mitra Yousefpour

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Background and Aim : Introduction: The Stroop test is a well-known model for semantic conflict processing in cognitive neuroscienc. Stroop interference denotes the decline in performance under the incongruent condition, which requires selective attention and control of competitive responses. Functional near-infrared spectroscopy (fNIRS) can identify activated brain regions associated with the Stroop interference effect.

Methods : Methods: Twelve right handed healthy controls were investigated by means of a multi-channels fNIRS unit during the execution of the Stroop test. Effective connectivity changes in the prefrontal cortex between Stroop attentional conflict and rest states were calculated using DCM approach to investigate (1) areas known for selective attention and (2) to analyze inter-network functional connectivity strength (FCS) by selecting several brain functional networks.

Results : Results: The results indicated that during incongruent condition, an increased activity was recorded in the LDLPFC while under neutral condition, the increase in activity in those areas was even more pronounced. Stroop interference effect associated with a significant consistent increase in the RDLPFC to DMPFC, LDLPFC to DMPFC and LDLPFC to RPFC effective connectivity strengths.

Conclusion : Conclusion: This research aimed to identify the neural correlates associated with the Stroop tasks within the brain activated regions. The use of DCM algorithm for fNIRS data with respect to fMRI has provided additional information about the directional connectivity and causal interactions in LPFC networks during a conflict processing. Eventually, high temporal resolution fNIRS can be a promising tool for monitoring functional brain activation under the cognitive paradigms in neurological research and psychotherapy applications.

Keywords : Stroop, fNIRS, connectivity, prefrontal cortex, attention.

Count: 548
Abstract ID: 538
subject: Emotion, Motivation
and Behavior: Behavioral Pharmacology
Presentation Type: Poster

Effects of Injections of Pramipexole and steroid Hormones in to Hippocampus on motor skill learning in rats

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Background and Aim : Dopamine (DA) plays a key role in motor performance, motor skill learning, and motor cortex synaptic plasticity.In recent years, many studies have shown that different dopamine agonists have different effects on motor skill memory. Pramipexole is a dopamine agonist and Used to treat Parkinson's disease. It binds to presynaptic and postsynaptic dopamine D2 and D3 receptors but has the highest affinity for the dopamine D3 receptor subtype. By activating mediator neurons or in steroid environment, neurotransmitters produce different physiological effects. Therefore, the aim of this study was to determine the effects of co-injection of Pramipexole and steroid Hormones in to Hippocampus on motor skill learning in rats.

Methods : In this experiment, twenty Male Wistar rats weighing 200-250 g were randomly divided into the 4 following groups (n=5 rats/group): control, pramipexole (2μl), pramipexole (2μl) along with estradiol (1μl) and Pramipexole (2μl) plus progesterone (1μl) .fixed speed rotarod test used for evaluation of motor skill learning after 1,3 and 24 hour of injection . The latency to falling was compared and analyzed. One-way analyses of variance (ANOVA) followed by Turkey's post hoc test, were used for analysis of the data.

Results : The collected data showed that intra-hippocampal injection of Pramipexole significantly decreased latency to falling after1and 3 hour of injection (p<0.05). Also, co-injection of Pramipexole and steroid Hormones significantly reduce motor skill learning in 1 and 3 hour after injection (p<0.001) and the latency to falling was significantly increased 24h after injection compared to previous time(p<0.001). The information that collected in 24 hour after injection showed that there is no significant difference between experimental group (p>0.05).

Conclusion : These results revealed a significant decrease in the motor skill learning by pramipexole but it has not long-duration effects. Also there is an interaction between pramipexole and steroid hormones in modulating of motor skill learning

Keywords : Pramipexole, Estradiol, progesterone, motor skill learning, rotarod

Count: 549
Abstract ID: 272
subject: Emotion, Motivation
and Behavior: Stress and the Brain (Stress-modulated Pathways, Stress and Cognition, Stress Related Disorders)
Presentation Type: Oral

The effect of sub-anesthetic dose of ketamine on memmory deficiencies induced by depression

Submission Author: Elham Zahedi

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Background and Aim : Depression is a major psychiatric disorder that is associated with high rates of suicide and is considered one of the most important causes of human disability. Depression is considered a neuropsychiatric condition which is associated with neuronal injury within specific brain regions. depression is usually accompanied by cognitive impairments in the domains such as memory, cognitive flexibility, attention and executive functioning. Ketamine, as an NMDA receptor antagonist, is a rapid antidepressant. The discovery of the antidepressant effect of ketamine is a very important development in the field of antidepressant drugs.

