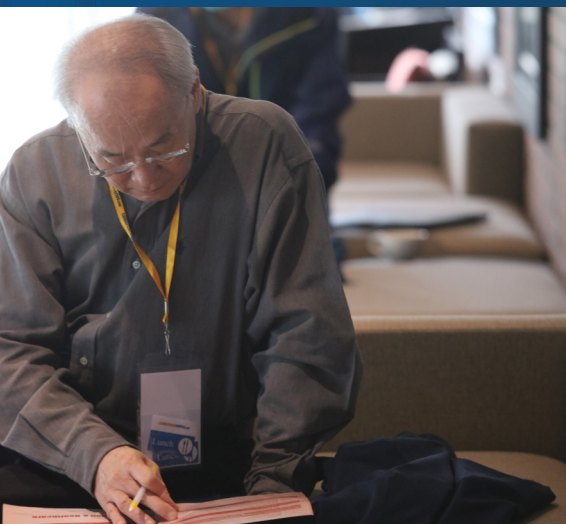


13th Annual Conference on

DEMENTIA AND ALZHEIMER'S DISEASE

December 13-15, 2018 Abu Dhabi, UAE



Scientific Tracks & Abstracts (Day 1)

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Beneficial effects of a diet with walnuts in Alzheimer's disease**Abha Chauhan and Ved Chauhan**

NYS Institute for Basic Research in Developmental Disabilities, USA

Amyloid beta-protein (A β) is the major protein of amyloid deposits in the brain of patients with Alzheimer's Disease (AD). Extensive evidence suggests neurotoxic effects of A β and the role of oxidative stress and inflammation in AD. Walnuts are rich in components that have antioxidant and anti-inflammatory properties. Previous *in vitro* studies have shown that walnut extract inhibits A β fibrillization, solubilizes its fibrils, and has protective effects against A β -induced oxidative stress and cell death in PC12 cells. In the Tg2576 transgenic mouse model of AD (AD-tg), we have reported the beneficial effects of dietary supplementation of 6% (T6) or 9% walnuts (T9) [equivalent to 1 or 1.5 oz of walnuts per day in human] on the memory, learning skills anxiety and motor coordination when compared to AD-tg mice on diet without walnuts (T0). The diets for the experimental and control mice were comparable as regards to total calories and the contents of protein, carbohydrate and fat. To understand the mechanism of beneficial effects of diet with walnuts in AD, we have recently studied the effects of walnuts on A β levels and oxidative stress markers in AD mice. In AD-tg mice on diet with walnuts (T6, T9), the levels of soluble A β were lower in the brain and higher in the blood when compared to T0 mice, suggesting that walnuts in the diet can increase the clearance of A β from brain to the blood. We also observed significant decrease in free radical levels and oxidative damage (lipid peroxidation, protein oxidation) coupled with increased antioxidant status (superoxide dismutase, catalase and glutathione peroxidase) in these T6 and T9 mice on diet with walnuts. In conclusion, these studies suggest that diet with walnuts may have beneficial effects in reducing the risk, delaying the onset, or slowing the progression of AD because walnuts can help to improve memory and learning skills, inhibit A β fibrillization and maintain A β in the soluble form, decrease A β -induced oxidative stress and A β -mediated cytotoxicity and reduce the levels of A β in the brain and increase A β clearance.

Biography

Abha Chauhan is the head of Developmental Neuroscience Laboratory (IBR) at New York. She is also an Adjunct Professor of the Neuroscience doctoral program at the graduate Center of the City University of New York. She has received her MS and PhD from postgraduate Institute of Medical Education and Research, India. From 1983-1984, she has worked as a Research Associate at the Mount Sinai School of Medicine, New York. Then she joined IBR, where she has over 90 publications in the fields of Alzheimer's disease. She has been awarded several research grants as a Principal Investigator and has served as the Editor of the book entitled *Autism: Oxidative stress, Inflammation and Immune Abnormalities*.

Notes:

13th Annual Conference on

DEMENTIA AND ALZHEIMER'S DISEASE

December 13-15, 2018 Abu Dhabi, UAE

Effects of chronic administration of Memantine on okadaic acid induced spatial short-term memory impairment

Mariam Chighladze¹, Manana Dashniani¹, Maia Burjanadze¹ and Khatuna Rusadze²¹Ivane Beritashvili Center of Experimental Biomedicine, Georgia²Akaki Tsereteli State University, Georgia

Alzheimer's Disease (AD) is a neurodegenerative disease that causes progressive cognitive and behavior impairment in the elderly. It is widely believed that changes in the cerebral activity of protein phosphatases have been implicated in the pathogenesis of AD. Okadaic Acid (OA) is a potent and selective inhibitor of protein phosphatases. OA induced memory deficit and elevation of Ca²⁺ was found to be correlated with neurotoxicity and N-Methyl-D-Aspartate (NMDA) receptor emerged as a plausible link. According to available data, the NMDA receptor antagonists (including memantin) have the potential to perform neuroprotective role in neurodegenerative processes caused by Ca²⁺ ionotoxicity. In the present study, the possible beneficial effect of memantine on the OA induced spatial short-term memory impairment was examined in spatial alternation task. OA was dissolved in artificial Cerebro-Spinal Fluid (aCSF) and injected Intra Cerebro Ventricularly (ICV) 200 ng in a volume of 10 µl bilaterally. Vehicle control received aCSF ICV bilaterally. Control and OA injected rats were divided into two subgroups injected i.p. with saline or memantine (5 mg/kg). Memantine or saline were given daily for 13 days starting from the day of OA injection. Behavioral study showed that bilateral ICV microinjection of OA induced impairment in spatial short-term memory and chronic administration of memantine effectively attenuated OA induced spatial short-term memory impairment. Therefore, ICV injection of OA can be used as an experimental model to study mechanisms of neurodegeneration and define novel therapeutics targets for AD pathology.

