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PROCEEDINGS OF

VIRTUAL EVENT

2ND CLINICAL NEUROLOGY AND NEUROSURGERY CONGRESS

JULY 15-16, 2021

Theme:
Unravel the Recent Advancements and Novel
Discoveries in Neurology and Neurosurgery

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CLINICAL NEUROLOGY 2021

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PROGRAM-AT-A-GLANCE

CLINICAL NEUROLOGY
2021

DAY 1
THURSDAY, JULY 15, 2021

Scientific
Program

BST – British Summer Time

09:45-10:00	**Opening Ceremony**

Sessions: Neurology | Neurosurgery | Neuroscience | Neuropsychiatry | Pain Disorder and Management | Pediatric Neurology | Neuro-Oncology and Brain Tumors | Neurophysiology | Neurodegenerative Disease and Neurodegeneration | Neurological Disorders| Sleep Disorder | Stroke | Parkinsons Disease | Epilepsy | Multiple Sclerosis | Alzheimers Disease and Dementia | Neuromuscular Disease

10:00-10:25	**Title: Shuni virus- an abortogenic neurotropic virus with zoonotic potential** Natalia Golender, Kimron Veterinary Institute, Israel
10:25-10:50	**Title: Glucocorticoid receptor expression in brain structures of socially isolated rats** Sophie Dmitrievna Shirenova, The Institute of General Pathology and Pathophysiology, Russia
10:50-11:15	**Title: The diagnosis and monitoring of diabetic neuropathy using rapid sudomotor function testing in the diabetes clinic** Anand Hinduja, Aarti Clinics, India
11:15-11:40	**Title: Can anesthesia or sedation cause patients to fixate on their second language?** Craig Webster, University of Auckland, New Zealand

Refreshment Break 11:40-11:55

11:55-12:20	**Title: Surface electromyography analysis of shoulder internal rotators in frozen shoulder: Case study** Amita Aggarwal, Dr. D.Y. Patil College of Physiotherapy, India
12:20-12:45	**Title: Fusobacterium nucleatum and brain abscess-Case report and literature review** Chokchai Chaovarin, Prasat Neurological Institute, Thailand

12:45-13:10	**Title: A comparative study of different machine learning techniques for brain tumor analysis** **Gaurav Gupta,** Shoolini University, India
13:10-13:35	**Title: Predictors of in-hospital mortality in epilepsy and epileptic seizures in the elderly populace – A cross sectional study from rural India** **Archana Verma,** UP University of Medical Sciences, India

Lunch Break 13:35-14:00

14:00-14:25	**Title: COVID-19 and Sustainable Development Goals (SDGs): An appraisal of the emanating effects in Nigeria** **Fisayo Fagbemi,** European Xtramile Centre of African Studies, Belgium
14:25-14:50	**Title: Continuous epidural catheter for anaesthesia management and post-op pain relief in colorectal surgery, complicated by epidural haematoma and bilateral paraplegia: A case report** **Narjes Mohammadzadeh,** Tehran University of Medical Sciences, Iran
14:50-15:15	**Title: Human toxoplasmosis in Mozambique: Gaps in knowledge and research opportunities** **Leonardo Manuel,** Universidade Lúrio, Mozambique
15:15-15:40	**Title: Recurrent tuberculous cerebellar abscess: A case study and review of the literature** **Yakhya Cisse,** Fann University Hospital Center, Senegal
15:40-16:05	**Title: Giant Encephalocele** **Turyalai Hakimi,** Kabul University of Medical Science, Afghanistan

Refreshment Break 16:05-16:20

16:20-16:45	**Title: Systolic and diastolic function in chronic spinal cord injury** **Bonnie Legg Ditterline,** University of Louisville, USA
16:45-17:10	**Title: Impaired lipid homeostasis underlies axonal degeneration of human cortical projection neurons in hereditary spastic paraplegia** **Xue-Jun Li,** University of Illinois at Chicago, USA
17:10-17:35	**Title: Gsx1 promotes locomotor functional recovery after spinal cord injury** **Li Cai,** Biomedical Engineering at Rutgers University in New Jersey, USA

17:35-18:00	**Title: Aberrant B cell response and ongoing disease activity in a multiple sclerosis patient receiving Cladribine** **RF. Radlberger,** Paracelsus Medical University, Austria
18:00-18:25	**Title: Evolving treatments for pediatric epilepsy** **M. Michael Bercu,** Spectrum Health, USA

End of Day 1

DAY 2
FRIDAY, JULY 16, 2021

Scientific
Program

Sessions: Neurology | Neurosurgery | Neuroscience | Neuropsychiatry | Pain Disorder and Management | Pediatric Neurology | Neuro-Oncology and Brain Tumors | Neurophysiology | Neurodegenerative Disease and Neurodegeneration | Neurological Disorders| Sleep Disorder | Stroke | Parkinsons Disease | Epilepsy | Multiple Sclerosis | Alzheimers Disease and Dementia | Neuromuscular Disease

10:00-10:25	**Title: Childhood generalized specific phobia as an early marker of internalizing psychopathology across the lifespan: results from the World Mental Health Surveys** **Ali Al-Hamzawi,** Al-Qadisiya University, Iraq
10:25-10:50	**Title: The effects of melatonin on endoplasmic reticulum, mitochondrial function, and their cross-talk in the stroke** **Leila Hosseini,** Tabriz University of Medical Sciences, Iran
10:50-11:15	**Title: The effect of lavender and Citrusaurantium on pain of conscious patients in intensive care units: A parallelrandomized placebo-controlled trial** **Mahlagha Dehghan,** Kerman University of Medical Sciences, Iran
11:15-11:40	**Title: A comparison of the effects of rituximab versus other immunotherapies for MOG-IgG-associated central nervous system demyelination: A meta-analysis** **Peng Bai,** Inner Mongolia People's Hospital, China
11:40-12:05	**Title: Neuroinflammation in Alzheimer's disease** **R. M. Damian Holsinger,** The University of Sydney, Australia

Lunch Break 12:05-12:30

11:55-12:15	**Title: Audiovestibular functioning of post-menopausal females with osteoporosis and osteopenia** **Manisha K Juneja,** Govt. Medical College and Hospital, India

End of Day 2

Closing Remarks

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3ʀᴅ CLINICAL NEUROLOGY AND NEUROSURGERY CONGRESS

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2ND CLINICAL NEUROLOGY AND NEUROSURGERY CONGRESS

JULY 15-16
2021

Scientific Abstracts
Day 1

CLINICAL NEUROLOGY 2021

Shuni virus- an abortogenic neurotropic virus with zoonotic potential

N.Golender[1], V. Bumbarov[1], A. Eldar[1], M. Beer[2] and K. Wernike[2]
[1]Kimron Veterinary Institute, Israel
[2]Institute of Diagnostic Virology, Friedrich-Loeffler-Institut, Germany

Viruses of the Simbuserogroup, one of 18 serogroups assigned to the genus Orthobunyavirus of the familyPeribunyaviridae, order Bunyavirales,are transmitted by blood suckling insects. Simbuserogroup viruses induce predominantly either none or onlymild unspecific clinical signs in affected adult mammalians. Rarely, these viruses cross theblood brain ortransplacentalbarriers, causing encephalitis and fetal infection, respectively.Until recently, only two members of this virus group were considered to be zoonotic, namely Oropouchevirus and the closely related Iquitos virus, which circulate in South America. They causedengue fever-like symptoms and in a few cases an aseptic meningitis.

Shuni virus (SHUV), which is also a member of the Simbuserogroup, is known since 1967, when it was isolated from blood of a febrile one-year old child in Nigeria. SHUV got a veterinary importance in 2009, when it was detected in horses with neural manifestations that led to the death of several animals. In addition, SHUV has beenrepeatedly found in aborted malformed fetuses of domestic ruminants in Israel since 2014, and it was alsoidentified as causative agent of neurological disease and death of young cattle. Experimental infection of calves with an Israeli SHUV strain confirmed the crossing of the blood-brain barrier and the viral replication in the bovinecentral nervous system. Moreover, the virus was identified by molecular methods in cerebrospinal fluidsof a fewSouth African human hospital patients with neurological signsof unknown etiology. All these factsindicate an increasing importance of SHUV as a potential zoonosis and demands further observation, screening of insect vectors and field samples from both animals and humans, and detailed investigation of biological features of the virus.