Methods : The aim of this study was to evaluate whether ketamine can improve the negative effects of depression on memory. For this purpose, 30 male rats were used. Animals were randomly divided into three equal groups, and except the control group, the other ones were depressed by CUMS method. Then, ketamine group was treated with the sub-anesthetic dose of ketamine. Finally, behavioral parameters were measured.

Results : It was found out that treatment with the sub-anesthetic dose of ketamine could markedly increase the step through latency (STL) time as an index of recall in comparison to depressed rats. Also, alternation behavior as spatial memory index was insignificantly decreased in control animals Compared with depressed group and this behavioral parameter was insignificantly increased in group of ketamine relative to depressed group. Therefore, treatment with sub-anesthetic dose of ketamine could antagonize memory deficits of depression induced by CUMS in rats.

Conclusion : Perhaps, this plant could be a potential factor in the treatment of memory deficiencies induced by depression.

Keywords : depression, ketamine, ECT

Count: 550
Abstract ID: 317
subject: Emotion, Motivation
and Behavior: Neural Basis of Human Behavior
Presentation Type: Poster

Study of intracerebroventricular microinjection of kaempferol on anxiety: possible GABAergic mechanism involved

Submission Author: Mohammad Zarei

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Background and Aim : Kaempferol (KM) is one of the most important plants constituent with neuroprotection and analgesic effects. In this study, intracerebroventricular microinjection of KM on the anxiety and its interaction with GABAergic mechanism has investigated in male rats.

Methods : In this experimental study, the male rats were divided to following groups: control (saline), groups treated by KM (0.5 and 2 μg/rat), DMSO (1μg/rat), KM 0.5+Bicuculline/BIC1 μg/rat, KM 0.5+BIC4 μg/rat, KM 2+BIC1 μg/rat, BIC groups (1, 4 μg/rat), and KM 2+BIC 4 μg/rat. Besides, elevated plus maze test (EPM) was used for evaluation of the anxiety.

Results : Statistical analysis exhibited that time spent in the elevated plus maze open arms in KM groups (0.5 and 2 μg/rat) had shown significant difference in comparison to control ($p<0.05$, $p<0.01$, respectively). Moreover, in related to involvement of GABAergic system in anxiolytic like activity of KM, it is demonstrated that the time spent in open arms related to co-administration of KM (0.5μg/rat) with bicuculline (1μg/rat) significantly was lessen than control group ($p<0.05$).

Conclusion : According to the obtained results, the use of KM is likely can improve anxiety through GABAergic mechanism(s).

Keywords : Anxiety, Kaempferol, GABAergic mechanism, Bicuculline

Count: 551
Abstract ID: 610
subject: Cognition: Working Memory
Presentation Type: Oral

Sensory information Modulate the Coupling of Spikes to LFP Phase

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Background and Aim : Neural activity is either measured by spiking activity or local field potentials (LFPs). Spikes or action potentials provide information about the activity of single neurons. This type of activity may encode sensory information, for instance, neurons in macaque middle temporal area (MT) fire at different rates as a function of the direction of motion when the moving stimuli are presented inside their receptive fields. These activities, are further modulated by high-level cognitive functions, such as attention or adaptation.

Methods : In this work, we investigated whether sensory information could be represented by SPC. For this purpose, we calculated the tuning curve based on SPC values. To estimate the SPC tuning curve, we computed the interconnection between spikes and the phase of LFP oscillations as a function of stimuli.

Results : We found that the phase-locking follows a tuning curve based on the presented stimulus' conditions. This function is inverted compared to the tuning of the spike rate.

Conclusion : This finding suggests a functional role of SPC for sensory processing and information decoding.

Keywords : working memory; sensory information; spike-phase coupling (SPC); tuning curve; adaptation; attention

Count: 552
Abstract ID: 337
subject: Cognition: Other
Presentation Type: Poster

Intraperitoneal injection of Neuroaid on alteration of Stathmin levels in the prefrontal and striatum regions following total sleep deprivation in male Wistar rats

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Background and Aim : Studies show that sleep is a fundamental need and is essential for survival. Long-term sleep deprivation has negative effects on health, memory, learning and mechanisms of neural plasticity.Stathmin is one of the important proteins involved in neural plasticity. Stathmin plays a key role in synaptic plasticity and consequently in neural plasticity by controlling microtubule stability and dendritic translocation of AMPA receptors. On the other hand, recent research shows that Neuroaid has neuroprotective property and can increase neural plasticity.