Biography

Mariam Chighladze has completed her PhD from St Andrew the First-Called Georgian University of the Patriarchate of Georgia. She is the Laboratory Assistant at Ivane Beritashvili Center of Experimental Biomedicine, Laboratory of Behavior and Cognitive Functions. She has published more than four papers.

Notes:

13th Annual Conference on

DEMENTIA AND ALZHEIMER'S DISEASE

December 13-15, 2018 Abu Dhabi, UAE

Food for the brain: Tropical vegetables and spices with neuroprotective properties

Ganiyu Oboh

Federal University of Technology, Nigeria

Neurodegenerative diseases are generally characterized by memory loss, cognitive dysfunction, neuronal damage and death. The pathogenesis of neurodegenerative diseases such as Alzheimer's Disease (AD) and Parkinson's Disease (PD) are not well understood. However, these diseases are multifactorial etiology, which involves complex mechanisms such as disruption of neurological cascades, oxidative stress, impaired neurochemistry, protein misfolding and aggregation as well as deposition of senile plaques and insoluble fibrils in the brain. Management of age-related diseases including AD and PD have been associated with consumption of functional foods which could be whole, fortified, enriched or enhanced foods that provides health benefits beyond the provision of essential nutrients. These foods contain phytochemicals such as polyphenols, alkaloids, carotenoids, anthocyanin's and many more which are capable of improving cognitive function, learning, general brain and wellbeing. Tropical vegetables and spices are among one of the most consumed food either singly or as part of other dishes. In our lab, we have employed various experimental models including *in vitro* screenings, *in vivo* studies in rats and fruit fly (*Drosophila melanogaster*) to study the biochemical and molecular basis of neuroprotective properties of several tropical vegetables and spices. This review major findings from our lab on the neuroprotective properties (as well as the underlying biochemical and molecular mechanisms) of some tropical vegetables and spices in various experimental models. Experimental findings on tropical green leafy vegetables including Amaranth (*Amarantus cruentus*), Water bitter leaf (*Struchium sparganophora*), Pumpkin (*Telfairia occidentalis*), Horseradish (*Moringa olifera*), African Jointfir (*Gnetum africanum*) and spices such as pepper varieties (*Capsicum spp.*), Ginger (*Zingiber officinale Roscoe*), Turmeric (*Curcuma longa*), Alligator pepper (*Aframomum melegueta*), and Bastard Melegueta (*Aframomum danieli*) were presented. Furthermore, characterized phytochemicals especially polyphenols and alkaloids from these tropical foods is also elucidated. It is believed that our findings would provide useful information on the neuroprotective properties of these functional foods which could form basis for their adoption as functional foods and nutraceuticals for the management of related neurodegenerative disease.

Biography

Ganiyu Oboh, Nigerian biochemist, researcher. Achievements include development of bio-system network for the re-utilization of cassava peels and wastewater by-products. Member of Nigerian Society Experimental Biology, Biotechnology Society Nigeria, Nigerian Society Biochemistry and Molecular Biology (chapter secretary).

ganiyu.oboh@gmail.com

Notes:

13th Annual Conference on

DEMENTIA AND ALZHEIMER'S DISEASE

December 13-15, 2018 Abu Dhabi, UAE

Potential therapeutic implications of gelsolin in Alzheimer's disease

Ved Chauhan and Abha Chauhan

New York State Institute for Basic Research in Developmental Disabilities, USA

Deposition of fibrils Amyloid Beta-protein (A β) as amyloid plaques in the brain is a prominent feature in the pathology of AD. Gelsolin a multifunctional actin-binding protein is present as circulatory protein in plasma (p-gelsolin) and its shorter form is present in the cytoplasm (c-gelsolin). We have reported that gelsolin forms a complex with A β and gelsolin inhibits A β fibrillization and it also solubilizes preformed A β fibrils. These findings suggest anti-amyloidogenic property of gelsolin. Other studies have also shown reduced amyloid load with peripheral administration of p-gelsolin or transgene expression of c-gelsolin in the transgenic mouse model of AD. The levels of gelsolin can also be increased epigenetically by inhibition of histone deacetylases, such as Trichostatin A (TSA). TSA has been reported to increase gelsolin expression in cell cultures and brain. We studied whether TSA can act as a potential therapeutic agent in AD through clearance of A β by affecting the levels of plasma/brain gelsolin in APP^{swe}/PS1 δ E9 transgenic mouse model of AD. Intraperitoneal administration of TSA to these AD-tg mice for two months improved the learning ability during the Morris water maze training process. The western blots showed increased plasma levels of gelsolin, A β 1-40/A β 1-42 in TSA-treated mice as compared with vehicle-treated control mice. A positive correlation was observed between the plasma levels of gelsolin and A β 1-40 / A β 1-42 in AD-tg mice. These results suggest that TSA may help in A β clearance by inducing the expression of gelsolin, thus improving the learning skills. It seems that plasma gelsolin probably acts as peripheral sink protein to bind A β peptides and therefore help in A β clearance.