Biography

Natalia Golender graduated from the Veterinary faculty of Samarkand Agricultural Institute, Uzbekistan in 2002. She was working as a veterinarian in the division of poultry and fish diseases, Kimron Veterinary Institute (KVI), Israel during 2004-2010, mostly on diagnosis and characterization of avian influenza viruses. Since 2010, she has been working in the division of virology at KVIparticipating in laboratory diagnosis, as well as in experimental, clinical, genetic and epidemiologic investigations of several arboviral infections affecting ruminants. Now she is a PhD candidate in Hebrew University of Jerusalem, investigating viral outbreaks.

Theme: Unravel the Recent Advancements and Novel Discoveries in Neurology and Neurosurgery

Glucocorticoid receptor expression in brain structures of socially isolated rats

S. Shirenova, N. Khlebnikova and **N. Krupina**
The Institute of General Pathology and Pathophysiology, Russia

Chronic or recurring stress may lead to CNS impairments and result in neurologic diseases through synaptic plasticity mechanisms involving glucocorticoid receptors (GR) and changes in the hypothalamic-pituitary-adrenal (HPA) axis [Sapolsky, 2015]. A dysregulated stress response is often seen across many neuropsychiatric disorders.Prolonged social isolation causes chronic stress in both humans and rodents. Recently, we have shown that social isolation impairs cognitive abilities in Wistar rats of both sexes,although single-housed females compared with males showed more pronounced cognitive impairments [Krupina, Shirenova, and Khlebnikova, 2020]. The findings specified the greater females' vulnerability to the stress of prolonged social isolation. We did not reveal basal corticosterone changes in rats of both sexes; however, we found an increase in the relative weight of the adrenal glands in socially isolated female rats. The present study aims to assess GR expression using Western blot in the brain structures – the hippocampus, frontal cortex, and striatum in the rats under social isolation. Twenty Wistar rats were used for this study (10 males and 10 females). Experimental animals (5 males and 5 females) were kept one per cage for nine months, starting from one month. Control rats were kept in groups of 5 per cage. We used monoclonal antibodies for the Western blot analysis. In malerats, social isolation decreased GR expression in the hippocampus and increased it in the frontal cortex. In females, only a trend to reduce GR expression in the hippocampus was observed. Striatum GR expression was not affected by social isolation in both sexes. Our data suggest that the impact of the chronic stress of social isolation is sex-dependent.Regulatory effects of gonadal steroids on the HPA-axis involving brain GR mechanisms may specify stress consequences in different sexes.

Biography

## The diagnosis and monitoring of diabetic neuropathy using rapid sudomotor function testing in the diabetes clinic

Anand Hinduja
Aarti Clinic, India

Diabetic peripheral neuropathy (DPN) is the most common complication of diabetes mellitus (DM); however, early detection is lacking in the clinic level. Sudoscan is a simple, 3-minute, non-invasive technology that evaluates sudomotor function of the palms and soles. Sweat gland chloride ion conductance in response to an applied voltage provides a measure of sympathetic C fibers innervating sweat glands. Electrochemical skin conductance (ESC) results are displayed graphically (Figure) and numerically on a scale of 0 to 100 microSiemens (µS). Unmyelinated C fibers degenerate early in DPN, indicated by ESC < 70µS.

We present the case of a 39-year-old female with a 5-year history of Type 2 DM presenting with back pain referred to her feet, and tingling sensation in her feet. Glycated hemoglobin was 9.4% and fasting blood glucose 221mg/dL while receiving Metformin 1g and glimepiride 2mg daily. Orthopedic evaluation and analgesics provided no diagnosis or relief. Feet and hands ESC were 54 and 69µS, respectively, suggesting DPN.

DM treatment was altered to Metformin 500mg and repaglinide 1mg, both twice daily, empagliflozin 25mg daily, and supplements of methylcobalamin, folic acid, vitamin K2, alpha lipoic acid and biotin. Her symptoms improved rapidly; follow-up 8 months later showed glycated hemoglobin 7.2%, and feet and hands ESC of 63 and 87µS, respectively.

Conclusion: Small nerve testing for early detection of DPN is rarely performed in the DM clinic. ESC rapidly quantifies sudomotor function; its excellent reproducibility and good sensitivity for DPN allow for early detection and careful therapeutic monitoring before irreversible nerve damage ensues.
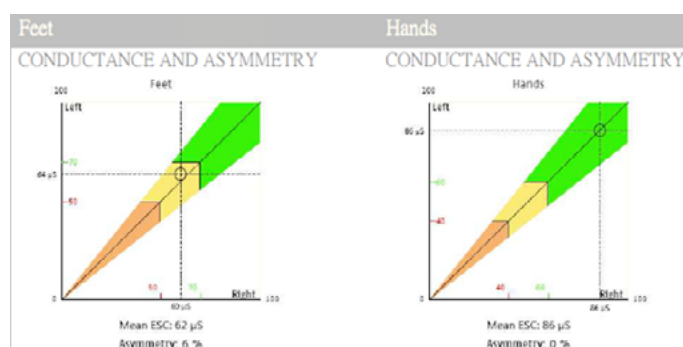
Figure: Electrochemical skin conductance display of results

Theme: Unravel the Recent Advancements and Novel Discoveries in Neurology and Neurosurgery

Biography

Dr Anand Hinduja is a leading Consultant Physician practicing at Aarti Clinics, Kharghar, Navi Mumbai, India with over 13 years of experience. He has completed his MRCP (UK) specialty certification in Endocrinology and Diabetes and has special interest in Metabolic Syndrome and Diabetic Neuropathy. He is also only the 3rd Doctor in India to be certified as a Clinical Simulation Expert by the Society of Simulation in Healthcare. He has delivered over 100 talks at national and international platforms on wide ranging topics including Diabetes, Neuropathy, Kidney Disease, Obesity and Thyroid disorders. He has over 20 publications on Diabetes and Simulation in international journals.

PEERS ALLEY MEDIA

Theme: Unravel the Recent Advancements and Novel Discoveries in Neurology and Neurosurgery

Can anesthesia or sedation cause patients to fixate on their second language?

Craig S. Webster
Department of Anaesthesiology, University of Auckland, New Zealand

A case series of ten patients undergoing sedation or general anaesthesia will be presented where patients involuntarily fixated on their second or non-native language. While counting aloud during induction, one patient switched from his first language (English) to Hindi as his level of consciousness reduced, another spoke in his second language (English) for the duration of a spinal procedure under sedation, and the remainder of patients fixated on their second language for minutes to hours while recovering from general anaesthesia. All language disturbances spontaneously resolved without sequalae, but the majority of patients denied or did not recall having spoken in their second language. All second languages appear to have been learnt after the sensitive period for language had ended (age >~5 yrs), known to result in the second language being stored in more disparate and numerous locations in the cortex, including outside of Broca's area. Modern neuropsychology studies propose that consciousness is an information network with a small-world topology, and this may supply clues as to why anaesthesia could cause fixation on a second language. Small-work networks have a semi-random structure and contain hubs where many long-distance connections coincide. Anaesthesia appears to work by disabling key hubs in the brain, halting global information transfer in the cortex and thus rendering a state of unconsciousness. Broca's area is known to be the primary hub for the production of first languages, therefore we might speculate that if this hub were disabled during sedation or recovery from anaesthesia that the more numerous areas associated with a second language may be the only language faculty available. Such an interpretation may also explain why many patients deny having spoken in their second language during the fixation event, given the impairment in conscious awareness.

Biography

Dr Craig Webster is an Associate Professor with the Department of Anaesthesiology and the Centre for Medical and Health Sciences Education at the School of Medicine, University of Auckland, and has degrees in psychology and a PhD in medical human factors. He has extensive experience in clinical and human factors research projects, including work on the redesign and cognitive ergonomic evaluation of medical equipment, compliance with safety initiatives, patient safety and the better understanding of the patient experience. He also has interests in the theoretical and practical aspects of the way people and technology interact in complex systems and organisations, and the effects such interaction has on safety.