Methods : In this study we investigated the effect of intraperitoneal injection of Neuroaid on alteration of Stathmin levels in the prefrontal and striatum regions following total sleep deprivation in male Wistar rats.

Results : The results showed that sleep deprivation significantly reduced the Stathmin levels in the prefrontal and striatum regions.

Conclusion : Intraperitoneal injection of Neuroaid compensates the decrease in neuronal plasticity caused by sleep deprivation and significantly increases the Stathmin levels in the prefrontal and striatum regions.

Keywords : Sleep deprivation, Neural plasticity, Stathmin, Neuroaid

Count: 553
Abstract ID: 461
subject: Neural Injuries and Neurodegenerative Disorders: Neurodegenerative Disorders
Presentation Type: Oral

The Comparison of the Effects of Different Transcranial Electrical Stimulation (tES) Paradigms on Beta-Amyloid (Aβ 25-35)-Induced Memory Impairment upon Morris Water Maze Task in Male Rats

Submission Author: Amir Hossein Zarifkar

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Background and Aim : In light of therapeutic limitations in Alzheimer's disease (AD), recent alternative or add-on treatment approaches such as non-invasive brain stimulation through transcranial electrical stimulation (tES) have gained attention. Translational studies have postulated that transcranial direct current stimulation (tDCS) is potentially a novel therapeutic option to reverse or stablize cognitive impairments. The aim of this study was to comparatively evaluate the effects of the four main paradigms of tES, including tDCS, transcranial alternative current stimulation (tACS), transcranial random noise stimulation (tRNS), and transcranial pulse current stimulation (tPCS) on beta amyloid 25-35 (Aβ 25-35)-induced memory impairment in male rats submitted to the Morris water maze (MWM) task.

Methods : To develop AD model in Sprague-Dawley male rats weighing 250-270, the cannula was implanted bilaterally into the hippocampi. Aβ 25-35 (5 μg/2.5 ml/ day) was microinjected bilaterally for 4 days. Then, tES was applied to the animals for 6 days. Subsequently, rats' learning and memory function was evaluated on day 11-14 in MWM task.

Results : Our findings indicated that tDCS, tACS, tRNS reduced escape latency, while such an effect was not observed in tPCS paradigm. In terms of the duration of animals' presence in the platform quadrant, tDCS and tACS increased the outcome measure.

Conclusion : We conclude that tDCS and tACS are more effective than the other two examined paradigms of tES in ameliorating learning and memory impairments.

Keywords : Alzheimer's Disease; Beta amyloid 25-35; Learning; Memory; Morris water maze; tES

Count: 554
Abstract ID: 42
subject: Neuropsychiatry and Psychology: Addiction (Drug, Alcohol, Internet, Food) and Gambling
Presentation Type: Poster

Attenuating effect of β-pinene, a bicyclic monoterpene, on the acquisition and expression of morphine dependence in mice

Submission Author: Saba Zehtabi

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Background and Aim : Opioid dependence is still a main concern in patients who receive opioid drugs for the alleviation of pain; however, there is no effective therapeutic approach to attenuate opioid dependence. Beta-pinene is a natural bicyclic monoterpene which possesses analgesic, anti-inflammatory and antioxidant effects. Moreover, there is evidence showing that β-pinene exhibits partial agonistic effect in μ-opioid receptors. Considering the beneficial effects of μ-opioid receptors partial agonists in preventing opioid dependence, the present study was conducted to clarify whether β-pinene is able to attenuate acquisition and expression of physical dependence to morphine.

Methods : Forty eight male NMRI mice weighing 25–30 g were used in this study. In order to induce dependence, morphine sulfate was injected intraperitoneally (i.p.) once daily for 9 days. The administration of morphine was commenced with the dosage of 10 mg/kg, being increased every three days to 20 and 40 mg/kg. Control animals received normal saline + tween 80 as the vehicle. In order to evaluate the effect of β-pinene on the expression of morphine dependence, single doses of β-pinene (50, 100, and 200 mg/kg, i.p.) were administered 2 hours after the last injection of morphine on the 9th day. To assess β-pinene effect on the acquisition of dependence, multiple doses of β-pinene (25, 50 and 100 mg/kg, i.p.) were administered before each injection of morphine during the 9 days. To elicit withdrawal syndrome, naloxone (2 mg/kg, i.p.) was injected 30 min after the administration of β-pinene on the 9th day.