Biography

Ved Chauhan is the head of the Cellular Neurochemistry Laboratory at New York State Institute for Basic Research in Developmental Disabilities, New York. He has received his PhD from Post Graduate Institute of Medical Education and Research, India. After working as a Research Associate for two years at the University of Southern California, he joined IBR as a Research Scientist. He has published over 100 research articles in the field of signal transduction, membrane biochemistry, Alzheimer's disease and autism. For his work on Alzheimer's disease and Autism, he has been awarded several research grants as Principal Investigator from NIH, Alzheimer's Association and Autism Research Institute. He has also served as an Editorial Board Member of many journals.

ved.chauhan@opwdd.ny.gov

Notes:

13th Annual Conference on

DEMENTIA AND ALZHEIMER'S DISEASE

December 13-15, 2018 Abu Dhabi, UAE

Many faces of DCTN-1 (Dynactin) gene mutation in Neurodegenerative diseases

Rajib Dutta

West China School of Medicine, China

A 45 year old working lady presented to us with Bradykinesia for six months, accompanied with difficulty in walking for four months. Six months ago, the patient started feeling clumsy while doing house hold work and her movements became slower as time passed by. Four months ago, she started to have difficulty in walking which gradually aggravated. Since onset, she was depressed, and experienced sleep related behavioral issues but never lost weight. Her Mother had similar symptoms but was on antiparkinsonian drugs. P/E: increased muscle tone in all 4 limbs, right >> left with reduced right arm swing, with masked type facies. In view of positive family history, parkinsonism symptoms, depression/apathy patient was diagnosed with definite PS (Perry syndrome) supported by international diagnostic criteria. PSG showed airflow restriction and hypoventilation using apnea hypopnea index. Genetic test was performed which confirmed novel point DCTN 1 gene mutation. Patient was started on Antiparkinsonian agents, antidepressants, and clonazepam and her symptoms got somewhat better. Conclusion and significance: We have diagnosed the first Asian case of a PS with a novel point mutation p.G67S of DCTN1 gene in exon 2 not reported yet. Our observation suggests that patients/family members may not present with all the cardinal features of PS but still it has to be ruled out with gene testing mainly because of two reasons:

1. An early timed diagnosis can significantly modify the progression of disease.
2. Improve quality of life by use of diaphragmatic pacing and can prevent life-threatening episodes of acute respiratory failure and eventually death.

Biography

Rajib Dutta is a postgraduate neurology trainee 1st year in china with MRCP UK, Diploma in emergency Medicine and critical care (Royal college UK), Diploma in clinical neuropsychology (UK), Pediatric Neurology certification BPNA (UK, ongoing), Neuroscience and neuroimaging course john Hopkins university (ongoing). He has recently submitted a meta analysis of vit. D and its association with PD in frontiers of neuroscience under review plus submitted this above mentioned abstract in movement disorders under review, working on WD with secondary PKD, Face of Giant Panda in WD, PARK 2 neuropathy, EA 2 with novel mutation, DYT -27 etc.

rajibdutta808@gmail.com

Notes:

13th Annual Conference on

DEMENTIA AND ALZHEIMER'S DISEASE

December 13-15, 2018 Abu Dhabi, UAE

Effectiveness of beta carotene in Streptozocin induced cognitive impairment in mice

Sundas Hira

Riphah International University, Pakistan

Alzheimer's is the neurodegenerative disease characterized by cascade changes in the cognitive, behavioral and social activities. Several areas of brain are involved in regulation of memory. Of most important are amygdala and hippocampus. A number of available antioxidants are used for the treatment of many ailments. The present study was conducted to evaluate the effectiveness of exogenous antioxidant such as beta carotene (1.02 & 2.05 mg/Kg) against i.c.v streptozocin induced memory impairment in mice. Streptozocin (3mg/Kg, i.c.v) was administered in two divided doses (on 1st and 3rd) for neurodegeneration. Male albino mice (n = 50) were used in the protocol which were further subdivided into five groups (Group I- control, Group II- diseased, Group III-standard, Group IV-V treated with beta carotene) to investigate the cognitive enhancement effect of selected antioxidant. Learning and memory behavior was assessed following the passive avoidance, elevated plus maze and open field paradigm. Biochemical markers of oxidative stress such as glutathione peroxidase, superoxide dismutase, catalase and acetylcholinesterase were analyzed in brain homogenates to evaluate the antioxidant potential and role of acetylcholine in memory enhancement. Results indicated that beta carotene at high dose (2.05mg/Kg) was more effective in the improvement of cognitive performance. It may be concluded from the study that beta carotene can be useful for memory enhancement and suggests its potential in the treatment of many neurodegenerative diseases such as Alzheimer's disease.