Theme: Unravel the Recent Advancements and Novel Discoveries in Neurology and Neurosurgery

Surface electromyography analysis of shoulder internal rotators in frozen shoulder: Case study

Amita Aggarwal[1], Manisha Rathi[2], Tushar J Palekar[3], Prajwal Rao[4] and **Shalesh Rohatgi[5]**

[1,2,3]*Dr. D. Y. Patil College of Physiotherapy, Dr. D.Y. Patil Vidyapeeth, India*
[4,5]*Department of Neurology, Dr. D. Y. Patil Medical College, India*

Frozen shoulder is a condition of uncertain etiology characterized by significant restriction of both active and passive shoulder motion that occurs in the absence of a known intrinsic shoulder disorder. We reviewed three cases of either stage 1 or stage 2 clinically diagnosed and referred frozen shoulder patients who have greater affection of external rotation range of motion. The purpose of this study was to find how the shoulder internal rotators activity of frozen shoulder differs from normal one. This was an observational study performed among 3 frozen shoulder (2 males and 1 female) patients with mean age 45.6± 13.6 SD years. Participants were recruited fromDr. D.Y. Patil College of Physiotherapy, Pune .Surface electromyographic values were expressed as Root mean square of the amplitude and was analysed for shoulder internal rotators of affected frozen shoulder using Electromyography (EMG). It was compared to normal side among same participants. Average of the three trial readings was recorded for each side and for each muscle. It was found that anterior deltoid has higher activity on frozen shoulder side compared to normal unaffected one. In opposite, Pectoralis major, Teres major and Latissimus dorsi have shown decreased activity in frozen shoulder compared to normal unaffected one.

Biography

Dr. Amita Aggarwal

Associate Professor

Dr. D.Y. Patil College of Physiotherapy,

Dr. D.Y. Patil Vidyapeeth Pune

MPT ORTHOPAEDICS

Currently persing her PhD since 2019 in Physiotherapy subject.

Academic and Clinical Experience-7 years 9 months

Certified Aerobic trainer and had got specialization inMyofascial Release Therapy, Kinesiotaping,Muscle energy techniques,Pilates, EMG,NCV and Mulligan therapy.

Theme: Unravel the Recent Advancements and Novel Discoveries in Neurology and Neurosurgery

She had been actively involved in delivering lectures at various institutes along with attending workshops and conferences.

She had conducted aerobic training and fitness sessions for IT and hospital settings.

Along with clinical,she had major interest in research work writing. She has more than 14 publications in peer reviewed journals and is on reviewer board for Scopus indexed journals too.

ORCID id-https://orcid.org/0000-0003-0092-6228.

Theme: Unravel the Recent Advancements and Novel Discoveries in Neurology and Neurosurgery

Fusobacteriumnucleatum and brain abscess-Case report and literature review

Chokchai Chaovarin[1], Pongwat Polpong[2] and **Orawan Sungkhachat[3]**

Prasat Neurological Institute, Thailand

Background: Fusobacteriumnucleatum(F. nucleatum) causes a wide spectrum of human diseases, but intracerebral infections are rare. There has been some case report since 1981. The most recent review of literature was conducted in 2014 about F. nucleatumbrain abscess [1].

Case presentation: A 42 year old Thai male with brain abscess caused by F. nucleatumwithout predisposing factor. F. nucleatumwas detected by anaerobic culture and 16S rRNA bacterial molecular identification. The patient showed a near total clinical recovery after treatment by intravenous antibiotics. The point of focus in this case is F. nucleatumbrain abscess can occur without obvious primary source of infection.

Conclusion: Antibiotics that cover aerobic and anaerobic bacteria should be prescribed for empirical treatment of brain abscess. 16S rRNA bacterial identification is a useful diagnostic tool in culture negative cases and it has a benefit for diagnosis and guide proper antibiotic treatment.

Biography

Chokchai Chaovarin, MD.
Department of Medicine, Prasat Neurological Institute, Bangkok, Thailand

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A comparative study of different machine learning techniques for brain tumor analysis

Gaurav Gupta and **Rammah Yousef**
Yogananda School of AI, Computers and Data Science, Shoolini University, India

Brain Tumor analysis have been one of the most primal concerns because the complexity of analysing and diagnosing it from the MR images. Gliomas, is considered as the most popular malignancy in brain, with various grades of aggressiveness, different harbinger and different heterogeneous tissues sub-regions, such as, invaded tissue, necrotic histologic and non-enhanced core. Since that isolation, detection and classification of the brain tumor is too complicated and time consuming for the radiologists and clinical supervision, computer aided techniques were involved to support the accurate decisions and diagnosis. In this study, the Machine Learning techniques that are available in the research data were discussed and listed in order to improve the performance and overcoming the limitations of medical images analytics. Our main goal of this review is to grasp the outperformed techniques that can provide better brain tumor dissect. Brain tumor characterization go through multiple steps before reaching the satisfied results for classifying and diagnosis which will lead to the planning of treatment like radiotherapy.

Twenty-one state-of-the-art tumor segmentation and classification algorithms were used for brain MRIs of both low grade and high grade, and seventeen techniques were compared according to the achieved accuracies. We found from this quantitative comparison that some of the algorithms have performed best when using other algorithms besides, for example, selection features algorithm such as: PCA, Multi Fractal Detection (MFD), Cumulative Variance Method (CVM), etc.

Biography

Dr. Gaurav Gupta is Senior IEEE Member and currently serving as an Assistant Professor at Yogananda School of Artificial Intelligence Computers and Data Science, Faculty of Engineering & Technology, Shoolini University, Solan (HP) India where he teaches and does research in machine learning in different domains especially in healthcare and agriculture. Dr. Gaurav Gupta received BE degree (2006) from Dr. B. R. Ambedkar University, Agra, Uttar Pradesh. He received PG (2011) and Ph.D. (2019) degree in the stream of Computer Science Engineering from KSOU-VIT, Karnataka and Shoolini University, respectively. He is certified Oracle Database administrator as well AWS Cloud certified Educator.

Theme: Unravel the Recent Advancements and Novel Discoveries in Neurology and Neurosurgery

Predictors of in-hospital mortality in epilepsy and epileptic seizures in the elderly populace – A cross sectional study from rural India

Archana Verma[1], Debora J. Mathew[2] and Alok Kumar[3]

[1]Professor, Department of Neurology, UP University of Medical Sciences, India
[2]Junior Resident, Department of Community Medicine, UP University of Medical Sciences, India
[3]Professor & Head, Forensic Medicine & Toxicology, UP University of Medical Sciences, India

Aim: This study was aimed to analyze the predictors of in-hospital mortality in epilepsy and epileptic seizures in the elderly population of the rural regions of North India.

Methods: 250 hospitalized elderly ($\geq$60 years of age) were evaluated for predictors of in-hospital mortality who presented with epilepsy or epileptic seizures during the study period from July 2017 to September 2019.

Results: The mean age of the study population was 67.2$\pm$7.7 years, among them, 49.2% (123) cases were of convulsive status epilepticus (CSE), 37.6% (94) cases were of acute symptomatic seizures and 13.2 % (33) cases were of epilepsy. The most common etiology was a stroke in 58% of cases. In-hospital mortality was 21.6% and the variables significantly related with mortality on multivariate analysis were: cases with age more than 70 years (odds ratio(OR)=2.76, 95% confidence interval (CI) =1.24-6.12; p=0.013), cases with new onset CSE (NOCSE) (OR= 15.24, 95% CI= 3.13-73.92; p=0.001), duration of hospital stay more than $\geq$5 days (OR= 2.27, 95% CI= 1.03-4.99; p=0.042).

Conclusions: The predictors of in- hospital mortality in the elderly were related to age more than 70 years, NOCSE, longer duration of hospital stay.