Results : The administration of ?-pinene with a single dose of 200 mg/kg significantly decreased the symptoms of withdrawal syndrome including jumping, rearing, and diarrhea in morphine-dependent mice; however, the lower doses of ?-pinene (50 and 100 mg/kg) could not attenuate the symptoms of withdrawal syndrome. In addition, the administration of ?-pinene with the dosage of 100 mg/kg, i.p., once daily for 9 days, resulted in a significant reduction in jumping, rearing, and diarrhea in morphine-dependent mice. Although the lower dosage of ?-pinene (50 mg/kg, i.p., once daily for 9 days) could significantly decreased diarrhea and the number of jumps, no significant decrease in the number of rearing was observed. The administration of minimum dosage of ?-pinene (25 mg/kg, i.p., once daily for 9 days) resulted in a significant reduction in the number of jumps (bot not rearing and diarrhea) in the morphine-dependence mice.

Conclusion : It was ultimately determined that β-pinene is capable of attenuating both the acquisition and expression of physical dependence to morphine in mice.

Keywords : Beta-pinene, Morphine Dependence, Withdrawal syndrome, Monoterpene

Count: 555
Abstract ID: 192
subject: Neural Injuries and Neurodegenerative Disorders: Neurotoxicity, Neuroprotection, Inflammation
Presentation Type: Poster

The effect of Lactobacillus rhamnosus on TNF α gene expression in the hippocampus of rat in LPS-induced inflammation model

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Background and Aim : Bacterial lipopolysaccharide (LPS) as a structural part of outer membrane of Gram-negative bacteria which can activate monocytes, macrophages and releasing pro-inflammatory cytokines such as TNF-α, IL-1β and IL-6. Increased levels of pro-inflammatory cytokines and overproduction of free radicals can associate with neuro-inflammation, neural death, memory deficit and finally pathogenesis of neurodegenerative diseases such as Alzheimer. Probiotics defined as live microorganisms which, when administered in adequate amounts, can confer health benefits to the host. when probiotics be administered, these bacteria can be colonized permanently or transitionally by passing through the gut. The relation of the gut microbiota effects on behavior and cognition are increasingly investigating. There is a bidirectional pathway between the gut microbiota and the central nervous system that compromise enteric and autonomic nervous systems (ENS, ANS), neuroendocrine signaling pathway and neuro-immune system. Gut microbiome produce the variety components such as neurotransmitters and neuromodulators or can affect the production of them by the host. The relation between the gut microbiota and the brain has established a new biological pathway which called microbiota-gut-brain axis. Recent researches have indicated the impacts of this pathway in prevention and treatment of nervous system diseases. In the present study, the potentially effect of probiotics on the amelioration of the inflammation induced by LPS has investigated.

Methods : rats were divided into four groups: 1-Control (gavage with saline), 2-Lactobacillus rhamnosus PTTC1637 (gavage), 3-treated with LPS (intraperitoneal injection), 4-Lactobacillus rhamnosus PTTC1637+LPS. Gavage was performed for 21 days. Finally, after the treatments were completed, the hippocampi were isolated and quantification of TNF-α gene expression was performed by Real Time PCR.

Results : LPS-induced inflammation led to the significant increased level of TNF-α gene expression in the hippocampus. Treatment with Lactobacillus rhamnosus PTTC1637 decreased the level of TNF-α gene expression in the hippocampus, significantly.

Conclusion : The level of TNF-α gene expression has a direct relation with inflammation and inflammation can be associated with neurodegenerative diseases. Probiotics as beneficial microorganisms which can colonize in the gut and produce different components, can influence the physiological functions in a positive way. Probably, probiotics by decreasing TNF-α mRNA expression and subsequently inflammation, can influence the different aspects of behavior and cognition.