Biography

Sundas Hira is working as a lecturer at Riphah Institute of Pharmaceutical Sciences, Riphah International University. She is contributing dedicatedly her best part in research and publications. She has her expertise in assessing the use or effectiveness of natural substances in neurodegenerative diseases. Her research work based on evaluating the "effectiveness of beta carotene in streptozocin induced cognitive impairment in mice" explores the new pathways for preventing many neurodegenerative diseases associated with cognitive deficit. This research probes the use of natural supplements in various disease resulting due to oxidative stress.

sundas.hira@riphah.edu.pk

Notes:

13th Annual Conference on

DEMENTIA AND ALZHEIMER'S DISEASE

December 13-15, 2018 Abu Dhabi, UAE

Green leafy vegetables from two *Solanum sp.*, (*Solanum nigrum L* and *Solanum macrocarpon L*) Ameliorate Scopolamine-induced cognitive and neurochemical impairments in rats

Opeyemi Babatunde Ogunsuyi¹, Sunday Idowu Oyeleye¹, Abayomi Felix Dada², and Ganiyu Oboh^{3*}
Federal University of Technology, Nigeria

This study examined the modulatory effect Black nightshade (*Solanum. nigrum L*) and African eggplant (*Solanum. macrocarpon L*) leaves via a feeding trail on cognitive function, antioxidant status and activities of critical enzymes of monoaminergic and cholinergic systems of neurotransmission in scopolamine-administered rats. Cognitive impairment was induced in albino rats pretreated with dietary inclusions of Black nightshade (BN) and African eggplant (AE) leaves by single administration (i.p) of scopolamine (2 mg/kg body weight). Prior to termination of the trail, the rats were subjected to spontaneous alternation (Y-maze) test to assess their spatial working memory. Thereafter, activities of acetylcholinesterase (AChE), butyrylcholinesterase (BChE), monoamine oxidase (MAO), arginase and antioxidant enzymes (catalase, SOD and GST) of rat brain homogenate were determined. Also, the malondialdehyde (MDA), nitrite and GSH contents of the homogenate were determined. The results showed that pretreatment with dietary inclusions of AE and BN (5% and 10%) significantly reversed the impairment in the rats' spatial working memory induced by scopolamine. Similarly, elevations in activities of AChE, BChE and MAO induced by scopolamine were significantly reversed in rats pretreated with dietary inclusions of AE and BN. In addition, impaired antioxidant status induced by scopolamine was reversed by pretreatment with dietary inclusions of AE and BN. This study has shown that dietary inclusions of AE and BN could protect against cognitive and neurochemical impairments induced by scopolamine and hence, these vegetables could be used as source of functional foods and nutraceuticals for the prevention and management of cognitive impairments associated with Alzheimer's disease.

Biography

Opeyemi Babatunde Ogunsuyi currently works at the Department of Biomedical Technology, Federal University of Technology, Akure. Opeyemi does research in Biochemistry with special focus on Neurophytotherapy, Functional foods and Nutraceuticals. Their current project is natural therapy for neurodegenerative diseases using *Drosophila melanogaster* as model organism.

opeyemiogunsuyi@gmail.com

Notes:

13th Annual Conference on

DEMENTIA AND ALZHEIMER'S DISEASE

December 13-15, 2018 Abu Dhabi, UAE



13th Annual Conference on

DEMENTIA AND ALZHEIMER'S DISEASE

December 13-15, 2018 Abu Dhabi, UAE

Dementia in psychoanalytic psychotherapy

Malka Ceh

Sigmund Freud University, Austria

Psychoanalytical psychotherapy is usually not primary recognized as a supportive approach and is traditionally placed on the expressive and explorative pole of the psychotherapy spectrum. The common aim of psychoanalytical psychotherapy is to identify innate patterns, repressed emotions, and forgotten experiences. In making this unconscious content conscious it gets easier for the patient to know, change or accept who they are. Although dementia is rarely considered for psychotherapy, and because of its nature even less for psychoanalytical psychotherapy, we believe psychoanalytical informed ideas and concepts have much to offer in outlining a benefiting approach to dementia patients. As memory function is critically affected in dementia, the illness alters the core of a patient's self and his object relations. In developing a profound understanding of these human experiences and their complex functioning, psychoanalysis can conceive precise interventions that provide efficiently for the patient's cognitive, relational, and relational needs. Together with most powerful aspects of contemporary psychoanalytical psychotherapy, i.e. curiosity, openness, and acceptance, we can contribute considerably to the quality of life for more and more people who are living with dementia.

Biography

Malka Ceh is a postgraduate student of psychotherapy science at Sigmund Freud University Vienna, and a psychoanalytic psychotherapist in training, currently working under supervision at the psychotherapeutic faculty clinic in Ljubljana, Slovenia. She is a founding member of Physiopsychological Research Association PsyPhys, member of International Neuropsychoanalysis Society, and member of International Association of Clinical Neuropsychotherapy. Her research interests include neuropsychotherapy, neuropsychoanalysis, and sport psychotherapy.