Theme: Unravel the Recent Advancements and Novel Discoveries in Neurology and Neurosurgery

Factors		Mortality (N=54)	%	Unadjusted 0R (95%CI)	Adjusted 0R(95%CI)	p
Age	60-70	34	17.6	1	1	
	>70	20	35.1	**2.53 (1.31-4.88)**	**2.76 (1.24-6.12)**	**0.013**
Gender	Male	36	19.7	0.667 (0.35-1.28)	0.63 (0.28-1.40)	0.26
	Female	18	26.9	1	1	
Epileptic seizure	New onset CSE	31	40.3	**14.83 (3.35-65.68)**	**15.24 (3.14-73.92)**	**0.001**
	Acute symptomatic seizures	21	22.3	**6.33 (1.42-28.30)**	4.34 (0.90-21.31)	0.068
	CSE with history of epilepsy	2	4.3	1	1	
Etiology						
Infection		9	23.7	0.85 (0.22-3.35)	0.35 (0.06-2.10)	0.238
Vascular		40	27.6	1.05 (0.32-3.48)	0.50 (0.12-2.78)	0.502
Metabolic disturbance		1	7.1	0.21 (0.02-2.18)	0.08 (0.01-1.01)	0.051
Posttraumatic		4	26.7	1	1	
Duration of stay in hospital in days						
1-4 days		13	12.6	1	1	
≥5 days		41	27.9	**2.68 (1.35-5.31)**	**2.27 (1.03-4.99)**	**0.042**

Table: Risk factors for mortality: Multiple logistic regressions

Biography

Currently working as Professor in Department of Neurology , UP University of Medical Sciences, Saifai, Etawah(UP). I joined this institute as Assistant professor on 26/09/2009. Published 61 national and international publications. Worked as Principle / Co-investigator in extramural projects. Attended and presented two papers in 6th Baltic Sea Summer School on Epilepsy. An International Education Course. July 2012 Rostock, Germany. Completed VIREPA course on Clinical Pharmacology & Pharmacotherapy Introductory Course 5th edition in , 2013 and awarded 48 Credit Points out of 52 points. Has done Epilepsy research fellowship (training program in Epileptology and Clinical Electroencephalography) from National Epilepsy Centre Shizuoka institute of Epilepsy and Neurological disorder-Japan in 2014.

Theme: Unravel the Recent Advancements and Novel Discoveries in Neurology and Neurosurgery

COVID-19 and Sustainable Development Goals (SDGs): An appraisal of the emanating effects in Nigeria

Fisayo Fagbemi
Research Fellow at the European Xtramile Centre of African Studies (EXCAS), Belgium

The paper appraised the emanating effect of COVID-19 on sustainable development goals (SDGs) in Nigeria through conceptual analysis and the systematic illustration of the prevailing incidents. It was affirmed that the preoccupation with the COVID-19 cases caused many other critical socioeconomic issues (like education, infrastructure development, and employment) to suffer a state of negligence or be overlooked. Like other developing countries, Nigeria could become poorer, given the increased unemployment rate and the anticipated difficulty in servicing debt resulting from the COVID-19 outbreak. Hence, festering challenges including poverty, limited access to health care, low education quality, poor road networks among others, could be further entrenched. These incidents could be detrimental to sustainable development goals (SDGs) 2030 agenda. The current crisis, therefore, poses a threat to Nigeria's development prospects, as it may take more time to recover, especially in the post-COVID-19 era. Thus, it is critical to recognize the significance of securing strong institutional regulatory setup and resources (including financial and material resources) needed to facilitate sustainable change in the economy.

Biography

Fisayo Fagbemi is a research fellow at the European Xtramile Centre of African Studies (EXCAS). His current role includes contribution in grant writing in the domains of economic development and social sciences, and capacity development in data analysis and public policy design. Before joining the EXCAS, He had engaged in a broad range of research, policy advisory consulting, and operations on public policy issues including fiscal, financial sector, governance, resource management and socioeconomic issues. Fagbemi is an author of many articles on financial development, poverty reduction, public sector, development and health economics. He earned a degree and MScs in economics from Obafemi Awolowo University, Ile-Ife, Nigeria.

Continuous epidural catheter for anaesthesia management and post-op pain relief in colorectal surgery, complicated by epidural haematoma and bilateral paraplegia: A case report

Narjes Mohammadzadeh and **Mohammad Ashouri**
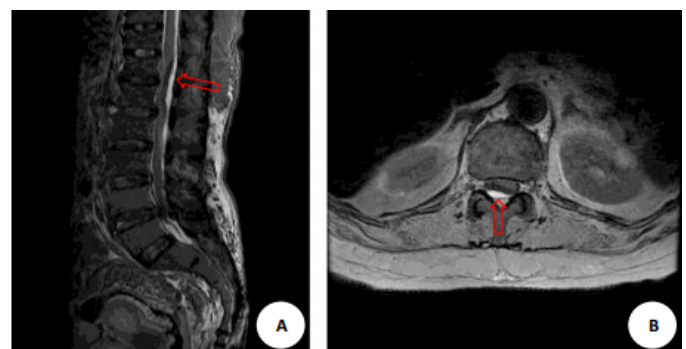*Tehran University of Medical Sciences, Iran*

Utilising epidural analgesia (EA) during major abdominal surgery in combination with general anaesthetic, is a proven approach to decrease anaesthetic requirement in patients with severe comorbidities, enhance recovery and improve pain management.

Case presentation: Herein we report a case of an 81-years-old female with bilateral lower limb sensory loss, saddle paraesthesia, paraplegia, and incontinence following a thoracic epidural catheterisation required for low anterior resection of rectal adenocarcinoma. The complication was reported by the patient on the third day of post-op.

Clinical discussion: The magnetic resonance imaging results revealed an extradural extramedullary hyperintense haematoma in the spinal cord at T12-L2 vertebral level. The neurological deficit was addressed urgently with laminectomy; and following implementation of intensive inpatient physiotherapy and rehabilitation regiment the patient restored mild motor function.

Conclusion: We believe the culprit of the acute focal neurology deficits in this patient could be due to the epidural catheterisation and the post-op local anaesthetic injections. From this case, we anecdotally recommend performing thoracolumbar MRI as part of pre-op workup in patients with long standing back issues or claudication, considering x-ray guided catheterisation in higher risk patients for epidural hematoma, and early and repeated neurological examination and rapid investigation for any mild neurological deficits.

Biography

Narjes finished the general surgery education at the age of 29 years and concurrently she was accepted as a faculty member of Tehran University ofMedical Sciences. This 3 years as a faculty member in a referral hospital (Imam Khomeini Hospital Complex) she did many advance surgeries in different fields. She has published 6 papers in eligible journals.

Human toxoplasmosis in Mozambique: Gaps in knowledge and research opportunities

Leonardo Manuel[1], Gabriela Santos-Gomes[2] and **Emília Virgínia Noormahomed[3,4,5]**

[1]Faculty of Health Sciences, UniversidadeLúrio, Mozambique
[2]Global Health and Tropical Medicine (GHTM), Instituto de Higiene e Medicina Tropical (IHMT), Universidade Nova de Lisboa (UNL), Portugal
[3]Department of Microbiology, Universidade Eduardo Mondlane (UEM), Mozambique
[4]Department of Medicine, Infectious Disease Division, University of California, USA
[5]Mozambique Institute for Health Education and Research (MIHER), Mozambique

Toxoplasmosis is a parasitic zoonotic disease caused by the Toxoplasma gondii zoonosis that afflicts humans worldwide and wild and domestic warm-blooded animals. In immunocompetent individuals, the acute phase of infection presents transient low or mild symptoms that remain unnoticed. Although the lifelong persistence of the dormant form of this parasite can lead to different toxoplasmosis clinical forms in immunocompetent individuals and immunocompromised patients and be related to neuropsychiatric disorders and neurodegenerative diseases. In immunocompromised patients, Toxoplasma is a life-threatening opportunistic infection, which can result from the reactivation of latent infection or primary infection. Moreover, congenital toxoplasmosis, which results from the transplacental passage of tachyzoites into the fetus during a pregnant primary infection can lead to miscarriage, stillbirth, or ocular and neurologic disease, and neurocognitive deficits in the newborns. Thus, the present review aims to address the current knowledge of Toxoplasma infection and toxoplasmosis in Africa and especially in Mozambique, stressing the importance of identifying risk factors and promote awareness among the population, assessing the gaps in knowledge and define research priorities. In Mozambique, and in general in Southern African countries, clinical disease and epidemiological data have not yet been entirely addressed in addition to the implications of T. gondii infection in immunocompetent individuals, in pregnant women, and its relation with neuropsychiatric disorders. The main gaps in knowledge in Mozambique include lack of awareness of the disease, lack of diagnostic methods in health facilities, lack of genetic data, and lack of control strategies

Theme: Unravel the Recent Advancements and Novel Discoveries in Neurology and Neurosurgery

Biography

Leonardo Manuel was born in 1985 in Mozambique,he is graduated in Biological Sciences and has a master degree in Tropical Medicine and International Health. In present days he is a Biosciences and Public Health PhD student at Eduardo Mondlane University.

