

INTERNATIONAL CONFERENCE ON
DEMENTIA AND BRAIN DISORDERS
&
2ND INTERNATIONAL CONFERENCE ON
NEUROLOGY & NEUROLOGICAL DISORDERS

NOVEMBER
15, 2024

Virtual
Event

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Our Keynote Speakers



Zhenhuan LIU
Guangzhou University of Chinese Medicine
China



Weihong He
Sichuan University
China



Wagih Shafik El Masri
Keele University
UK



Marika Cordaro
University of Messina
Italy

Thank You All

WELCOME MESSAGE



Kantemir Dzamikhov
**Russian Medical Academy of Continuous Professional
Education, Russia**

Dear participants of the International Conference on Dementia and Brain Disorders 2024!

The authorial team of the Russian Medical Academy of Continuous Professional Education is pleased to welcome all scientists, practitioners, researchers and delegates to ICDB 2024 held in Dubai, UAE.

Noting the uniqueness of the theme of the conference in 2024: “ Mind Matters: Unraveling the Mysteries of Brain Disorders”, it is necessary to note the accuracy of this thesis, in view of the increasing threat of dementia and related complications in the cognitive, functional, social and professional spheres of life of every person on earth.

Increasing life expectancy also imposes risks and burdens on health care in all countries of the world, as we are already facing an increasing proportion of elderly citizens with varying degrees of cognitive impairment. Multimorbidity is one of the key factors representing the quintessence of all synergies between two or more nosologies in a single patient, which undoubtedly has an impact including the central nervous system (CNS) - from functional disorders to organic pathology.

We are confident that this conference, held in a hybrid format, will help to unite the ideas of all participants into a single vector in the fight against the threat of “cognitive aging” and the development of methods, tools and technologies to improve the quality of life of patients from 60 years and older.

We sincerely wish you productive participation, exchange of ideas, establishment of new communications between scientists and doctors from all countries of the world, as well as a pleasant pastime in one of the most beautiful cities of the world - Dubai!



**KEYNOTE
PRESENTATIONS**



**NOVEMBER
2024 15**

Weihong He

Sichuan University
China



RUNX1 expression is upregulated after middle cerebral artery occlusion in rats

Abstract:

Ischemic stroke is a leading cause of death worldwide. With high mortality and morbidity, ischemic stroke results in immense public healthcare burden and serious socioeconomic consequences. Effective pharmacological treatments are urgently required to mitigate the effects of stroke. Runt-related transcription factor-1 (RUNX1), a member of the core-binding factor family of transcription factors, represents a potential therapeutic target for ischemic diseases. RUNX1 is classically considered as the master regulator of developmental hematopoiesis because of its indispensable role in the specification of the hematopoietic lineage during embryogenesis. Whilst the focus of RUNX1 research has predominately been in the hematopoietic field, recent evidence reveals emerging functions of RUNX1 in different tissues under pathological conditions. In the heart, growing evidence showed that RUNX1 expression is increased following myocardial infarction and it negatively correlates with cardiac function. Our previous study demonstrated that antagonizing RUNX1 function reduces infarct size and preserves myocardial contractility following myocardial infarction. In the brain, the role of RUNX1 after cerebral infarction merits an investigation. The present study sought to investigate the expression pattern and function of RUNX1 using a rat model of middle cerebral artery occlusion (MCAO). Rats were subjected to MCAO by means of surgically inserting a monofilament into the middle cerebral artery. We report that RUNX1 expression is increased in the brain after MCAO, and the RUNX1 expression is associated with increased infarct size. On-going study examines whether the increase of RUNX1 can be therapeutically targeted to reduce infarct size after MCAO. Our results suggest the translational potential of RUNX1 as a novel therapeutic target for brain protection after ischemic stroke

Biography

Weihong He is a principal investigator and associate professor at the Department of Physiology, West China School of Basic Medical Sciences and Forensic Medicine, Sichuan University. Weihong obtained an MD (2012) at West China School of Medicine & West China Hospital, Sichuan University, and completed a PhD (2017) at the BHF Glasgow Cardiovascular Research Centre, University of Glasgow. Weihong was associate professor at Jining Medical University (2018–2020). Since 2020, Weihong has led a research group to study the pathophysiology of cardiovascular diseases and to investigate novel therapeutic drugs for the treatment of myocardial infarction and cerebral infarction at Sichuan University. He also teaches physiology and mentors both national and international students. Weihong has expertise in a number of methodologies which span the level of biochemistry, cell biology, isolated organ, and whole animal in vivo disease models

Zhenhuan LIU

Guangzhou University of Chinese Medicine
China



Neuroimaging by evaluation nerverenovate and neuroplasticity of acupuncture in children with cerebral palsy

Abstract:

Objective: To investigate the effect of and Acupuncture on brain plasticity and motor development in children with cerebral palsy. Investigate effect on mechanism of apoptosis of brain nerve cells, regulating the expression of neurotrophic factors, promoting the remodeling of nerve synaptic structure and motor development in young rats with cerebral palsy. Two: To evaluate the effect and mechanism of acupuncture on cerebral palsy. Three: The nerve repair effect of acupuncture on cerebral palsy. **Methods:** In this study, 146 cases of brain injury and 1078 cases of cerebral palsy were included by randomized controlled study with ICF Gross motor function measure, Peabody fine motor function, Gesell, muscle tension, joint activity, activity of daily living transcranial doppler,, skull B ultrasound, Brain Nuclear Magnetic Resonance Imaging MRI, Positron Emission Tomography SPECT, Diffusion tensor tractography evaluation method.

Results: the recovery rate of extracellular space (92.3%) was significantly higher than that of the control group (70.8%) ($P < 0.05$), Transcranial Doppler, TCD total efficiency (79.3%) was significantly higher than that in the control group (51.8%) ($P < 0.05$). Acupuncture to promoting the development of neurological and cognitive movement under 6 months children, effectively reduce the neurological sequelae. The total effective rate of the children with cerebral palsy was 87% in the acupuncture group, which was significantly higher than that of the control group ($P < 0.01$). The total effective rate of Brain MRI was 59.55% in the acupuncture group and 13.25% higher than that in the control group ($P < 0.01$). The total effective rate was 91.3% in the 1 year follow-up group, which was significantly higher than that in the control group ($P < 0.01$). the FA value of white matter fiber bundle was significantly higher than that of acupuncture at 60 times ($P < 0.05$). The recovery rate of ultrasonous brain injury (86.7%) in acupuncture group was significantly higher than that in control group (64.4%) ($P < 0.05$). The recovery rate of brain SPECT in acupuncture group was 96.4%, which was significantly higher than that in the control group ($P < 0.01$).

Conclusion: Acupuncture rehabilitation not only promote the development of white matter and gray matter in children with cerebral palsy, but also promote the brain function of children with cerebral palsy remodeling and compensation, and promote social adaptation, language and other cognitive function development, children with cerebral palsy movement and Fine motor function development and recovery, improve the children's self-care ability.

Biography

Zhenhuan LIU professor of pediatrics, Pediatric acupuncturist Ph.D.tutor. He has been engaged in pediatric clinical and child rehabilitation for 40 years. Led the rehabilitation team to treat more than 40,000 cases of children with intellectual disability, cerebral palsy and autism from China and more than 20 countries, More than 26800 childrens deformity returned to school and society and became self-sufficient. The rehabilitation effect ranks the international advanced level. Vice-chairman of Rehabilitation professional committee children with cerebral palsy, World Federation of Chinese Medicine Societies. Visiting Professor of Chinese University of Hong Kong in recent 10 years. He is most famous pediatric neurological and rehabilitation specialists in integrated traditional Chinese and Western medicine in China. He has edited 10 books. He has published 268 papers in international and Chinese medical journals.