Notes:

13th Annual Conference on

DEMENTIA AND ALZHEIMER'S DISEASE

December 13-15, 2018 Abu Dhabi, UAE

Dementia continuum of care: Jamiyah Singapore model

Satyaprakash Tiwari

Jamiyah Nursing Home, Singapore

One of the emphases today in Jamiyah Singapore is on avoiding premature institutionalization of the frail elderly with dementia. Singapore should as far as possible decrease use of the expensive and debilitating nursing home care. This is not to say that institutional services should be totally eliminated, but that they must be used more judiciously. As the aging population increases, question remains how many of the elderly will need the costly institutional care necessary to deal with chronic illness and how many should be re-channeled to less expensive, yet more meaningful alternatives. The feasibility of such cost-saving community long-term care alternatives is based on the idea of a “continuum of care”, the provision of an appropriate level of service for elderly citizens in various stages of health and aging. Jamiyah Singapore recognizes that the ageing of the Singaporean population is expected to pose a major challenge to Singapore’s socioeconomic progress and the face of healthcare in Singapore is changing. Advancements in technology, pharmacology, and medical healthcare practice contribute to extension of the average lifespan. Amidst these changes, chronic diseases are emerging as a priority topic. In general, the goal of treatment is to restore the elderly to their highest level of functioning. This includes optimizing medical, emotional, social, educational and vocational functioning and bringing them as close to full independence as their condition allow. Jamiyah Singapore has set up more than 15 services and programs such as counselling, senior therapy services, residential homes, food bank, etc. These services aim to help persons from various vulnerable and disadvantaged groups across all ages and ethnic background to ensure that anyone who needs help and their caregivers get the necessary support they need. The predominant aims for which the organization was established are to provide a comprehensive planned approach for the direct relief of poverty, sickness, suffering, distress, misfortune, destitution or helplessness in the community.

Biography

Satyaprakash Tiwari has spearheaded and operationalized four Voluntary Welfare Organizations (VWOs), piloted the first home help service and dementia day care center and developed numerous community-based programs and initiatives in Singapore. Having been a Senior-Level Executive in VWOs for over 30 years, he earned a formidable reputation in relation to his expertise in initiating and institutionalizing significant programs with highly effective management skills and ability to develop longstanding commercial, inter-agency and client relationships.

Notes:

13th Annual Conference on

DEMENTIA AND ALZHEIMER'S DISEASE

December 13-15, 2018 Abu Dhabi, UAE

Investigation of expression patterns of neurological proteins in serum and cerebrospinal fluid of patients suffering from neurodegenerative disorders

Ghulam Md Ashraf¹ and Asma Perveen²¹King Fahd Center for Medical Research-King Abdulaziz University, Saudi Arabia²Glocal University, India

Recent researches have shown neurological proteins to exhibit altered expression in patients suffering from Neurodegenerative patients (NDDs) like Alzheimer's Disease (AD), Parkinson's Disorder (PD), Vascular Dementia (VaD) and Amyotrophic Lateral Sclerosis (ALS). Serum and Cerebro Spinal Fluid (CSF) of various NDD patients were collected and the expression pattern of Galectins (Gal-1, Gal-3 and Gal-9) and Matrix Metalloproteinases (MMP-1, MMP-3 and MMP-9) was investigated. Quantitative ELISA measured the concentration of these proteins and a comparative analysis using other tools was done to understand their expression pattern. The findings of this work provided a definitive pattern of expression of Gals and MMPs in NDDs, which in turn proclaim their role as potential biomarkers to monitor the progression of the NDDs. These insights will in turn help in designing new and more promising therapeutics strategies for the NDDs.

Biography

Ghulam Md Ashraf is currently working as a Associate Professor in King Fahd Medical Research Centre, King Abdulaziz University. And he is his field of expertise are Biochemistry and Neurology. He is also designated as the associate editor in Frontiers in Aging Neuroscience.

Notes:

13th Annual Conference on

DEMENTIA AND ALZHEIMER'S DISEASE

December 13-15, 2018 Abu Dhabi, UAE

Fish oil treatment during chronic maternal hypoxia improve cognition in rat offspring

Zohreh Ghotbeddin, Maryam Ali Heydari, Kaveh Zhazaeel and Mohammad Reza Tabandeh
Shahid Chamran University of Ahvaz, Iran

Introduction & Aim: Brain hypoxia is the common stressors during pregnancy is associated with fetal brain injury and delay in brain development. This effect can cause cognitive and behavioral disruption into later childhood. Fish consumption during pregnancy has positively effect on cognitive abilities. In this study, we studied the effect of fish oil treatment during chronic maternal hypoxia on cognitive task in rat offspring.

Method: Rats were divided into two groups including sham and hypoxic group. To create hypoxic condition, pregnant rats were kept in hypoxic box on DPC 6-21 with 10% oxygen and 90% nitrogen intensity for three hours. Sham group was injected with saline for the same period of time. At the end, passive avoidance memory was performed by shuttle box test.

Result: Results indicated that chronic maternal hypoxia reduced delay time ($p < 0.05$) and increased time spent in dark room ($p < 0.05$) in shuttle box test compared to the sham group.

Conclusion: According to our results, chronic hypoxia in pregnancy disrupts passive avoidance memory in rat offspring.