Since 2010 he has been working as a junior faculty at Lúrio University, and his first published work has focused on ethnobotanical study of medicinal plants used by traditional healers to treatment malaria, but in the past, he also conducted a research on Medicinal plants used to treat tuberculosis.

Since 2017 and under supervision of Professor Emília Noormahomed, he has been working in the field of infectious diseases, with special emphasize to HIV and central nervous system parasites. At the moment he is a PI of an ongoing research related to Toxoplasma gondiiinfection and its relation with neuropsychiatric disorders in HIV infected patients.

Theme: Unravel the Recent Advancements and Novel Discoveries in Neurology and Neurosurgery

Recurrent tuberculosis cerebellar abscess: A case study and review of the literature

Yakhya Cisse, El HadjiCheikhNdiayeSy, Aissatou KEBE, Pape Sandene Ndiaye, Nantenin doumbia, Maguette MBAYE, Mbaye THIOUB, AliouneBadara THIAM and Seydou Boubakar Badiane

Neurosurgery Department, Fann University Hospital Center, Senegal

Tuberculous cerebellar abscess is a rare form of extra-pulmonary tuberculosis. The outcome is often favorable with well-managed treatment; however, they can continue to develop. A 10-year-old boy with a medical history of tuberculous meningitis after 3 months of tuberculosis treatment. He presented to the hospital with acute obstructive hydrocephalus due to a large tuberculous cerebellar abscess. A puncture of the abscess was initially performed, followed by placement of a ventriculoperiotoneal shunt, which resulted in some clinical improvement. However, the child subsequently presented with neurological deterioration due to the massive enlargement of the tuberculous abscess despite adequate antituberculosis chemotherapy. The initiation of corticosteroid therapy associated with a readjustment of the dose of anti-tuberculosis drugs and a repeated puncture ultimately led to clinical improvement. Tuberculous brain abscess is an extra-pulmonary location of tuberculosis rarely seen in immunocompetent children. The treatment consists of surgery associated with antituberculosis chemotherapy and rigorous clinico-radiological monitoring. Recurrence is possible despite well-conducted treatment. Additional corticosteroid therapy is necessary with readjustment of the anti-tuberculosis treatment for an effective cure.

Giant Encephalocele

Turyalai Hakimi

Kabul University of Medical Science, Afghanistan

Giant Encephalocele is a rare entity in which the central nervous system structures in any combination protrude through a defect in the skull and the size of the head is smaller than that of the deformity. A few cases are reported globally. It could be existed alone or in combination with other central nervous system (CNS) anomalies. We report a case of 4 months old child with giant encephalocele associated with hand deformity. She underwent excision of the sac and the patient is doing well after 3 months follow up.

Theme: Unravel the Recent Advancements and Novel Discoveries in Neurology and Neurosurgery

Systolic and diastolic function in chronic spinal cord injury

Bonnie Legg Ditterline[1], Shelley Wade[1], Beatrice Ugiliweneza[1], Narayana Sarma V. Singam[1], Susan J. Harkema[1], Marcus F. Stoddard[1] and **Glenn A. Hirsch[2]**

[1]University of Louisville, Louisville, USA
[2]National Jewish Health, USA

Individuals with spinal cord injury develop cardiovascular disease more than age-matched, non-injured cohorts. However, progression of systolic and diastolic dysfunction into cardiovascular disease after spinal cord injury is not well described. We sought to investigate the relationship between systolic and diastolic function in chronic spinal cord injury to describe how biological sex, level, severity, and duration of injury correlate with structural changes in the left ventricle. Individuals with chronic spinal cord injury participated in this study (n = 70). Registered diagnostic cardiac sonographers used cardiac ultrasound to measure dimensions, mass, and systolic and diastolic function of the left ventricle. We found no significant relationship to severity or duration of injury with left ventricle measurements, systolic function outcome, or diastolic function outcome. Moreover, nearly all outcomes measured were within the American Society of Echocardiography-defined healthy range. Similar to non-injured individuals, when indexed by body surface area (BSA) left ventricle mass, end diastolic volume, and end systolic volume were significantly decreased in women compared with men. Likewise, diastolic function outcomes significantly worsened with age: E-wave velocity, E/A ratio, and e' velocity decreased with age while A-wave velocity and isovolumic relaxation time increased with age. Women demonstrated significantly decreased cardiac size and volumes compared with men, but there was no biological relationship to dysfunction. Moreover, individuals were within the range of ASE-defined healthy values with no evidence of systolic or diastolic function and no meaningful relationship to level, severity, or duration of injury. Decreases to left ventricular dimensions and mass seen in spinal cord injury may result from adaptation rather than maladaptive myocardial remodeling, and increased incidence of cardiovascular disease may be related to modifiable risk factors.

Theme: Unravel the Recent Advancements and Novel Discoveries in Neurology and Neurosurgery

Biography

Dr. Bonnie Ditterline is a neuroscientist and director of Cardiovascular and Pulmonary research at the Kentucky Spinal Cord Injury Research Center at the University of Louisville. She investigates cardiac and vascular effects of epidural stimulation and task-specific interventions in humans with chronic spinal cord injury. The goal is to develop therapeutic interventions to restore cardiovascular function and improve quality of life of individuals with spinal cord injury.

Theme: Unravel the Recent Advancements and Novel Discoveries in Neurology and Neurosurgery

Impaired lipid homeostasis underlies axonal degeneration of human cortical projection neurons in hereditary spastic paraplegia

Xue-Jun Li

Department of Biomedical Sciences, University of Illinois College of Medicine Rockford, USA

Axonal degeneration of human cortical neurons underlies many debilitating diseases including amyotrophic lateral sclerosis and hereditary spastic paraplegias (HSPs). The pathophysiology of HSP is axonopathy of corticospinal neurons, but how common HSP mutations cause axonal defects in these cortical projection neurons (PNs) remains elusive. We generated isogenic human pluripotent stem cell (hPSC) lines for two ATL1 missense mutations associated with SPG3A, the most common early-onset autosomal dominant HSP. The ATL1 gene product atlastin-1 plays a crucial role in shaping the endoplasmic reticulum network that functions in metabolic processes including lipids. In hPSC-derived cortical projection neurons, ATL1 mutations resulted in reduced axonal outgrowth, impaired axonal transport, and accumulated axonal swellings, recapitulating disease-specific phenotypes. Notably, ATL1 mutations dysregulated proteolipid gene expression and unexpectedly disrupted cholesterol transfer from glia to neurons, leading to cholesterol deficiency in SPG3A cortical PNs. Restoring cholesterol levels by applying cholesterol or the NR1H2 agonists to promote cholesterol efflux from astrocytes, mitigated the impaired axonal transport and accumulated axonal swellings in these cortical PNs. The reduced size of lipid droplets, a direct pathological change caused by ATL1 mutations in glial cells specially, was also mitigated by the NR1H2 agonists. The role of astrocyte in the axonopathy of HSP is further supported by the rescue of axonal defects in SPG3A cortical PNs after co-culturing with control astrocytes, a major source of cholesterol in the brain. Taken together, our findings reveal a non-cell autonomous mechanism underlying axonal degeneration of SPG3A cortical PNs and identify a new therapeutic target for HSP through regulating cholesterol homeostasis in astrocytes.

Biography

Dr. Xue-Jun (June) Li received her PhD in Neurobiology from Shanghai Medical College of Fudan University in 2000. In 2002, she joined the Stem Cell Research Program at the University of Wisconsin- Madison. In 2007, she was appointed as an Assistant Professor in the Neuroscience Department at the University of Connecticut Health Center. In February 2016, Dr. Li joined the Department of Biomedical Sciences at the College of Medicine Rockford and the Department of Bioengineering at the University of Illinois-Chicago as an Associate Professor. She was appointed as Michael A. Werckle, MD, Endowed Professor since 2018. Dr. Li's research focuses on specifying neuronal subtypes from human pluripotent stem cells and using these stem cell-derived neurons to study motor neuron and axonal degeneration. By combining cellular, molecular, bioengineering and system approaches, research in her lab aims to understand the pathogenic mechanisms and to develop therapeutics for the treatment of these debilitating diseases.