Keywords : Hippocampus; TNF-α; Probiotic; Real-Time PCR

Count: 556
Abstract ID: 550
subject: Development: Other
Presentation Type: Oral

Effective Communication in a Neurodevelopmental NICU

Submission Author: Mohammad Zonuzirad

Mohammad Zonuzirad[1]

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Background and Aim : As many as 10 to 15% of infants require treatment in the neonatal intensive care unit (NICU). The management of premature infants has advanced over the past decades to the point that infants born as early as 23 weeks' gestation now have a chance of survival due to a multitude of technologic advances. This progress comes with great costs as premature infants are in the NICU for many weeks or months, and many have impaired short and long-term outcomes.Although physical and motor disorders may be more noticeable, preterm and medically fragile infants are also at greater risk for cognitive, social–emotional, mental health, behavioral, speech-language, and regulatory difficulties well into school age and beyond. Educational attainment of young adults that began as a very low birth weight (VLBW) infant, is also poorer than term-born adults with fewer completing higher education and a greater proportion opting to undertake vocational education or training. There is also evidence of an increased risk for psychiatric disorders in adulthood, including ASD, ADHD, and mood disorders. Medical and technological advances in neonatology have prompted the initiation and expansion of developmentally supportive services for newborns and have incorporated rehabilitation professionals into the neonatal intensive care unit (NICU) multidisciplinary team. Availability of neuroscientific therapists, NIDCAP certified NICU nursing, the roles of neurohabilitation professionals, and models of service delivery vary from hospital to hospital based on philosophy, resources, and other considerations. To provide quality care for infants and families, cohesive team dynamics are required including professional competence, mutual respect, accountability, effective communication, and collaboration. This article highlights the contribution of each member of the NICU team. The dynamics of team collaboration are presented with the goal of improving outcomes of infants and families.

Methods : review articles

Results : There are some multiple views about neurodevelopmental outcome of newborn infants hospitalized in NICU. Recently, NICU Therapy is under consideration.Modality of NICU Therapy and competence of neurodevelopmental workers are under dispute. An effective communication can be the best solution.

Conclusion : We need a multi disciplinary neurodevelopmental view in NICU to promote neurological outcome of hospitalized newborn.

Keywords : NICU, Neurodevelopmental, Communication, NIDCAP, Neonatology, Neurohabilitation

Count: 557
Abstract ID: 502
subject: Development: Evolution of Developmental Mechanisms
Presentation Type: Poster

The importance of pain control in the neurodevelopment of premature neonates

Submission Author: Mohammad Zonuzirad

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Background and Aim : Despite therapeutic and technological advances in the neonatal intensive care units (NICUs), which have led to dramatic reduction in mortality, Infants are still under stimulation including acoustic, visual, and tactile stimuli that can lead to complications of maldevelopment. Newborn Individualized Developmental Care and Assessment Program (NIDCAP) (based on Synactive Theory of Development) can reduce these stimuli. However, performing invasive procedures and repeated pain experiences in infants is inevitable. Pain by stimulating the autonomic nervous system leads to disturbances in neurodevelopment and sensory integration and affects learning power. According to the American Pain Association, pain is the fifth vital sign and caregivers should care about it. Therefore, this study was conducted to evaluate the effects of pain on neural development and its control methods in preterm infants based on the results of studies.

Methods : In this review study, information was collected between 2010 and 2019 through a review of related literature and articles and a targeted search for information sources in English and Persian articles and databases. The keywords were pain management, NIDCAP, neurodevelopment, premature neonates. Of the 53 articles found, 15 were eligible.

Results : In premature infants, neural pathways and centers are immature and more vulnerable. Therefore, inadequate pain management has more damaging and lasting effects on the physiology and neuropsychological status of the infant, thereby weakening the immune system and delaying wound healing. Increased monoamine production of the sympathetic system and its stimulation by pain has a negative effect on the cardiovascular system, the gastrointestinal tract and the urinary tract, which sometimes leads to organ ischemia. It also causes behavioral problems such as stress, fear, anxiety, irritability, damage to emotional relationships, and developmental delays that sometimes persist into adulthood. The experience of stress and pain in the infant should be very low to maintain the physiological state. Therefore, how to control pain in infants has become one of the biggest care challenges. There are various ways to control and reduce pain. Non-pharmacological methods such as skin massage, swaddling, listening to music or lullaby, non-nutritional sucking (NNS), eating dextrose, breastfeeding, skin contact and kangaroo mother care (KMC), different baby siting conditions such as the fetal condition and etc., reduce the perception of pain and reduce its complications.