Biography

Zohreh Ghotbeddin has completed PhD from Tarbiat Modares University, Iran. He is an Assistant Professor of Physiology in Shahid Chamran University of Ahvaz, Iran. He has published more than ten papers in reputed journals.

Notes:

13th Annual Conference on

DEMENTIA AND ALZHEIMER'S DISEASE

December 13-15, 2018 Abu Dhabi, UAE

Mild cognitive impairment

Zahra Vahabi

Tehran University of Medical Sciences, Iran

Mild Cognitive Impairment (MCI) is intended: An intermediate stage between normal aging and the development of pathologic aging and dementia. An intermediate stage between the expected cognitive decline of normal aging and the more-serious decline of dementia. It can involve problems with memory, language, thinking and judgment. There should be evidence of lower performance that is greater than would be expected for the patient's age and educational background. If repeated assessments are available, then a decline in performance should be evident over time. Scores on cognitive tests for individuals with MCI are typically 1 to 1.5 SD below the mean for their age and education matched peers on culturally appropriate normative data. In illiterate people many of neuropsychological assessment could not detect real MCI and any clinician should consider the level of education and social activity in diagnosis MCI and Dementia. It is emphasized that these ranges are guidelines and not cutoff scores. The term MCI has been in the literature for almost 4 decades. MCI was originally conceptualized by a research group from New York University in 1994 using the six stages from the global deterioration scale (GDS; Reisberg et al., 1982). In 2011, the National Institute on Aging (NIA) and the Alzheimer's Association convened workgroups to develop criteria for the entire AD spectrum. Taken together, these criteria offer an exciting advancement in the diagnosis of MCI; however, the inclusion of biomarkers and imaging is only considered appropriate as part of clinical research protocols and not as part of standard clinical practice. The DSM-5 introduced the term Neuro Cognitive Disorder (NCD). The terms dementia and MCI were avoided because their use is closely associated with geriatric disorders, while NCD encompasses acquired cognitive impairment of all causes at all ages. They noted that mild NCD encompasses a more diverse group of entities including mild acquired impairments in younger individuals. Impairments that may be transient, static, or even reversible. While no pharmacologic therapies are currently approved by the US FDA for MCI due to AD, lifestyle modifications and cognitive and behavioral therapies can be useful.

Biography

Zahra Vahabi is an Assistant Professor of neurology in Tehran University of Medical Sciences in Iran. Her main research interests are in the field of cognition and geriatric medicine, and currently she is the principal investigator of Post Stroke Cognitive Decline among Iranian Stroke Survivors project and CO-PI of MCI Early Detection project in Iran. Dr. Vahabi is the director of geriatric ward in Ziaieian hospital at Tehran University of Medical Sciences, and has served as the Scientific Secretary of the annual Iranian Conference of Geriatric Medicine and Gerontology since 2017.

Notes:

13th Annual Conference on

DEMENTIA AND ALZHEIMER'S DISEASE

December 13-15, 2018 Abu Dhabi, UAE

Possible biological underpinnings of sport movement psychotherapy

Malka Ceh

Sigmund Freud University, Austria

Increasing prevalence of mental disorders despite the accelerated development of pharmacological and psychiatric therapies encourages research and a search for more effective interventions with fewer adverse effects. In developing an alternative clinical approach in the form of sport movement psychotherapy, we research biological underpinnings of psychical activity impact on mental health. With a systematic literature review we combine findings of 21 papers into five models depending on the effect level: At structural level, physical activity affects neural and vascular cerebral structure by stimulating neurogenesis, angiogenesis, neuroplasticity, and neuroprotective processes. Important positive effects involve prevention of neurodegenerative diseases, cognitive and affective disorders, and better regulation of cognitive and emotional responses. At neurochemical level, synthesis and release of neurotransmitters, opioids, and hormones are stimulated, which impacts various brain areas and improves emotional, cognitive, and behavioral functioning. In strengthening the systems of pleasure and reward, it significantly influences motivation, and consequently, active behavior. The main effects on the neuroendocrine level involve optimization of stress axis functioning, therefore physically active individuals are more resistant to stress, and experience faster stress relief due an optimized negative feedback mechanism. At cerebral activity level, physical activity impacts the ability to process larger amounts of information in less time and improves the capacity of executive control. Overview of biopsychological mechanisms confirms that physical activity intervenes at the etiological origin of mental disorders and acts as a key protective factor of mental health.

Biography

Malka Ceh is a postgraduate student of psychotherapy science at Sigmund Freud University Vienna, and a psychoanalyst in training. She is a founding member Physiopsychological Research Association PsyPhys, member of International Neuropsychoanalysis Society, member of International Association of Clinical Neuropsychotherapy, and holds a National Council on Strength and Fitness certificate. Her research interests include (bio)psychotherapy, (bio)psychoanalysis, and sport psychotherapy.

Notes:

13th Annual Conference on

DEMENTIA AND ALZHEIMER'S DISEASE

December 13-15, 2018 Abu Dhabi, UAE

Live-in specialized caregivers: Do we really need them in Singapore?