**ORAL
PRESENTATIONS**



**NOVEMBER
2024 15**

Yanying Liu

Qingdao Huanghai University
China



Extracellular vesicles containing proteasomes from neural stem cells affect certain pathological and physiological processes in the body

Abstract:

Although the etiology of Alzheimer's disease (AD) is unclear until now, the fact that proteasome dysfunction is general in the pathogenesis of AD has attracted increasing attention from researchers in recent years. Much emerging evidence suggests that proteasomes exist both within cells and in extracellular vesicles (EVs) in body fluids. To better understand the role and significance of proteasome-containing EVs, in this study, we isolated and cultured neural stem cells (NSCs) from the brain of wild-type (WT) or APP^{swe}/PS1^{dE9} AD mice and then collected EVs for structural and functional analysis. The results demonstrate significant differences in the morphology, structure, and function of NSCs and their secreted EVs derived from two different types of mice. Moreover, the proteasome activity in EVs isolated from AD NSCs culture medium was significantly lower than in WT NSCs culture medium. Consistently, when incubated MEF cells separately, compared with WT EVs, the AD EVs decreased the function of proteasomes and exacerbated cell death induced by oxidative stress. In addition, studies from animal research have also shown that mice injected with WT EVs showed improved proteasome function and increased animal survival rate following brain injury, while mice treated with AD EVs showed the opposite results. These research findings suggest that proteasome-containing EVs may reflect the physiological and pathological status of secretory cells and regulate some disease pathological processes, which will provide new insights into the pathogenesis of AD

Biography

Yanying Liu is a professor currently teaching Medical Pathogenic Microbiology and Parasitology, Immunology, and Biochemistry at the Qingdao Huanghai University in China. She received her Ph.D. in Neurobiology from the Capital Medical University (China) in 2006. In the past decade or so, she has worked as a postdoc or research staff scientist engaged in scientific research related to neuroscience at SUNY Upstate Medical University or the University of South Dakota in the USA. Dr. Liu's research is related to several areas: Alzheimer's disease, Huntington's disease, stroke, and stem cells. Her current research interests are the mechanism of the aging process, brain hypoxia, and stroke

Sreelatha K.S

Government College Kottayam
India



Identification of epileptic seizures from the EEG signals through phase space analysis and machine learning technique

Abstract:

Epilepsy is an abnormal brain condition characterized by the excessive synchronous firing of cortical neurons. An electroencephalogram (EEG) serves as a diagnostic tool to identify the underlying brain dynamics responsible for seizures. Neurologists must continuously evaluate EEG recordings from the background activity during preoperative stages to detect seizures, a process that can be tedious and susceptible to errors. Therefore, automatic identification of seizure and seizure-free EEG signals is crucial for effective treatment and diagnosis. This study introduces a novel method for classifying seizure-free (interictal and preictal) and seizure (ictal) EEG signals, utilizing features extracted from phase space reconstruction (PSR). The dynamic characteristics of brain signals manifest as elliptical patterns in phase space due to their oscillatory nature. Consequently, the proposed method calculates the elliptical area and the interquartile range of the Euclidean distances within the PSR as distinguishing features. These features are then fed into a k-nearest neighbour machine learning algorithm to identify seizure and seizure-free EEG signals. The results demonstrate that the proposed features perform superior classification in distinguishing between various seizure stages with minimum computational time compared to existing methods. Thus, phase space features embedded with the machine learning algorithm can serve as a reliable and robust technique for discriminating and identifying seizure signals.

Biography

Sreelatha K.S. is an Associate Professor of Physics at Government College Kottayam, Kerala, India. She holds an M.Sc. in Physics from Mahatma Gandhi University, an M.Phil and a Ph.D. from the Cochin University of Science and Technology, Kerala. With 24 years of teaching and research experience, she has guided Ph.D., M.Phil. and Postdoctoral students and supervised a large number of M.Sc. projects. Her research interests include nonlinear dynamics, brain dynamics, chaos, optical solitons, and nanomaterials. She has published 42 refereed research papers, edited two books, and delivered over 30 invited talks.

XiaoPing Wang

Shanghai JiaoTong University
China



A multidisciplinary expert guide for hepatolenticular degeneration (Wilson's Disease) in china

Abstract:

We have collaborated with experts from relevant branches of the CMA, as well as experts from multiple disciplines, based on the foundation and clinical research progress of Wilson's disease at home and abroad 2024. We have been sponsored by MDS in the field of Rare Movement Disorders program, DWEPI). For a rare disease WD, the data is not comprehensive. It is possible to fully cover or solve all the problems in the diagnosis and treatment of WD. We hope that further international/domestic multicenter RCT research can be carried out to gradually improve to perfection.

- Any age, especially adolescents and young patients, who experience unexplained liver dysfunction or neurological and psychiatric symptoms, should consider screening for WD
- Suspected individuals with WD should undergo K-F ring examination, and it is recommended that experienced ophthalmologists use slit lamp examination.
- Serum ceruloplasmin < 100 mg/L, WD (1B) should be highly suspected; The concentration of ceruloplasmin is within the normal range or critical value, and WD (1A) cannot be ruled out; The serum concentration of ceruloplasmin is higher than the upper limit of normal value, which can basically exclude WD (2A).
- For adult patients with clinical symptoms, basal 24-hour urine copper > 100 μ G is very valuable for diagnosing WD (1A); 24-hour urine copper > 40 μ G helps to detect asymptotically pediatric patients, but with low specificity (2A); For symptomatic pediatric patients, D-penicillamine challenge test for 24-hour urine copper > 1600 μ g. Valuable for diagnosing WD .
- Adolescents and youth with Coombs negative hemolytic anemia should undergo WD related tests (2C); Acute severe hemolysis may be the initial manifestation of WD induced ALF.
- Brain MRI examination can serve as a means for evaluating the condition of WD patients with neurological disorders and monitoring treatment efficacy (1A), especially QSM technique, however Brain MRI T7 is much sensitive but not easy to access to it and not recommend it.

WD is a genetic metabolic disease that can be cured with drugs, and its long-term prognosis depends on the timing of early treatment, and there is currently no suitable treatment drug for all WD patients. Also the alternative treatments of splenectomy, liver transplantation have the positive action, and the genetic & cell treatments are on the way.

Biography

XiaoPing Wang is a Chief Physician and Professor specializing in Neuroscience and Neurology. He works at Shanghai General Hospital Jiading Branch, affiliated with Shanghai Jiao-Tong University School of Medicine. His research focuses on neurodegenerative diseases, stroke, migraine, and movement disorders. He also collaborates with the International Center of Chemical and Biological Research at the University of Karachi.

Kadir Uludag

Shanghai Jiao Tong University
China



Novel tardive dyskinesia detection methods

Abstract:

Novel approaches for detecting Tardive Dyskinesia are revolutionizing the field of mental health diagnostics. By integrating cutting-edge technology and advanced algorithms, researchers have unveiled a pioneering method that promises a paradigm shift in identifying this debilitating condition. Gone are the days of solely relying on traditional assessments. The introduction of AI-driven systems capable of analyzing subtle motor abnormalities with unparalleled accuracy has opened new avenues for early detection and intervention. These systems delve deep into intricate movement patterns, uncovering elusive signs that evade conventional examinations.

Biography

Kadir Uludag holds Ph.D. in Applied psychology (Chinese Academy of Sciences). He is currently doing postdoc in Shanghai Jiaotong University Mental Health Center. His research interest includes schizophrenia research, drug addiction and educational psychology. In addition, he runs a website to share and comment on peer-reviewed articles (ifx0.com)..

Ryo Shinozawa

Institute of Science Tokyo
Japan



Micro happiness propagation based on subjective experience database for supporting well-being with dementia

Abstract:

Previous studies have shown that social participation improved the quality of life of people with dementia (PwD), pointing to the importance of enhancing subjective experiences in preventing dementia and avoiding its progression. However, technologies that take subjective aspects into account and promote daily experiences suitable for each PwD are still underdeveloped. Therefore, in this study, a database of micro happiness was first created by interviewing 77 PwD regarding their experiences in daily life. Micro happiness data here refers to as a database of daily subjective experiences that PwD find enjoyable. Furthermore, the authors proposed a micro happiness recommendation algorithm that takes into account the life functions of PwD, such as age, symptoms, and nursing care levels, and makes it possible to make recommendations in accordance with the algorithm. Using this micro happiness recommendation system incorporating this algorithm, the authors conducted a questionnaire survey to 94 care managers, and confirmed the effectiveness of happiness propagation, such as that they became aware of happiness that they had previously overlooked, and that they wanted to know more about what other happinesses were available. Depth interviews with care managers and dementia patients also demonstrated the usefulness of this database in diagnosing dementia and making initial lifestyle suggestions. It is necessary to further investigate changes in indicators such as quality of life through a longitudinal intervention study to see if there is a micro happiness recommendation effect on dementia patients as well as on the caregivers' side. Keywords: micro happiness; subjective experience; recommender system

Biography

Ryo Shinozawa is a second-year engineering student at the Institute of Science Tokyo (the previous name was the Tokyo Institute of Technology), Japan. He won the JSME Young Fellow Award for his presentation research presentation: Ryo Shinozawa, Mikiko Ohno, Satoko Hotta, Yoshifumi Nishida, "Accumulation and Utilization of Subjective Experiences of Elderly People with Dementia," Proceedings of the JSME Conference on Robotics and Mechatronics, pp. 2A1-H09, 2023.