Theme: Unravel the Recent Advancements and Novel Discoveries in Neurology and Neurosurgery

Gsx1 promotes locomotor functional recovery after spinal cord injury

L. Cai

Department of Biomedical Engineering, Rutgers University, USA

Promoting residential cells, particularly endogenous neural stem and progenitor cells (NSPCs), for tissue regeneration represents a potential strategy for the treatment of spinal cord injury (SCI). However, adult NSPCs differentiate mainly into glial cells and contribute to glial scar formation at the site of injury. Gsx1 is known to regulate the generation of excitatory and inhibitory interneurons during embryonic development of the spinal cord. In this study, we show that lentivirus-mediated expression of Gsx1 increases the number of NSPCs in a mouse model of lateral hemisection SCI during the acute stage. Subsequently, Gsx1 expression increases the generation of glutamatergic and cholinergic interneurons and decreases the generation of GABAergic interneurons in the chronic stage of SCI. Importantly, Gsx1 reduces reactive astrogliosis and glial scar formation, promotes serotonin (5-HT) neuronal activity, and improves the locomotor function of the injured mice. Moreover, RNA sequencing (RNA-seq) analysis reveals that Gsx1-induced transcriptome regulation correlates with NSPC signaling, NSPC activation, neuronal differentiation, and inhibition of astrogliosis and scar formation. Collectively, our study provides molecular insights for Gsx1-mediated functional recovery and identifies the potential of Gsx1 gene therapy for injuries in the spinal cord and possibly other parts of the central nervous system.
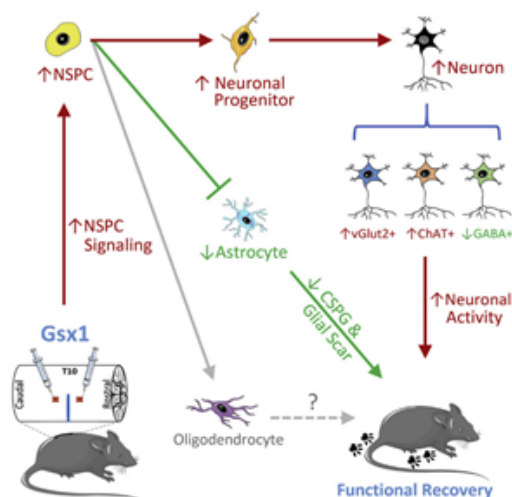
Biography

Li Cai is an Associate Professor of Biomedical Engineering at Rutgers University in New Jersey. Dr. Cai received his PhD in Physiology and Neurobiology from Rutgers in 1997 and carried out his postdoctoral research at Harvard Medical School/Howard Hughes Medical Institute (1997-2000) and Dana-Farber Cancer Institute (2000-2005).The Cai lab studies the molecular and cellular mechanisms of neural development and tissue regeneration after injury. In the developmental studies, classical cellular, molecular, imaging, genomic and bioinformatics techniques are used to determine gene function. In the studies of nervous system injury, animal models and tissue engineering were employed to develop gene therapy for tissue damage repair and regeneration. These studies may ultimately aid in a better regenerative medicine.

Theme: Unravel the Recent Advancements and Novel Discoveries in Neurology and Neurosurgery

Aberrant B cell response and ongoing disease activity in a multiple sclerosis patient receiving Cladribine

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Department of Neurology, Christian Doppler Medical Center, Paracelsus Medical University, Austria

Background: Recent data support a key role of B cells in the pathogenesis of multiple sclerosis. Due to the pronounced effect of cladribine on memory B cells, we initiated an immune phenotyping study, which included monitoring of memory B cells of patients newly assigned to this treatment option. A patient with ongoing disease activity in the first year of cladribine after a long-standing fingolimod treatment caught our attention.

Objective: To report about differences in the immune phenotype of the case compared to patients without disease activity and to discuss possible causes for the deviations as caveats regarding treatment sequelae.

Methods: Clinical data and immune phenotyping data collected at baseline (before treatment) and after three, six and ten/twelve months after cladribine initiation were compared between our case and six patients with a stable disease course (controls).

Results: Both, the case and controls showed similar reductions of memory B cells in response to cladribine. The case however, showed an accelerated repopulation dynamic of naïve B cells with an almost 3-fold hyperrepopulation compared to baseline levels, and lower pre-treatment levels of CD4+ and CD8+ T cells and memory B cells compared to controls.

Conclusion: We propose a prolonged pre-treatment with fingolimod as possible cause for the lack of response to cladribine. Autoreactive cells sequestrated within lymph nodes may have evaded cladribine depletion on top of a delay of recirculating regulatory T cells. In addition, we want to raise awareness of the importance of monitoring T and B cells for bridging the current lack of evidence regarding sequencing therapies in the real life setting.

Theme: Unravel the Recent Advancements and Novel Discoveries in Neurology and Neurosurgery
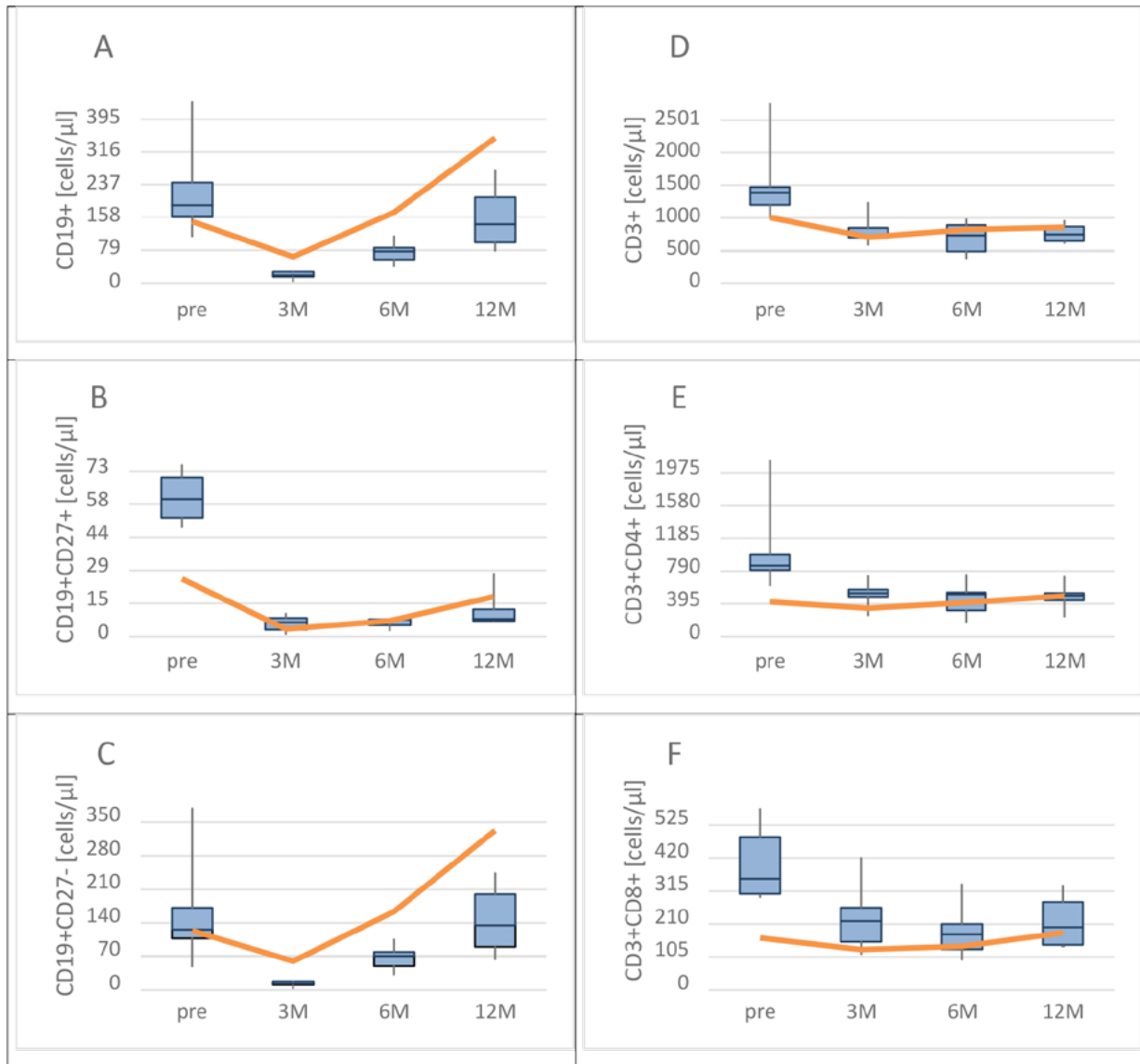
Immune-phenotyping results of our case (line graph) compared to controls (Box plots). Graphs show the course of absolute numbers of total B cells and memory and naïve B cells subsets (A-C) and of total T cells and CD4+ and CD8+ T cell subpopulations (D-F) from baseline and at three, six and ten respectively twelve months of CLAD treatment. Boxes represent IQR, bars represent ranges. Abbreviations: CLAD, cladribine; IQR, interquartile range; M, month; pre, baseline.