Satyaprakash Tiwari

Jamiyah Nursing Home, Singapore

Many do not realize the daunting challenge that they will undertake when caring for elderly family members who wish to age-in-place, in the familiar environment of their homes. Elderly care recipients require intense levels of attention to cater to their unique needs, which inevitably adds on to your commitments. Over time, it often leads to increasing stress, anxiety and erratic levels of attention for the care recipient. Consequently, a significant number of families have enlisted the help of Foreign Domestic Workers (FDWs) to care for their elderly loved ones. However, it has been estimated that more than half of these workers do not possess the requisite experience and or training to care for the elderly. CARE seeks to provide high quality, state-of-the-art trained caregivers at affordable rates to the elderly and their families. Our meticulously designed recruitment policy identifies the most outstanding are givers. It also involves a rigorous training program to ensure that each caregiver is well equipped with requisite skills and understands the nuances of caring for the elderly. All of our specialized caregivers have been trained and assessed in our Care Institute, located in their country of origins-namely Myanmar, Philippines and India. Our caregivers are required to achieve high standards in their assessment, which are benchmarked against eldercare homes and community-based services in Singapore. They are competent in providing assistance in many fundamental areas of eldercare that relate to daily living such as hygiene, nutrition, ambulation and cognitive stimulation. Additionally, they possess the necessary experience skills to care for persons with dementia, cancer, stroke, Parkinson's disease and other ailments that commonly afflict the elderly. CARE specialists are professionals who have gone through a rigorous selection and training process. What sets a CARE specialist apart is the unique 360° CARE model that extends beyond being a training tool. Specialists are trained by experts in the healthcare sector and are equipped with skills that ensure that they deliver client-centered care of the highest quality. It also creates a learning environment that shapes confident specialized caregivers with interpersonal, critical-thinking and personal care skill.

Biography

Satyaprakash Tiwari has spearheaded and operationalized three Voluntary Welfare Organizations (VWOs) piloted the first home help service and dementia day care center and developed numerous community-based programs and initiatives in Singapore. He is a Senior-Level Executive in VWOs and has earned a formidable reputation in relation to his expertise in initiating and institutionalizing significant programs with highly effective management skills, and ability to develop longstanding commercial, inter-agency and client relationships.

Notes:

13th Annual Conference on

DEMENTIA AND ALZHEIMER'S DISEASE

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In silico Identification of novel ApoE4 inhibitor for Alzheimer's disease therapy

Muhammad Asif Rasheed

COMSATS University Islamabad, Pakistan

ApoE4 is a major genetic risk factor due to its increase incidence of developing Alzheimer's disease. The study was designed to predict such compounds that may helpful in designing drug to suppress the over activity of apoE4 protein. 22 natural compounds (marine, microorganism and plant derivative) were used as inhibitors and docked with apoE4 (PDB id 1B68). 6 Synthetic compounds (In clinical trials) were docked with target protein to compare and analyze the docking results with natural compounds. Compounds S-Allyl-L-Cysteine, Epicatechin Gallate and Fulvic Acid show high binding affinity i.e. -7.1, -7 and -7 respectively. Epicatechin Gallate shows hydrogen bond with Gln156 and Asp35 and Fulvic Acid shows hydrogen bonding with Glu27. In case of synthetic compounds Tideglusib did not show hydrogen bonding with any amino acid residue of ApoE4 but show high binding affinity of -7.2 same as of natural compound S-Allyl-L-Cysteine which show high binding affinity of -7.1 but did not show hydrogen bonding with any amino acid residue. Protein-Protein interactions of apoE4 show physical and functional interaction with related proteins. Our study predict a compound Epicatechin Gallate on the basis of binding affinity and hydrogen bonding with amino acid residue as a potential lead compound which may be used as an inhibitor.

Biography

Muhammad Asif Rasheed has his expertise in bioinformatics approaches and passion in improving the health and wellbeing. He recently completed PhD studies from Huazhong Agricultural University, Wuhan, China and applied different bioinformatics approaches to predict the virulence factors in *Mycoplasma bovis* bacteria. Simultaneously he published review articles by applying different bioinformatics tools on proteins related to liver cirrhosis. Recently he is working on therapeutics aspects of Alzheimer's disease.

Notes:

13th Annual Conference on

DEMENTIA AND ALZHEIMER'S DISEASE

December 13-15, 2018 Abu Dhabi, UAE

Neurocognitive disorders, early diagnosis, mimics and management

Ahmed Saadeldin Hussein Hamed

Ain Shams University School of Medicine, Egypt

This thesis presents a case-based qualitative evaluation of a community-based memory service for people with dementia and cares, informed by an advisory group including people with dementia and cares. Drawing on theoretical frameworks of critical and narrative gerontology, interviews with service users, cares and community mental health team staff generated rich accounts of experiences of using and delivering the memory service. Data from people with dementia and cares were analyzed thematically and built on work by Willis et al. (2009) to generate quality indicators for dementia care. Analysis of data from CMHT staff drew on a framework of collective leadership devised for use in the NHS by the Center for Creative Leadership and The King's Fund (2014a). Findings reveal rich insights into: i) the everyday challenges faced by people with dementia and cares, ii) the positive contributions they can bring to the evaluation and development of services for people with dementia and cares and iii) the important role of collective leadership in the provision of high-quality services for people with dementia. The thesis extends the current knowledge base relating to people with dementia and cares by developing understandings of how they can contribute to the evaluation and development of memory services.