Conclusion : Proper treatment and management of pain is important and has long-term neuropsychological benefits. Therefore, understanding the nature of pain and its evaluation and management can minimize the side effects and provide a suitable basis for the development of the nervous system and the successful development of the brain.

Keywords : Neurodevelopment; premature infants; pain management; NIDCAP

Presentation Type: Poster

Effect of deep brain stimulation on memory and cellular-molecular changes of hippocampus in male rats following seizure induction

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Aims: Low-frequency stimulation (LFS) as a deep brain stimulation pattern is a new therapeutics for drug-resistive epilepsies. However, its effects have not been determined on brain tissue. In this study, effects of LFS on short-term memory, steriologic changes and molecular indices of inflammation and apoptosis were investigated in convulsive rats.

Materials and Methods: A tripolar electrode was inserted into the hippocampal CA1 region and a monopolar electrode was connected to skull. Animals were divided into two groups. In kindled group, animals were kindled by injection of pentylenetetrazole (i.p.) and in control group animals received the solvent. LFS was applied into the CA1 area. One week later, some animals were tested by Y-maze for working memory and in other animals hippocampal samples were preparedfor western bloting and qRT-PCR experiments.

Results: LFS reduced the inflammatory indices, caspase-3 and vasoepithelial growth factor expression and increased the number of neurons and hippocampal volume in kindled animals one week after its application. In addition, LFS decreased the seizure-induced mempory impairment.

Conclusion: Applying LFS in kindled animals reduced the decrement of hippocampal neurons and volume concurrent with decreasing the inflammatory agents and apoptosis. These changes are likely contribute to the LFS therapeutics and protective mechanisms.

Keywords: Seizure; Low-frequency stimulation; Apoptosis; Gliosis; Steriology

Presentation Type: Poster

Hebbian learning: Spike Timing-Dependent Plasticity versus Activity-dependent synaptic plasticity

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Learning occurs in the joints between neurons. Therefore, studying the way neurons interact with each other can be effective in explaining learning models. One of these models is hebbian learning. It is often described as: "neurons that fire together wire together." But is it time dependent or activity dependent? Both rules have been seen in the brain, and studies have been conducted on these two issues that we aim to collect and investigate them.

Key Words:

Hebbian theory of learning, Spiking Neurons, Spike Timing-Dependent Plasticity, Activity-dependent synaptic plasticity, long-term potentiation, long-term depression, synapse,

Presentation Type: Poster

Neural system damage related feature extraction from SSEP data using fuzzy logic

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Abstract

Precise monitoring of the nervous system during corrective scoliosis surgeries has been a perpetual major concern, with possible spinal nerve injury representing a major source of concern for surgical teams. Online monitoring of the nervous-physiological system using an intelligent system can diminish such concerns to a considerable degree. Diagnosis of various vertebral anomaly types and vertebral damage, which is arguably possible through somatosensory evoked potentials (SSEPs), constitutes the main topic of the present research. Designing such signal processing systems can prove beneficial for specialists, helping them provide accurate diagnoses and perform successful operations.

Keywords: The nervous system, somatosensory evoked potentials (SSEP), clustering

Presentation Type: Poster

Explaining self-control construct based on emotional-cognitive abilities in 4-6 children

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Self-control is a multifactorial construct (mechanism), which affects a number of functions (e.g. motor function, physiological and socio-affective, cognitive, behavioral and motivational functions), and is broadly defined as the ability to voluntarily plan the behavior in order to maximize adaptation in different cases. One approach to study it is to analyze its complex reciprocal relationships with its underlying mechanisms . In order to understand the cooperative processing mechanisms in this construct. This study aims to investigate the relationship between the cognitive and emotional components in self-control demands using statistical regression.

Samples include 377 children in three childhood periods; (4 yrs: N=63), (5 yrs: N=241), (6 yrs: N=73). First test wave included Wechsler Preschool and Primary Scale of Intelligence, which assesses verbal and performance abilities, and Kindergarten Inventory of Social/Emotional Tendencies, developed by Miller and Colleagues, which assesses two domains of adaptive and non-adaptive behavior.

The regression equation showed a Beta=0.15 for non-adaptive/hyperactive behavior, and Beta=0.30 for communicational skills and Beta=0.16 for daily life skills. The multi-correlational coefficient between dependent and independent variables is 0.36. Furthermore the R square=0.14, which shows the predictability of self-control based on socio-emotional and cognitive components. The results of this study shows that the socio-emotional components have a greater power of predictability related to cognitive components, which helps to clarify emotion regulation theories.