Sunsu Kurian Thottil

Government College Kottayam
India



A study on optical control of neurons and its dynamics

Abstract:

Recent researches have shown that controlling neurons with photons helps to understand the functioning of brain and to treat associated diseases. In the proposed work an appropriate photosensitive neuron model is used to estimate the nonlinear encoding and responses of neurons driven by external optical signals. Here Phototube can capture and transmit external illumination with high frequency which can be fed into the nonlinear circuit. The effect of photocell can be excited by the photocurrent generated from the photocell. This can be tamed to produce the different dynamical properties of biological neurons. Hence the involvement of functional electronic components can enhance the biophysical function of artificial neural circuits. The coupling possibilities light-dependent neural circuits under a nanoscale memristive component and different noise induced collective dynamics of photosensitive neurons under small-world network etc. are also focused on study. The work also addresses how chaos in neural systems accomplishes biologically important goals such as synchronization, anti synchronization and oscillation quenching mechanism etc. Bifurcation plot, Lyapunov exponent, Hamilton energy and stability analysis etc. are carried out to examine neuronal response. So in the present study, where light is used as control system to understand how the brain works and to create new tools to treat diseases. It may be possible to tune neuron excitability up and down in a light controllable neuron. So changes in neuronal excitability affect neuronal disorders which in turn can control diseases such as Epilepsy, Alzheimers etc.

Biography

Sunsu Kurian Thottil currently employed as the Chief Minister's Post-Doctoral Fellow at Government College, Nattakam, Kottayam India. She received PhD from M.G. University (2021) at age of 35 and has authored international papers, participated in conferences, and contributed to book chapters. Also earned M.Phil. Physics degree from CUSAT in 2011. She has been a lecturer for five years, with teaching experience both PG and UG students. Her research interests are in nonlinear dynamics and focused on theoretical work based on neural network.

Hermann Kurt Russ

Galimedix Therapeutics
USA



Small molecules GAL-101 and GAL-201 as potential oral treatments for Alzheimer's disease

Abstract:

There is a growing body of evidence that toxic oligomers and protofibrils of amyloid beta ($A\beta$) are an underlying cause of Alzheimer's disease. Recent approvals and promising Phase 3 results of anti- $A\beta$ antibody drugs have validated them as a key target for that disease. Galimedix Therapeutics is developing orally administered $A\beta$ aggregation modulators that target the beginning of the $A\beta$ peptide aggregation cascade. Our candidates GAL-101 and GAL-201 act upstream to most other $A\beta$ -targeting approaches on the market and in advanced development, potentially enabling them to effectively impact disease progression without disturbing normal neuronal function. GAL-101 and GAL-201 prevent the formation of all toxic $A\beta$ oligomers that drive neurodegeneration at the source by binding to a specific motif only exposed in the misfolded $A\beta$ monomers, triggering the clustering of these misfolded $A\beta$ monomers and preventing the assembly of harmful oligomers. Data from long-term-potential (LTP) and from animal studies will be presented supporting the mechanism of action and the beneficial biological effects on cognition. An oral Phase 1 study with the lead molecule GAL-101 has been initiated and will enroll the first subjects still this year. With this data, a clinical Phase 2 "Proof-of-concept" study in Alzheimer patients is planned for 2026. Galimedix is a privately owned biotech company.

Biography

Russ is a board-certified clinical neurologist and a professor of pharmacology. He holds a Ph.D. in neuro- and bio-chemistry from the University of Wurzburg, Germany. After his academic career, Dr. Russ joined the pharmaceutical industry and worked 25 years for several international companies including Merck, Teva, and Merz in leading positions in research and development. His scientific focus is on neuro-degenerative diseases, including Alzheimer's, Parkinson's, and degenerative retina diseases. He is (co)inventor of over 25 patents and (co) author of more than 50 peer-reviewed scientific publications. He is co-founder of Galimedix Therapeutics (www.galimedix.com) and lives in Dubai

Asli Beyza Gul

Aston University
UK



Parkinson's care: Digital updates in parkinson's disease management

Abstract:

Recent technological advancements are revolutionizing the understanding, diagnosis, and management of Parkinson's disease (PD). This presentation highlights pioneering studies leveraging artificial intelligence (AI) and machine learning to enhance early prediction, monitor symptoms, and enable personalized treatments for PD patients. Researchers at Great Ormond Street Hospital for Children NHS Foundation Trust (GOSH) have developed an AI tool capable of predicting Parkinson's disease in individuals up to seven years before clinical symptoms appear. Utilizing a panel of eight blood-based biomarkers, this breakthrough allows for earlier and more effective interventions. Radboud University Medical Centre Nijmegen advocates using smart sensors to measure non-motor symptoms of Parkinson's disease at home. These sensors provide reliable data on sleep disturbances, depressive symptoms, and cognitive performance, facilitating continuous monitoring and personalized treatment strategies. Leidy Guarin et al. introduced a machine learning system that quantifies motor symptoms and predicts disease progression by analyzing video recordings of finger-tapping tests. This system detects subtle changes in motor function, enhancing early diagnosis and treatment planning. Cornell University researchers identified three distinct subtypes of Parkinson's disease using machine learning. These subtypes—Inching Pace (PD-I), Moderate Pace (PD-M), and Rapid Pace (PD-R)—exhibit unique genetic signatures and progression rates, supporting the development of tailored treatment strategies. The diabetes drug metformin shows promise in alleviating cognitive symptoms in PD-R patients, highlighting the potential for precision medicine in Parkinson's disease management. These technological advancements underscore the potential of AI and machine learning to significantly improve the diagnosis, monitoring, and treatment of Parkinson's disease, paving the way for more personalized and effective healthcare solutions.

Biography

Asli Beyza Gul is a dedicated medical student at Aston University, Birmingham, UK. She is deeply committed to advancing neurology with a focus on geriatrics. Conducting internationally recognized research on Parkinson's patient management during the pandemic, Asli showcases her dedication to making a difference in this field. As the founding president of Aston Neurology Society, she demonstrates exceptional leadership and a passion for making a difference. Asli's drive and passion position her as a promising future leader in the field, poised to enhance the lives of patients and contribute significantly to medical research and practice.

Hussein Imran Mousa

AANS
Iraq



Brain lesioning for parkinson's disorder in its new form

Abstract:

Background: Radiofrequency lesioning (RFL) though used since the 1950s, its become more precise after introductions of brain ct scan and MRI and more effective and safe after change duration and tempressur of lesioning. Although the publicity of deep brain stimulation (DBS) after 1990s, lesioning surgeries were still the favored and practiced neurosurgical procedures throughout the world.

Objective: analysis RFL in contemporary Functional Neurosurgery for Parkinson Disease and its outcome. Complication rates of RFL are compared with DBS.

Methods: four hundred patients underwent RFL in 2022. Indications for Parkinson's Disease (PD), those not response or side effect of antiparkinson medications. The surgeries performed include thalamotomy for tremor, pallidotomy for rigidity or combined. Appropriate rating scales were used for preoperative and postoperative evaluations.

Results: There was a dramatic response for both tremor and rigidity. Three patients had transient contralateral weakness, three of them had intracerebral hematoma. One patient no improve in tremor, other one there was changing in pattern of the tremor direction. One patient had transient changing in voice.