Biography

Ahmed Saadeldin has completed his master's degree in neurology at the age of 30 years from Ain Shams University, Cairo, Egypt. He is the director of Stroke unit in special medical center. He has published more than 15 papers in reputed journal sand has been serving as an editorial board member of reputed.

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Dementia and the cycle of role reversal

Lilly Naomi

Duke University, USA

My grandmother is an 88-year-old African American woman with dementia. My project seeks to explore the role dementia has played within my family, specifically, how the cycle of role reversal has shaped the matriarch position my grandmother once held within my family. Discussion of the topic will be facilitated by my grandmother, her children, and grandchildren. Literary works include publications that focus on dementia as a symptom and dementia as it pertains to the role of caretakers. These works were used to demonstrate differences between written text and what it means to face dementia outside of text. The final project will take the form of a documentary that seeks to capture the emotions and realities my family has had to face as a result of my grandmother's condition. The documentary is different from a paper because in many ways, it serves as a case study that helps to build personality and impact. This personality and impact will ultimately help viewers paint an image of what life looks like for a person with dementia and how the conditions that are attributed to dementia, impact surrounding individuals (i.e. family). The documentary will be guided by the recognition of a role reversal and reflections on memories before and after my grandma's condition began and continued to worsen. These memories help to allow individuals to recognize the changes dementia can have on what may be considered a person's everyday routine. These memories will also help viewers connect to the content due to the raw nature of the responses given by interviewees and the unfortunate realities dementia presents. The analysis of the interviews I have conducted has portrayed general disdain for my grandma's health status, but a fondness and admiration that can be attributed to the way she has helped to unite and lead my family throughout the years. This admiration was reflected heavily amongst my family members and their acceptance of the role reversal, due to the nurturing my grandmother has provided us throughout the years. Evidence for this claim can be greatly attributed to the heartfelt answers provided by family members. These answers help to paint the image of a matriarch and a change in the hierarchal roles within the family at large.

Biography

Naomi Lilly is a member of the class of Duke University 2020. Naomi is studying African American Studies and Gender Studies and pursuing a certificate in Documentary Studies. At Duke, she is a member of the Penny Pilgram Cohort, the political chair co-president for Duke's NAACP chapter, a member of the Duke Deja Blue a cappella group, and a content creator for The Bridge (an online publication). Her academic interests include gender and racial injustice, the role of activism today's society and the media's growing impact with issues related to social injustice(s). After college, Naomi seeks to focus on accurate minority representation in entertainment.

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Paroxysmal Kinesigenic Dyskinesia with genetic diagnosis of Wilsons disease

Rajib Dutta

West China School of Medicine, China

Paroxysmal kinesigenic dyskinesia (PKD), a rare paroxysmal movement disorder often misdiagnosed as epilepsy, is characterized by recurrent, brief dyskinesia attacks from seconds to 5 minutes triggered by sudden voluntary movement like dystonia, tremor, myoclonic jerks. Ion channelopathy has been suggested, since the disease responds well to moderate dosage of carbamazepine/oxcarbamazepine. Secondary causes of PKD which may well be associated with Wilson's disease and other concurrent movement disorders should be sorted out if no evidence of ion channelopathy or genetic mutation is present. A 22 year male patient presented to our OPD with voluntary movement of Right hand with minimal dystonia present in resting as well as moving state, depression caused because of not able to perform daily activities. The patient was diagnosed initially with PKD because it lasted for few seconds to 2 minutes. Routine labs were performed including blood ceruloplasmin, urine and serum copper which was consistent with diagnosis of WD. The ATP 7B gene mutation was positive in this case with no hepatic involvement. PKD gene testing was negative. Patient was started on traditional dosage of D-Penicillamine and being continued long term. For PKD we gave 50 mg bid dose of carbamazepine which was later increased to 100 mg bid with complete resolution of dyskinesia and depression. We think PKD might be secondary to WD in our case or some unknown ion channelopathy might be present which is not yet reported till date. Response to CMZ and penicillamine was very obvious. Myoclonus of PKD can be easily confused with myoclonic epilepsy and use of antiepileptic drug may be inappropriate in this setting. So careful monitoring of symptoms as well as associations with other diseases should be considered while evaluating this type of rare treatable cases. Inappropriate treatment can easily exacerbate the symptoms and can degrade the quality of life in young patients.

Biography

Rajib Dutta a postgraduate neurology trainee 1st year in china with MRCP UK London, Diploma in emergency Medicine and critical care (Royal college UK), Diploma in clinical neuropsychology (UK), Pediatric Neurology certification BPNA (UK, ongoing), Neuroscience and neuroimaging course John Hopkins University (on going). I have recently submitted a meta analyses of vit D and its association with PD in frontiers of neuroscience under review, ma 2 antibody with MDS, working on WD with secondary PKD, Face of Giant Panda in WD, PARK 2 neuropathy, EA 2 with novel mutation, DYT -27, Perry syndrome and so on.

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