Keywords: socio-emotional components, verbal Intelligence ,performance Intelligence, self-control, cognitive Intelligence.

Presentation Type: Poster

Transgenerational Effects of Paternal Spatial training on male offpring Spatial Learning

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Lamarck's idea of the ability for transferring memories acquired in the face of various environmental conditions through non-educational and non-genetic mechanisms to children has been greatly considered [Junien et al., 2016]. Previous studies have shown that the environmental experiences of parents, such as the exposure to environmental toxins, educational behaviors, stress and fear may affect the phenotypes of several generations [Arai and Feig, 2011; Azadi et al., 2019; Dias and Ressler, 2014; Lim and Brunet, 2013]. the inheritance of epigenetic patterns including DNA methylation, histone modification, and non-coding RNA to living organisms allows the information related to the ancestral environment to be passed on to their offspring [Wang et al, 2017]. Presently, the acquired traits related to the learning and memory capabilities are among the most important issues in the field of epigenetic transmission. Considering that methylation DNA, histone methylation and histone acetylation are three major epigenetic processes involved in the regulation of memory which leads modification of epigenetic patterns, and given the possibility of transmitting epigenetic symptoms from parents to offspring, it is anticipated that the phenotypes created in the learning process and memory formation in parents will be passed on to their children, which facilitates the learning process and memory formation of the offspring. The present study investigated whether paternal learning of the spatial task before fertilization can facilitate the learning process of spatial memory tasks in their male offspring by the Morris water maze test.

In the present study, Adult male (8 weeks old) were used at the beginning of the study. The first eight male rats were randomly divided into two groups: spatial memory training group (n=4) and control group (n=4). The rats participated in the spatial memory training group in the Morris water maze Protocol and the control group did not participate in any training. After the end of the training session, male rats of both groups mated with female rats that had not experienced any training. After the end of mating, pregnancy, birth and lactation, Four male offspring from each mother was randomly selected in each group and in the two groups paternal train (n=16) and paternal no-train (n=16) they were practicing Morris water maze within 5 days.

The results of ANOVA with repeated measurement showed that the main effect of trials ($F_{11, 330}=19.63$, $p \leq 0.001$), main effect of group ($F_{11, 30}=11.77$, $p \leq 0.01$) and Interactive effect of trials and group ($F1_{11, 330}=1.98$, $p \leq 0.032$) is significant. The results of post-hoc test showed that in trials 5 there was a significant difference between the time to find the platform in the paternal train and paternal no-train groups, and male offspring of paternal train group had better performance. Also, the independent t-test results showed that in the probe test the male offspring of paternal train was significantly better than the male offspring of paternal no-train.

Parental spatial training before fertilization facilitates the spatial learning and memory in their male offspring.

Presentation Type: Poster

Comparing natural- and morphine-induced reward in conditioning place preference paradigm

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Introduction: Suitable response to natural rewards is one of the most important human needs for survival and reproduction. Addiction is one of the major issues with which mankind faces that is mainly due to reward system activity enhancement. There is a high degree overlap between brain regions associated with processing natural and drugs induced reward.

Objective: We designed this study to enhance our understanding of how natural and synthetic rewards are processed in the brain. Our goal is to investigate the behavior of natural and morphine-induced reward.

Method: We compared conditioning in morphine and food-induced reward rats (as a natural reward model) using conditioning place preference (CPP). The protocol for reward induction in all groups (foods and morphine) consisted of three phases: pre-test, conditioning duration, and post-test. In morphine groups, we injected morphine and saline and in natural reward groups, we used two rat favorite foods (Popcorn or Biscuit).

Results: CPP didn't induced in food-deprived rats. The groups that experienced food restriction could induce reward. Interestingly the CPP score of which group received popcorn for 5 days was more than the morphine group. Food-induced CPP of groups which received biscuit or popcorn during 5 and 7 days was more than animals experience 3 days conditioning.

Conclusions: Food deprivation could not facilitate CPP while food restriction (Popcorn and Biscuit as reward's cue in conditioning period) induced reward as well as morphine. Therefore restriction is better than protocol compare to deprivation. Both morphine and food-induced reward.

Keywords: Natural-reward, Morphine-reward, Addiction, Conditioning Place Preference