Conclusion: RFL a useful functional neurosurgical option, safe in expert hands, cheap with more familiar to patients in future might be used to other neurological diseases.

Biography

Hussein Imran Mousa, professor functional neurosurgeon, Iraq director for Middle East stereotactic and functional neurosurgery, is affiliated as chief neurosurgeons in the Almosawi hospital, Neurosurgical center at Alsdr Teaching hospital, Basra Iraq. Membership for many international associations, AANS, NASS, AOspine, ESSFN, ESO, WSO, ISCS, IFNR, AAP, WIP and others. Expertise in neuromodulation and functional neurosurgery, Deep brain stimulation and brain lesioning for Parkinson, movement and psychological disorders, Gamma knife for brain tumours and functional neurosurgery, spinal cord stimulation and pain managements, Regarding spasticity, Baclofen pumps, phenol and Botox injections for spasticity

Sumedh Thero

Sumedh Bhumi Buddha Vihar
India



Meditation, yoga and spiritual fitness heal dementia and brain disorders

Abstract:

Older adults underestimate their level of life stress and early adversity, and kind of the impact that has. For some people, early adversity can affect their entire lives, but for other people, it seems like it catches up to them once they're aging. our frontal lobes helping moderate our emotional responses. But the frontal lobes are also one of the main areas of the brain that begins to decline with age in terms of function. By sitting in any posture, standing, lying or walking for few minutes meditation include general wellbeing improvement, like decreasing depression and anxiety and improving sleep hygiene. By meditation like this one, you're turning on the frontal lobes as you repeat the sounds and touch your fingers. Another area that becomes activated is the thalamus, which is a very core structure of the brain that helps regulate neuronal information flow. Most beneficial aspect of meditation training is increased self-control of emotions and attention. Psychologists are fond of touting the popular phrase "willpower is like a muscle," meaning that the more a person practices delaying gratification, the easier it becomes to deny oneself in the short term for a better payoff later. As per the genetic makeup and climatic conditions different person will observe different sensation on body parts. The Gamma, Beta, Alpha, Theta and Delta ray regulate the brain activities as per sleep and function Fig. And so when you have these areas turned on, what that is basically doing is helping you better concentrate and regulate different parts of the brain. If you right now focus for the next few seconds or minutes on your breathing-breathe in and breathe out very slowly results in you're going to reduce your heart rate, blood pressure and calm your brain down. So it is important to make sure that you can fully engage the practice whether it is meditation, prayer, yoga, or some other spiritual practice

Biography

Sumedh Thero (Dr Banwari Lal Suman) Ph D (Agro) Ex Prof. Principal Scientist (Agronomy) ICAR-Indian Grassland and Fodder Research Institute, Jhansi, Trainer Teacher Vipasana Meditation & Monks ordination; 2009 to Continue. Organized National Seminars, Author of 32 Books in Hindi & English, over 350 research, popular articles. Founder Ancient Buddhism ISSN 2395-471X Supervised ; 2 Ph. D. 7 M. Sc. Visited; Myanmar in Dec 2004, USA 2006, Nepal 2019, Sri Lanka 2012, 2017, 2018, 2019, Thailand 2017, 2024. Monastery: Sumedh Bhoomi Buddha Vihar, Dr Ambedkar Park, Jhansipura, Lalitpur-284403 India Address 702 Masihaganj, Sipri Bazar, Jhansi 284003, India

Kantemir Dzamikhov

Russian Medical Academy
Russia



Association between atrial fibrillation and cognitive function in elderly patients with arterial hypertension and atrial fibrillation

Abstract:

Aim: To assess cognitive functions in elderly patients with arterial hypertension (AH) depending on the presence/absence of atrial fibrillation (AF).

Methods: Two groups were formed according to medical records data: 1) patients with AH and AF (n=165, median age 82 [76; 85] years), 2) patients with AH without AF (n=165, median age 75 [69; 82] years). Cognitive assessment included MMSE, MoCA, Boston naming test, ADAS-Cog.

Findings: MMSE и MoCA did not show any significant differences between the groups. Group 1 had significantly lower BNT score (28 [26;31,5]), compared to group 2 (30 [27;33]; p=0.002). Similarly, group 1 had significantly higher ADAS-Cog score, compared to group 2 - 14 [11;18] and 13 [9;17] points, respectively(p=0.024).

Results: Multimorbidity in patients with AH and AF may contribute to the development of more prominent cognitive impairment, deterioration of executive function, semantic memory, as well as attention, visual-spatial ability, and working memory

Biography

Kantemir Dzamikhov – researcher, physician at the Russian Medical Academy of Continuous Professional Education (Department of therapy and multimorbid pathology named after academician M.S. Vovsi). Has publications in Russian and International journals in the scientific direction: cognitive impairment in elderly patients. Member of the Russian Scientific Society of Internal Medicine (RSMSIM), European Federation of Internal Medicine Academy (EFIM Academy).

Plamen Penchev

Medical University Plovdiv
Bulgaria



Integrative management of vein of galen aneurysmal malformation (VGAM) complicated by obstructive hydrocephalus and epilepsy: A case report and therapeutic insights

Abstract:

The vein of Galen aneurysmal malformation (VGAM) is a rare congenital arteriovenous fistula of the embryonic prosencephalic vein of Markowski, leading to pathological dilatation of the vein. If left untreated, it can lead to multiple complications in the neonatal period, including obstructive hydrocephalus. We present a case report of a six-year-old male patient with severe status epilepticus and a clinical history of VGAM and obstructive hydrocephalus, which was diagnosed by magnetic resonance imaging and angiography. The hydrocephalus was treated by a third ventriculostomy at the age of six months, while the VGAM underwent partial transvenous endovascular embolization of the posterior choroidal feeders at the age of four years; the procedures were successful and no postoperative complications were observed. The epileptic seizures started later and were successfully treated with valproate. However, they resumed after the patient's parents reduced the dosage. The patient was restarted on an appropriate dose of valproic acid and his parents reported no further seizures. This case report highlights the use of appropriate prenatal and neonatal diagnostic methods for VGAM. It explores the nature of the multi-procedural therapeutic approach to the pathology and its complications in the presence of a co-morbidity, namely epilepsy.

Biography

Plamen Penchev is a fourth-year medical student at the Medical University of Plovdiv, Bulgaria. He is the president and co-founder of the Bulgarian students club of neuroscience "Neurologica". He has published 17 articles (7 with IF) and has 23 abstracts presented with oral presentations at conferences in Bulgaria and Europe, some of which he had won prizes for best presentation. Most recently, he won 1st place at the International Trauma Conference in London, UK. He is a peer-reviewer at Open Access Macedonian Journal of Medical Sciences for which he has written 10 peer reviews for articles in the field of neurosurgery. He is a member of the international neurosurgical society "Walter Dandy" and the European Association of Neurosurgical Societies

Kantemir Dzamikhov

Russian Medical Academy of Continuous Professional Education
Russia



Cognitive impairment in multimorbid elderly patients with hypertension and chronic kidney disease

Abstract:

Aim: To assess cognitive functions in elderly patients with arterial hypertension (AH) and concomitant chronic kidney disease (CKD).

Methods: Three groups were formed according to medical records data: 1) patients with AH (n=110, median age 76 [69,8;82,3] years), 2) patients with AH and CKD stage 3a (n=110, median age 81[73,8;84,3] years), 3) patients with AH and CKD stage 3b (n=110, median age 79,5 [72;85,3] years). Cognitive assessment included MMSE, MoCA, DSST, VFT, ADAS-cog.

Findings: Patients with AH and CKD stage 3b had significantly lower MMSE и MoCA scores (26 [24;28,3] and 23 [21;25] points) compared to group 1 (28 [25,8;29] and 24 [22;26] points; $p=0.001$ and $p=0.034$). Similarly, group 3 had significantly lower DSST scores (19 [17;22]) compared to group 1 (21,5 [19;25]; $p=0.045$). VFT showed significantly lower verbal fluency in group 3 compared to group one - 12 [11;13] and 11 [10;13] words, respectively ($p=0.003$). Group 3 had significantly higher ADAS-Cog score (15,5 [11;19]) compared to group 1 (11 [9;15]; $p<0,001$) and group 2 (13,5 [10;17]; $p=0.029$).