Biography

After getting my medical degree, I started my residency in neurology in October 2018 at the Department of Neurology at the Christian Doppler Medical Center in Salzburg, Austria.

Evolving treatments for pediatric epilepsy

M. Michael Bercu

Pediatric Neurosurgery, Spectrum Health, USA

Traditional surgical procedures, such as localization and resection of epileptogenic foci and disconnection techniques, are currently used to treat drug-resistant focal epilepsy (DRFE) in children. Pediatric epilepsy surgery rates have increased from 0.85 surgeries per 1000 children with epilepsy in 1997 to 1.44 surgeries per 1000 children with epilepsy in 2009. In a prospective study of DRFE, 86% of children and 43% of adults were off antiepileptic drugs (AEDs) 10 years after surgery as compared with 0/93 nonsurgical controls. Reducing the life-long morbidity of childhood epilepsy can improve the quality of life of the children and their families and reduce healthcare costs. Many patients are not candidates for resection procedures when the seizure onset or network involves multiple cortical regions or eloquent cortex. Responsive neurostimulation (RNS System) therapy has been safely and successfully used in the adult population for the treatment of DRFE with one or two seizure foci.

Available data suggest similar outcomes in the treatment of pediatric patients with DRFE as well as multi-focal epilepsy using responsive neurostimulation. The recently published data on RNS use in the pediatric population demonstrate safety, decreased clinical seizure frequency, as well as improved functional status and quality of life. The increase in efficacy over time observed with responsive stimulation is similar, if not superior to, other neurostimulation approaches, including VNS and open-loop DBS of the anterior nucleus of thalamus (ANT). Even more significantly, additional novel targets for open loop or closed loop stimulation are under investigation, such as the ANT and the centromedian nucleus of thalamus, with very promising results

The exact mechanism of action of neurostimulation is unknown, with immediate effects that may be mediated by local cellular inhibition and/or excitation, or to the release of neurotransmitters from axons and bordering astrocytes. The sustained therapeutic effects could be explained by alterations in neuronal networks, involving synaptic plasticity, neurogenesis, and cortical reorganization, with possible enhanced effects in a young, developing brain. This area of research is expected to gain popularity over the next years, especially in parallel to the development of the novel recording deep brain stimulation systems and advancements in imaging modalities.

Theme: Unravel the Recent Advancements and Novel Discoveries in Neurology and Neurosurgery

Biography

M. Michael Bercu, MD, MSc is a pediatric and functional neurosurgeon with expertise in complex and advanced neurosurgical procedures, with an emphasis on novel minimally invasive techniques, including directional brain neuromodulation, laser ablations and responsive neurostimulation for intractable epilepsy disorders. Additional areas of interest include minimally invasive approaches for brain tumors and malformations (MIPS), as well as the development and implementation of new technologies such as focused ultrasound. His experience in the field of stem cells research grants him additional tools to contribute to the development of novel treatments for patients suffering from traumatic CNS injuries and neurodegenerative disorders.

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Theme: Unravel the Recent Advancements and Novel Discoveries in Neurology and Neurosurgery

Childhood generalized specific phobia as an early marker of internalizing psychopathology across the lifespan: Results from the World Mental Health Surveys

Ali Al-Hamzawi[2] and **Ymkje Anna de Vries[1]**

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[3]*College of Medicine, Al-Qadisiya University, Diwaniya Governorate, Iraq*

Background: Specific phobia (SP) is a relatively common disorder associated with high levels of psychiatric comorbidity. Because of its early onset, SP may be a useful early marker of internalizing psychopathology, especially if generalized to multiple situations. This study aimed to evaluate the association of childhood generalized SP with comorbid internalizing disorders.

Methods: We conducted retrospective analyses of the cross-sectional population-based World Mental Health Surveys using the Composite International Diagnostic Interview. Outcomes were lifetime prevalence, age of onset, and persistence of internalizing disorders; past-month disability; lifetime suicidality; and 12-month serious mental illness. Logistic and linear regressions were used to assess the association of these outcomes with the number of subtypes of childhood-onset (< 13 years) SP.

Results: Among 123,628 respondents from 25 countries, retrospectively reported prevalence of childhood SP was 5.9%, 56% of whom reported one, 25% two, 10% three, and 8% four or more subtypes. Lifetime prevalence of internalizing disorders increased from 18.2% among those without childhood SP to 46.3% among those with one and 75.6% those with 4+ subtypes. Twelve-month persistence of lifetime internalizing comorbidity at interview increased from 47.9% among those without childhood SP to 59.0% and 79.1% among those with 1 and 4+ subtypes. Respondents with 4+ subtypes also reported significantly more disability (3.5 days out of role in the past month) than those without childhood SP (1.1 days) or with only 1 subtype (1.8 days) and a much higher rate of lifetime suicide attempts (16.8%) than those without childhood SP (2.0%) or with only 1 subtype (6.5%)

Conclusions: This study shows that childhood-onset generalized SP is related to adverse outcomes in the internalizing domain throughout the life course. Comorbidity, persistence, and severity of internalizing disorders all increased with the number of childhood SP subtypes.

Theme: Unravel the Recent Advancements and Novel Discoveries in Neurology and Neurosurgery

Biography

Ali Al-Hamzawi is a Professor of psychiatry in the College of Medicine at University of Al-Qadisiyah. He is a member of the National Council for Iraqi Mental Health, which is involved in the development and implementation of health policy at the national level. He is a member of the Scientific Council of Psychiatry at the Arab Board for Health Specialization. He serves as the director of Diwania Postgraduate Training Centre of Psychiatry/Arab Board for Health Specialization. He is the Principal Investigator of Iraq for World Mental Health Survey-WHO. He is a member of the scientific ethical committee at National Council of Mental Health. He has published 77 scientific articles. He is the author of a book on evaluation of some immunological markers in schizophrenic patients and is a contributor of three books on community mental health, the burdens of mental disorders and mental disorders around the world.

The effects of melatonin on endoplasmic reticulum, mitochondrial function, and their cross-talk in the stroke

Leila Hosseini[1], Nasrin Abolhasanpour[2], Sareh Kazmi[1] and **Javad Mahmoudi[1]**

[1]Neurosciences Research Center (NSRC), Tabriz University of Medical Sciences, Iran
[2]Research Center for Evidence-Based Medicine, Tabriz University of Medical Sciences, Iran