Results: Multimorbidity in the form of the concomitant CKD in patients with AH may contribute to the development of more prominent cognitive impairment, deterioration of executive function, semantic memory, as well as attention, visual-spatial ability, and working memory. These correlations may become more pronounced with the increasing severity of CKD

Biography

Kantemir Dzamikhov – researcher, physician at the Russian Medical Academy of Continuous Professional Education (Department of therapy and multimorbid pathology named after academician M.S. Vovsi). Has publications in Russian and International journals in the scientific direction: cognitive impairment in elderly patients. Member of the Russian Scientific Society of Internal Medicine (RSMSIM), European Federation of Internal Medicine Academy (EFIM Academy).



**POSTER
PRESENTATIONS**



**NOVEMBER
2024 15**

Kholod Haj Hussain

University of Sharjah
UAE



Recurrent cerebral venous thrombosis in a female with no known Risk Factors: A case report and literature review

Abstract:

Background: Despite being a rare condition, Cerebral venous thrombosis (CVT) is a serious event that predominantly affects young female adults, with diverse etiologies including systemic and localized risk factors. Patients present with focal neurological deficits and symptoms of increased intracranial pressure such as recurrent headaches and papilledema. Prompt diagnosis and management are crucial to reducing morbidity and mortality risk. We present an unusual case of recurrent CVT in a female with no identifiable risk factors, highlighting the complexities in diagnosis and management.

Case Presentation: A 37-year-old previously healthy woman presented with recurrent CVT episodes despite initial successful anticoagulation therapy. The second episode resulted in drastic neurological deterioration including a large hemorrhagic cerebral infarction, necessitating urgent intervention and a decompressive craniotomy. Despite complications, the patient showed gradual improvement with continuous rehabilitation.

Discussion: CVT presents diagnostic challenges due to its diverse clinical manifestations and rarity. The vagueness of symptoms makes neuroimaging the investigation's cornerstone in promptly establishing a diagnosis. Although Low-Molecular-Weight Heparin (LMWH) has proven to be superior in the treatment of CVT, a significant number of patients still experience increased morbidity and recurrence rates. The recurrence of CVT showcases the need for vigilant monitoring and individualized management strategies.

Conclusion: This case underscores the importance of comprehensive evaluation and long-term monitoring in CVT patients, particularly in cases of recurrence without apparent risk factors. Further research is needed to elucidate underlying mechanisms and optimize management strategies for such intricate cases

Biography

Kholod Haj has completed her MBBS from University of Sharjah with a level of excellence. She is currently a medical intern at EHS. She has 2 publications with 4 other projects awaiting publication.



**ORAL
PRESENTATIONS**



**NOVEMBER
2024 15**

Salim Wali Mohammad Hirani

BCUHB (Betsi Cadwaladr University Health Board)
UK

A study to further develop and refine Carpal Tunnel Syndrome (CTS) nerve conduction grading tool

Abstract:

The severity of carpal tunnel syndrome (CTS) may be categorised in a number of ways utilising one of a range of presently available grading tools. The grading systems proposed by Bland and Padua are the most commonly used, however, both have limitations, which are discussed in detail in this paper. The aim of this research is to establish, using the best available evidence, a clinically appropriate revision of the current CTS nerve conduction grading tool, and to compare with existing grading tools used in UK Neurophysiology clinics. The revised scale is designed from a clinical physiologist perspective and based on the numerical values of nerve conduction findings. In contrast to Bland's (with grading of 1 to 6), the proposed revised grading system is based on more nuanced, descriptive categories, ranging from Normal to Early, Mild Sensory, Mild Sensory Motor, Moderate Sensory, Moderate Sensory Motor, Severe Sensory Motor, Extremely Severe Sensory Motor, and Complete absence. An additional two categories of clinical grading are therefore proposed (Graded 1-8).

Method: A total of 1123 patients (2246 hands) were included in this study, with the aim of evaluating the revised grading system. Data was collected based on the extensive and detailed grading systems previously described by Bland and Padua. The tests were performed by a qualified clinical physiologist (Neurophysiology) using a Keypoint 9033A07 machine, used in line with departmental protocol (peripheral protocol1, 2015). All data was recorded numerically to ensure methodological reliability.

Result: Of the 2246 patients' hands tested, the nerve conduction was graded as normal in 968 hands; nerve conduction showed early changes in 271 hands; mild sensory changes in 215 hands, mild changes in both motor and sensory response in 51 hands; moderate sensory changes in 134 hands; moderate sensory and motor changes in 356 hands; severe changes in motor and sensory responses in 204 hands; extremely severe sensory and motor changes in 33 hands and complete absence of response in 14 hands.

Biography

Salim Wali Mohammad Hirani studied BSc in Karachi University, Pakistan in 1990. He Reg. Technologist from ECNE board UK in 1999. He had completed his on the job training in the field of Physiological Measurement services of one year 6 months from The Aga Khan University Hospital, Karachi Pakistan in 1989. He registered with RCCP. He has almost 28 years' experience in Neurophysiology and 5 years in Cardiopulmonary field. He worked in three different countries in the field of Neurophysiology. He established a new Neurophysiology department in Torbay Hospital. His paper on Refine grading of CTS published in MBC open access journal which achieve great welcome. His next paper on grading of ulnar nerve at elbow published in Research Gate and is almost ready for publication in other journal. Two other research is under process.

Yara Hany Farahat

Alfaisal University
Saudi Arabia



Successful treatment of persistent hiccups in an advanced palliative cancer patient with gabapentin

Abstract:

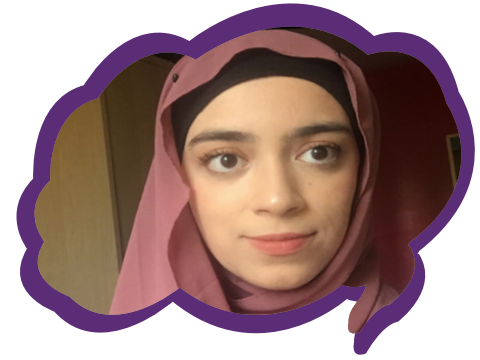
Hiccups may appear to be a common normal phenomenon that does not warrant treatment in the general population. However, severe and persistent hiccups can become annoying and distressing and may decrease the quality of life, especially in cancer patients. The management of hiccups remains challenging. Despite trying many pharmacological and non-pharmacological methods, there is no clear evidence to support the management guidelines. In our case, we successfully treated persistent hiccups of more than four days duration in a patient with acute myeloblastic leukemia with gabapentin.

Biography

Yara Hany Farahat graduated with First Honors from Alfaisal University, Riyadh, Saudi Arabia, and currently works as a Teaching Assistant at the same university. She holds full GMC registration with a license to practice in the UK, as well as a classification from the Saudi Commission for Health Specialties. Yara is planning to pursue specialty training in the UK in the near future.

Henna Ahmed*, Aneesa Imran

University of Birmingham
United Kingdom



A quality improvement project to improve neurology inpatient referrals

Abstract:

The neurology department in Birmingham Heartlands Hospital spotted that neurology inpatient referrals were not being submitted with adequate information. There was a lack of basic information in the email referrals about patient history and investigation findings. Particularly, there little evidence of a neurological examination being carried out which threatens patient safety. This increased waiting times, bed space and decreased the quality of patient care as neurologists had limited information. We incorporated a proforma containing questions for the referrer to include all necessary information in the referral. This should aid the neurology team in prioritising patients more effectively. Additionally, improving the quality and timing of care to the patient. We conducted a baseline audit using a questionnaire assessing if the information was sufficient regarding patient history, examination, and investigations done. We introduced a pro-forma, then repeated the audit and assessed the improvement by the same questionnaire. We used referrals to neurology from a 10-day period. Data was collected from inpatient neurology referrals emails. It was analysed using Microsoft tools like excel, further elaborated by graphical representation. Findings showed that patient name, age and DOB were included on every referral letter post intervention. There was a 28% rise in clinicians recording patient social histories. There was an increase in relevant past medical history recorded however a decrease in medication history recorded. Overall, we found that post intervention there was an increase in basic information included and neurological examinations. We aim to make this pro-forma consistently used for future neurology referrals.

Biography

Henna Ahmed is in her final year (Year 5) of studying Medicine and Surgery (MBChB) at the University of Birmingham Medical School. She has an interest in medical research that improves patient care and leadership. She has presented her research including audits and quality improvement projects at national conferences and has had her work published. Due to her interests, she has many leadership roles as she is ambassador for national committees such as the Pakistani association of Medical Students and Academics and leaders of change. She has an interest in teaching and been awarded a national leadership award for this.

Aneesa Imran is in her final year of studying Medicine and Surgery (MBChB) at the University of Birmingham. She has an interest in General Practice and is serving as a lead committee member of the university GP society. With a drive for leadership and a dedication to patient care, she aims to make a positive impact in clinical practice. Her work includes prize-winning quality improvement projects and audits in neurology, endocrinology, obstetrics and gynaecology. All which have been presented at national conferences. She is passionate about medical education and leadership, having organised and delivered several large events aimed at helping prospective medical students prepare for interviews.



**KEYNOTE
PRESENTATIONS**



**NOVEMBER
2024 15**

Wagih Shafik El Masri

Keele University
UK



Effects of the traumatic spinal cord injuries - Predictors of spontaneous neurological recovery with active physiological conservative management of the injured spine and the patient

Abstract:

Traumatic Spinal Cord Injury (TSCI) is a rare but complex condition. The incidence differs geographically between 10–50 patients/million population/year. The low incidence together with the unstable physiological impairment of the autonomic nervous system caused by the cord damage result in generalised multisystem physiological impairment malfunction that is both dynamic and erratic. This malfunction is in most cases associated with loss of protective sensory functions. The combination of sensory loss, generalised physiological impairment and multi-system malfunction present considerable diagnostic and management challenges that significantly heighten the risk of a wide range of complications that are difficult to diagnose. This risk is further heightened when clinicians are not familiar with the condition and/or are not supported by health professionals who are equally familiar with the presentation and management of these patients from the early hours of injury and who are involved in all stages of management. It is therefore not surprising that before the second world war (WW), despite the great interest shown by many clinicians in the various methods of management of the injured spine, the great majority of patients with TSCI died. The outcome of the condition was transformed during the 2nd WW when Guttman, supported by a multidisciplinary team took full responsibility of a large number injured soldiers and officers from an early stage following injury. They familiarised themselves with the range and complexity of the medical and non-medical problems caused by cord damage and adopted a holistic care approach to the injured spine, the systemic medical effects of cord damage as well as the non-medical effects on patients and family members. They patients can patients can achieve a significant degree of independence and live healthy, enjoyable, productive and often competitive long lives. They also demonstrated that provided systemic complications are prevented and the injured spinal cord is protected from further mechanical damage many patients can recover some motor power and some initially paralysed patients can regain enough power in the lower limbs to ambulate again with or without support. The prognostic indicators of spontaneous neurological recovery (without intervention on the injured spine) were subsequently studied by Frankel and his colleagues in 612 patients in the mid-sixties and published in 1969. They established that Sensory Sparing is a good prognostic indicator of motor activity and that sensory-motor sparing is a good prognostic indicator of further improvement of motor power.

Folman and El Masri in 1989 highlighted the added value of pin prick sensation over posterior column sensation in predicting the return of motor activity suggesting that this could be due to the proximity of the spino-thalamic to the cortico-spinal tract and the reactivation of the motor neurone adjacent to the spared sensory tract. Surprisingly this improvement of motor power occurs irrespective of the radiological presentation including the degree of canal encroachment on admission and on discharge.

Biography

Trained between 1971 & 1983 in Spinal Injuries (SI) and the allied surgical specialities in the Oxford Group of hospitals, Guys Hospital, Stoke Mandeville hospital and the USA. Appointed Consultant Surgeon in Spinal Injuries and Director of the Spinal Injuries Centre at the Robert Jones and Agnes Hunt Orthopaedic Hospital in 1983. Personally treated and provided long life care to over 3,000 SI patients with and without Cord damage. Published over 150 manuscripts including incidence and clinical presentation of Post-Traumatic Syringomyelia in a population monitored for 20 years. Lectured worldwide. Authored the Concepts of "Physiological Instability of the Spinal Cord", "Time related Biomechanical Instability", "Hypothesis of Micro-instability of the injured spine" He is Past President International Spinal Cord Society and Past Chairman British Association of Spinal Cord Injury Specialists. Advised WHO & (NICE). He won many National and International awards. Was commended twice in the House of Lords in the UK as an example of good practice (Hansard) on the 8th April 2003, vol 647, no.79, p204 and 9th March 2006 vol 679, no 117, p88 and 28th February 2009

Marika Cordaro

University of Messina
Italy



Molecular and cellular pathways contributing to brain aging: focus on isothiazolinone

Abstract:

A significant number of emerging pollutants resulting from point and diffuse pollution is present in the environment. These are chemicals that are not commonly monitored but have the potential to enter the environment and cause adverse ecological and human health effects. Recent evidence demonstrated that a new family of organic pollutants released directly or indirectly into the environment through wastewater was represented by isothiazolinone family. Doing a search on Pubmed, we find few results on these compounds, even less on any toxic effects that they could have and unfortunately even less on their mechanism of action. Until today some authors demonstrated that after the exposure there was the release the up-regulation of kinases (MAPK) signaling pathway, and as a consequences with cell death, and neurodegeneration. With this background in our mind we evaluated for the first time whether exposure to CMIT/MIT induced cell death and how it did so. In our study, we have shown that CMIT/MIT exposure inhibits SHSY5Y cell proliferation and induces apoptosis associated with up-regulation of MAPK pathway. Therefore, these findings suggest that CMIT/MIT from consumer products might be one of public health threatening-risk factor in various diseases.

Biography

Marika Cordaro graduated in biology at the University of Messina in 2015. She has completed his PhD in “Applied Biology and Experimental Medicine” at University of Messina, Italy in the year 2017. She is a researcher in physiology, with particular interest in cell physiology and molecular mechanism underling inflammation. In particular, Dr Cordaro, during her research activity, produced about 120 articles that attest a diffuse interest in the field of inflammation and oxidative stress neurological disorder-related. Her research is involved in preclinical studies for the discovery of physiological cellular response that could be used as new potential therapeutic targets. Cordaro have knowledge about animals research, behavioral alterations, biochemical and molecular biology and immunohistochemical analysis.



**ORAL
PRESENTATIONS**



**NOVEMBER
2024 15**

Varda Lev Ram

UCSD
USA



Do perineuronal nets stabilize the engram of a synaptic circuit?

Abstract:

Perineuronal nets (PNNs), a specialized form of extra cellular matrix (ECM), surround numerous neurons in the CNS and allow synaptic connectivity through holes in its structure. We hypothesize that PNNs serve as gatekeepers that guard and protect synaptic territory and thus may stabilize an engram circuit. We present high-resolution and 3D EM images of PNN-engulfed neurons in mice brains, showing that synapses occupy the PNN holes and that invasion of other cellular components is rare. PNN constituents in mice brains are long-lived and can be eroded faster in an enriched environment, while synaptic proteins have a high turnover rate. Preventing PNN erosion by using pharmacological inhibition of PNN-modifying proteases or matrix metalloproteases 9 (MMP9) knockout mice allowed normal fear memory acquisition but diminished long-term memory stabilization, supporting the above hypothesis.

Biography

Varda Lev-Ram is a researcher at the University of California, San Diego, specializing in neuroscience. Her work focuses on understanding the cellular mechanisms underlying neurodevelopmental disorders, aiming to advance therapeutic strategies for affected individuals.



**POSTER
PRESENTATIONS**



**NOVEMBER
2024 15**

Kamal Chafiq

CHU Souss Massa
Morocco



Navigating the complexity of Guillain-Barre syndrome and miller fisher syndrome overlap Syndrome: A pediatric case report

Abstract:

Guillain-Barre syndrome/Miller Fisher syndrome (GBS/MFS) overlap syndrome is an extremely rare variant of Guillain-Barré syndrome (GBS) in which Miller Fisher syndrome (MFS) coexists with other characteristics of GBS, such as limb weakness, paresthesia, and facial paralysis. We report the clinical case of a 12-year-old patient, with no pathological history, who acutely presents with ophthalmoplegia, areflexia, facial diplegia, and swallowing and phonation disorders, followed by progressive, descending, and symmetrical paresis affecting first the upper limbs and then the lower limbs. An albuminocytological dissociation was found in the cerebrospinal fluid study. Magnetic resonance imaging of the spinal cord showed enhancement and thickening of the cauda equina roots. The patient was treated with immunoglobulins with a favorable clinical outcome.

Biography

Kamal Chafiq is the corresponding author affiliated with the Department of Anesthesiology and Reanimation at the Faculty of Medicine and Pharmacy of Agadir, University Ibn Zohr, Morocco. His research interests include anesthesia and critical care, with a focus on advancing medical practices and patient outcomes.

Nasreen Basoudan

Swansea University
UK

Sequential Information Processing: The “Elevated First Response Effect” can contribute to exaggerated Intra-Individual variability in older adults

Abstract:

In this study we examined attention-related reaction time (RT) and intra-individual variability (IIV) in younger and older adults using an iPad-based visual search test, in which, for each trial, participants were required to sequentially press a series of on-screen stimuli numbered from 1 to 8. Although overall performance RT was significantly slower, with greater IIV for the older compared to the younger adult group, there was also a disproportionately slowed RT and greater IIV for the first item in the series compared to all other responses within the trial. When the response to the first stimulus was removed from statistical analysis, the significant age-related RT slowing effect remained, but IIV was no longer significantly greater for the older compared to the younger adults. This pattern of results reveals a dichotomy between the preservation of RT and IIV in aging, and one that is strongly related to research methodology. A finding that may account, at least in part, for the outcome heterogeneity in the study of IIV in aging.

Biography

Nasreen Basoudan is a distinguished academic and researcher at Swansea University, UK. With a profound passion for advancing knowledge in her field, she has significantly contributed to both research and education. Her expertise spans multiple disciplines, and she is renowned for her innovative approaches and dedication to excellence. Through her work, Nasreen Basoudan continues to inspire students and colleagues alike, leaving a lasting impact on the academic community at Swansea University and beyond.



**ACCEPTED
PRESENTATIONS**



**NOVEMBER
2024 15**

Hasmik Zanginyan

Institute of Molecular biology NASRA
Armenia

Unraveling Neuroinflammation: Cytokines and cronassial in multiple sclerosis researche

Abstract:

Special emphasis in understanding the mechanisms behind the development of multiple sclerosis is placed on immunological markers, particularly cytokines, due to their pivotal role in the processes of neuroinflammation and neurodegeneration in both acute and chronic stages of the disease. Significant alterations in the proinflammatory cytokine profile have been noted during the progression of the pathology. The objective of this research was to explore the levels of proinflammatory cytokines (IL-1 β , IL-6, TNF α) in blood plasma as well as in brain and spinal cord homogenates during experimental autoimmune encephalomyelitis and its subsequent treatment. The therapeutic agent used in this study was Cronassial, which contains mono-di-tri-sialylgangliosides. The gathered data highlight the neuroprotective effects of Cronassial when administered to animals afflicted with experimental autoimmune encephalomyelitis.

Biography

Zanginyan Hasmik, scientific worker of the Laboratory of Experimental biology of the Institute of Molecular Biology of NAS RA. In 2013, she defended her thesis and received her PhD in Biological Sciences. He is the author of more than 35 works published in various journals and conferences.

Jing Li

Qingdao University
China

CNKSR2 interactome analysis indicates its association with the centrosome/microtubule system

Abstract:

The protein Connector Enhancer of Kinase Suppressor of Ras 2 (CNKSR2), present in both the postsynaptic density and cytoplasm of neurons, is a scaffolding protein with several protein-binding domains. Variants of the CNKSR2 gene have been implicated in neurodevelopmental disorders, particularly intellectual disability, although the precise mechanism involved has not yet been fully understood. Research has demonstrated that CNKSR2 plays a role in facilitating the localization of postsynaptic density protein complexes to the membrane, thereby influencing synaptic signaling and the morphogenesis of dendritic spines. However, the function of CNKSR2 in the cytoplasm remains to be elucidated. In this study, we used immunoprecipitation and high-resolution liquid chromatography-mass spectrometry to identify the interactors of CNKSR2. Through a combination of bioinformatic analysis and cytological experiments, we found that the CNKSR2 interactors were significantly enriched in the proteome of the centrosome. We also showed that CNKSR2 interacted with the microtubule protein DYNC1H1 and with the centrosome marker CEP290. Subsequent colocalization analysis confirmed the centrosomal localization of CNKSR2. When we downregulated CNKSR2 expression in mouse neuroblastoma cells (Neuro 2A), we observed significant changes in the expression of numerous centrosomal genes. This manipulation also affected centrosome-related functions, including cell size and shape, cell proliferation, and motility. Furthermore, we found that CNKSR2 interactors were highly enriched in *de novo* variants associated with intellectual disability and autism spectrum disorder. Our findings establish a connection between CNKSR2 and the centrosome, and offer new insights into the underlying mechanisms of neurodevelopmental disorders.

Biography

Jing Li completed her PhD at the age of 27 from the Graduate School of the Chinese Academy of Sciences and conducted postdoctoral studies at the Zilkha Neurogenetic Institute, University of Southern California. She is an associate professor at the Institute for Translational Medicine, Qingdao University. She researches protein complexes associated with neurodevelopmental disorders. She has published over 20 papers in reputable journals and serves as a reviewer for several academic journals.

Deena Aldossary

Imam Abdulrahman bin Faisal university
Saudi Arabia

Direct comparison of treatment outcome between the Botulinum Toxin and cgrp monoclonal antibody in migraine patients

Abstract:

Background: Migraine is a genetic disorder characterized by recurrent episodes of headache that are throbbing in nature. The two main treatment options for migraine include the use of Botulinum neurotoxin (BoNT) and Calcitonin gene-related peptide (CGRP) inhibitors. But which of the two drugs is superior in terms of efficacy and safety is not yet established. Therefore the objective of this study was to directly compare the efficacy and safety of anti-CGRP and BoNT for the preventive treatment of chronic migraine.

Materials and methods: This Quasi experimental comparative study was conducted on 80 “Chronic Migraine patients” at King Fahad University Hospital, Dammam, KSA. The selected chronic Migraineurs were divided into 2 groups (40 patients/group) and were treated with the standard doses of: GROUP I (BoNT) and GROUP II (Anti-CGRP). All the patients filled out the Migraine Pain scale (MPSQ), the migraine disability assessment score (MIDAS), Headache Impact Test (HIT-6) and Adverse Drug Event Questionnaire (PRADQ) before the start and at the end of 9 months treatment.

Results: Most of the patients were females (76.3 vs 23.8 %) and were suffering from Migraine for more than 24 months (66 %). The mean age of the participants was 39.07 ± 10.01 years. Both BoTN and Anti-CGRP groups showed a statistically significant decrease in mean HIT-6 and Pain scores after nine months of intervention (p-values 0.005 and 0.000 in the Botulinum group vs 0.000 and 0.000 in Anti-CGRP group). A direct comparison between the two treatment groups showed that anti-CGRP drug caused a higher decrease in HIT-6 and Pain scores as compared to the botulinum drug, but the difference was not statistically significant (p-values 0.075 and 0.07 respectively). The most common adverse effect was “headache”, reported by 45 % and 40 % of patients, followed by the “Pain at site of injection” reported by 27.5 % and 32.5 % of BoTN and anti-CGRP groups respectively. The two groups did not differ significantly in the frequency of various adverse effects such as nausea, vomiting, visual problems, etc. except “joint stiffness”. A significantly higher number of anti-CGRP patients experienced joint stiffness as compared to BoTN group (17.5% vs 0%, p value=0.006).

Conclusion: A direct comparison between the two treatments indicated that neither of the two interventions is statistically superior to the other in terms of efficacy and both are equally effective in the management of migraine. But, BoNT can be preferred over Anti- CGRP because of its cost effectiveness.

Biography

Miss Deena Aldossary is a researcher at Imam Abdulrahman bin Faisal University, Saudi Arabia. Her work focuses on comparing treatment outcomes of botulinum toxin and CGRP monoclonal antibody in migraine patients.

Shreyas Thiruvengadam

Sir Char
Australia

Metastatic intradural primary spinal Osteosarcoma: A case report

Abstract:

Background: Osteosarcomas are a common primary bone neoplasm amongst adolescents and possess a significant metastatic potential culminating in treatment resistance and poor prognosis. Herein presented is the first documented case of lumbosacral intra-dural metastasis of a primary osteosarcoma in a young patient, possibly via intra-dural dissemination following pinhole durotomy in a prior thoracic spondylectomy.

Conclusion: Osteosarcomas remain a difficult pathology to treat, particularly upon metastatic dissemination. The utility of adjuvant radiotherapy following surgical resection of osteosarcomas is increasingly evident in the reduction of local recurrence. In the context of intra-operative pinhole durotomies in resections of high-grade lesions, due consideration should be given to whole spine radiation, although this remains to be an evidence-free zone.

Biography

S Thiruvengadam is currently a surgical registrar working in the Western Australian Neurosurgery State-wide service, and has a special interest in Neuro-oncology. Having worked previously towards developing novel epigenetic therapeutics for triple negative breast cancer, he seeks to employ its utility in the treatment of neurological malignancies previously doomed to be of poor prognoses.

Hala Emad A Danish

King Saud bin Abdulaziz University
Saudi Arabia

Pharmacotherapy for treatment of fatigue in multiple sclerosis: A comprehensive systematic review

Abstract:

Multiple sclerosis (MS) is a demyelinating autoimmune inflammation of the central nervous system in which fatigue is commonly experienced. Due to conflicting evidence on medication efficacy, researchers conducted a systematic review to provide a clear conclusion on which drug most effectively manages fatigue in MS. Registered with PROSPERO (ID: CRD42024500165), the study encompassed a comprehensive search in multiple databases (PubMed, Embase, Cochrane, Web of Science, Scopus) for clinical trials and prospective/retrospective cohort studies evaluating fatigue treatments in MS. Risk of bias was assessed using the Cochrane RoB 2 tool. Eleven studies were included in the review. Amantadine's effects on fatigue was mixed—some studies found improvements in Fatigue Severity Scale (FSS) scores, while others did not. For modafinil, two studies reported decreases in FSS after treatment compared to baseline and placebo, but another study found no significant differences in Modified Fatigue Impact Scale (MFIS) scores versus placebo. A crossover study comparing methylphenidate, amantadine, modafinil, and placebo observed no statistically significant differences in MFIS scores. This study highlighted the complexity and variability in pharmacotherapy effectiveness for managing fatigue in MS. Amantadine was the most extensively studied, but its efficacy was inconsistent. Modafinil and acetyl-L-carnitine also demonstrated potential benefits, but findings were not consistently significant. Memantine showed a non-significant trend, while methylphenidate had limited supporting evidence. The heterogeneity in results was likely due to differences in study designs, fatigue assessment tools, patient populations, and outcome measures. Careful monitoring is needed, as adverse events were reported across all studied medications.

Biography

Hala Emad A Danish is 6th year medical student in King Saud Bin Abdulaziz University for Health Sciences, Jeddah, Saudi Arabia. she have unrelenting curiosity and interest regarding improved patient quality of life and involving others in this endeavour by leading the Internal Medicine Club in my university. she like to explore this through both research and campaigns by hosting patient awareness activities in the latter where dire consequences ensue: covid-19 pandemic, bone marrow transplantation, common infectious disease in primary health care, and breast cancer.

Xin-Ling Wang

Freiburg University
Germany

CREB-PER2 feedback loop mediates transitions of mania- and depression- like behaviors

Abstract:

Bipolar disorder (BD) is a severe psychiatric disorder characterized by alternating manic/hypomanic and depressive episodes, with rare reports on the mechanism of manic/depressive behavior switching. Our study revealed that knockdown of Per2 in the hippocampal CA1 induces mania-like behaviors in rats, in contrast, overexpression of Per2 in the same region results in depression-like behaviors, indicating that Per2 expression levels may mediate the manic/depressive phenotype switch. As pCREB is the transcription factor of Per2, we found that pCREB regulates the expression of Per2 and CREB-Per2 pathway forms a positive feedback loop which underlies the manic/depressive phase transformation.

Biography

Xin-Ling Wang, born in 1986, got her Bachelor's degree in Clinical Medicine in Xi'an Jiaotong University in 2010 and got her Master's degree in Psychiatry in Zhejiang University in 2013. In 2020, she was awarded her Ph.D. in Pathophysiology in University of Chinese Academy of Sciences. From August 2020 to Sep. 2023, she worked in Shandong University and studied into the pathogenesis of mood disorders. From Sep. 2023 to Aug. 2024, she worked in the same field in the Institute of Cellular and Integrative Neuroscience (INCI), CNRS in France as a postdoc researcher and studied into the link of clock genes and dopamine signaling in the development of mood disorder. From Sep. 2024 on, she has continued working on this project in the Medical Center- Freiburg University.

Yafei Wang

Shanghai Jiao Tong University
China

Hsa_circ_034367 regulates the progression of SHH-type medulloblastoma through the has-miR-17-3p/DICER1 axis

Abstract:

Background: Medulloblastoma is the most common malignant brain tumor in children, but its pathogenesis is unknown and there is a lack of early diagnostic markers or effective therapeutic targets. circRNA is a class of endogenous non-coding RNAs that regulate gene expression in eukaryotes. Hsa_circ_034367 is a newly discovered circRNA highly expressed in SHH-type medulloblastoma. The role and mechanism of circRNA in SHH-type medulloblastoma remain to be further elucidated.

Methods: After ethical approval, several samples of medulloblastoma were obtained in our hospital, and adjacent tissues were obtained at the same time. By whole transcriptome sequencing and bioinformatics analysis, circRNA with high expression was screened. The expression pattern of hsa_circ_034367 in medulloblastoma was detected by Sanger sequencing and Northern blots. Real-time fluorescence quantitative PCR was used to detect the expression of hsa_circ_034367, has-miR-17-3p and DICER1. Lentivirus-infected medulloblastoma cell lines daoy and uw228 were constructed, and cell proliferation, migration, invasion and apoptosis were detected by MTT assay, colony formation assay, transwell assay, CellTiter-GLO fluorescence cell viability assay and flow cytometry. In addition, the interaction between hsa_circ_034367, has-miR-17-3p and DICER1 was examined by dual luciferase reporting assay and RNA drop-down assay. DICER1 protein expression was detected by Western blot. To investigate the role of hsa_circ_034367 in the growth of medulloblastoma tumors in vivo by Patient-derived tumor xenograft (PDX) model.

Results: Hsa_circ_034367 was overexpressed in medulloblastoma tissues and cells, and its silence could inhibit the proliferation, migration and invasion of medulloblastoma and accelerate cell apoptosis. Has-miR-17-3p can be wiped by hsa_circ_034367 sponge, and its overexpression can inhibit the progression of medulloblastoma. Further experiments showed that the has-miR-17-3p inhibitor reversed the negative regulation of hsa_circ_034367 knockdown on medulloblastoma cell progression. In addition, DICER1 is the target of has-miR-17-3p, and its downregulation can inhibit the progression of medulloblastoma cells. Overexpression of DICER1 reversed the inhibitory effect of has-miR-17-3p on the progression of medulloblasto-

ma cells. Animal experiments showed that hsa_circ_034367 gene knockout can effectively inhibit cell apoptosis.

Conclusion: hsa_circ_034367 and DICER1 can inhibit medulloblastoma tumor growth. These data suggest that circRNA is a potential target for controlling the proliferation of SHH-type medulloblastoma.

Biography

Yafei Wang, M.D., studied Pediatric Neurosurgery at Xinhua Hospital, Shanghai Jiao Tong University. **Chenran Zhang**, M.D., Associate Chief Physician, Master's Advisor, is a member of the American Association of NeuroSurgeons (AANS) and the International Association of Pediatric Neurosurgery (ISPN).

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