Ischemic stroke has remained a principal cause of mortality and neurological disabilitiesworldwide. Blood flow resumption, reperfusion, in the cerebral ischemia prompts acascade in the brain characterized by various cellular mechanisms like mitochondrialdysfunction, oxidative stresses, endoplasmic reticulum (ER) stress and excitotoxicity, finally resulting in programmed cell death. Any changes in the ER-mitochondria axisare probably responsible for both the onset and progression of central nervous systemdiseases. Melatonin, a neuro-hormone secreted by the pineal gland, has anti-oxidative,anti-inflammatory, and anti-apoptotic properties. Most studies have shown that it exertsneuroprotective effects against ischemic stroke.It has been demonstrated that ER- mitochondrial interactions play critical roles in various physiological and pathophysiological processes.In the ischemic brain, ER-mitochondria crosstalk is involved in multiple cellular functions such as mitochondrial Ca^{2+} homeostasis, the start of autophagosome formation, cellular apoptosis, lipid transportation and also mitochondrial fission site determination. Based on the findings of previous studies, melatonin has an improving effect on each organelle function. Melatonin therapy showed that not only reduced mitochondrial dysfunction but also alleviated ER stress and inflammation. Hence, it seems that melatonin may exert a protective role on the crosstalk between the mitochondria and ER stress mechanisms following stroke. Given that stroke leads to mitochondrial and ER dysfunction, and regarding this fact that dysfunction of each organelle aggravates their effects, using appropriate drug intervention that improves the function of ER and mitochondria lonely or in crosstalk connection can be a useful treatment for stroke. Schematic figure shows the ischemic stroke-induced endoplasmic reticulum-mitochondrial Crosstalk and role of melatonin in this cascade (Figure 1).
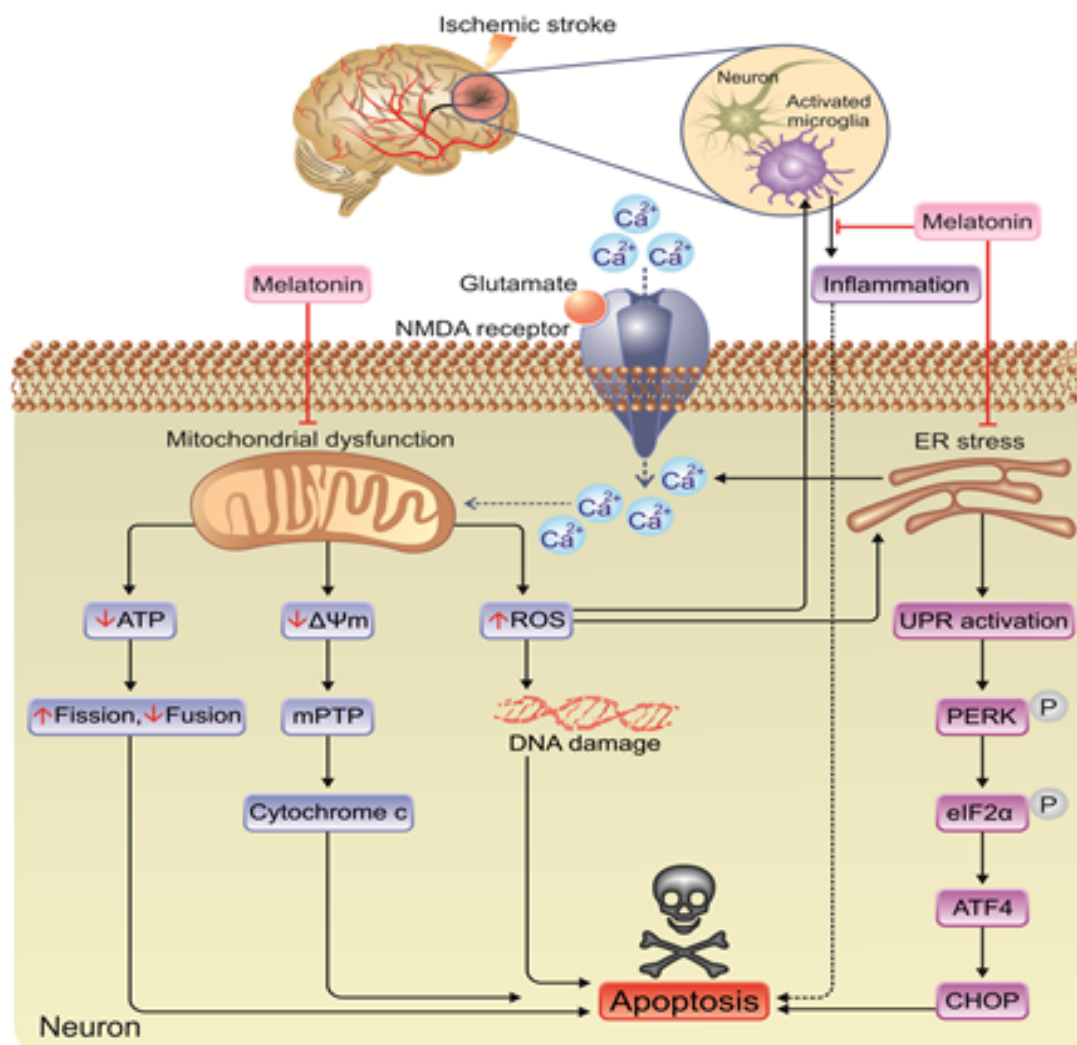
Theme: Unravel the Recent Advancements and Novel Discoveries in Neurology and Neurosurgery

Figure 1. Schematic of the ischemic stroke-induced ER-mitochondrial Crosstalk and role of melatonin.

Biography

I'm Leila Hosseini. I was born in Khoy in 1985.I have ph.ddgree in physiology from Tabriz University of medical sciences. My supervisors were drbadalzadeh and vafaee. My thesis was about the mayocardial ischemia-reperfusion injury in aged rat which resulted in three articles. My thesis was internatiolal project in collaboration with universities odense and Tabriz. In addition, I am also interested in neuroscience. I have worked on projects including Brain Aging and Alzheimer. I am currently a postdoctoral researcher in the field of stroke. I'm familiar with Ischemia-reperfusion injury of the heart and brain , Behavioral tests Different molecular techniques of DNA and RNA extraction, cDNA synthesis; Developing RFLP-PCR, PCR, SDS-PAGE and Real-time PCR, H&E staining, Periodic acid-Schiff reaction (PAS), Nissl, Golgi-Cox ., Isolation of Mitochondria , Cerebral spinal fluid (CSF) extraction from rat methods.

Theme: Unravel the Recent Advancements and Novel Discoveries in Neurology and Neurosurgery

PEERS ALLEY MEDIA

The effect of lavender and *Citrus aurantium* on pain of conscious patients in intensive care units: A parallel randomized placebo-controlled trial

M Dehghan[5], Z Karimzadeh[1], M Azizzadeh Forouzi[2], H Tajadini[3] and **M Ahmadinejad[4]**

[1]Department of Critical Care Nursing, Kerman University of Medical Sciences, Iran
[2]Neuroscience Research Center, Kerman University of Medical Sciences, Iran
[3]Department of Traditional Medicine, Kerman University of Medical Sciences, Iran
[4]Department of Critical Care Medicine, Kerman University of Medical Sciences, Iran
[5]Nursing Research Center, Kerman University of Medical Sciences, Iran

Background: Conscious patients admitted to intensive care units suffer from pain for various reasons, which can affect their recovery process.

Objective: The present study aimed to compare the effect of aromatherapy with Citrus aurantium and lavender essential oils with placebo on the pain of conscious intensive care patients.

Design, setting, participants and interventions: This study was a parallel randomized placebo-controlled trial. The intensive care units of two educational hospitals in Kerman in Southeastern Iran were the study setting. One hundred and fifty conscious intensive care patients were randomly allocated into three groups by stratified block randomization method. Groups of aromatherapy with lavender and aromatherapy with *C. aurantium*, received a 30-minute inhalation of lavender/*C. aurantium* essential oils on the second day of admission. The placebo group received 5 drops of normal saline for 30 min.

Main outcome measures: Patient's pain was assessed using visual analog scale before, immediately, 1 and 3 h after the intervention.

Results: The mean pain of the lavender group was 40.01, 39.40, 30.60 and 23.68 before the intervention, immediately after the intervention, 1 and 3 h after the intervention, respectively. The mean pain of the C. aurantium group decreased from 45.48 before the intervention to 32.34 3 h after the intervention. The mean pain of the placebo group decreased from 42.80 before the intervention to 35.20 3 h after the intervention. Pain scores of all groups decreased during the study (P< 0.001). The mean pain of the lavender group was significantly lower than that of the placebo group 3 h after the intervention.

Conclusion: The results of the present study showed that aromatherapy with lavender essential oil had a positive effect on reducing pain in conscious intensive care patients. The results of this study could not justify the effect of C. aurantium on reducing pain.

Biography

She is assistant professor in nursing school in Kerman University of Medical Sciences. Her research interests are spiritual issues, complementary and alternative medicine, scale development and critical care. She is relatively good at research with an H-index of 9.

Theme: Unravel the Recent Advancements and Novel Discoveries in Neurology and Neurosurgery

A comparison of the effects of rituximab versus other immunotherapies for MOG-IgG-associated central nervous system demyelination: A meta-analysis

Peng Bai[1] and **Meini Zhang[2]**

[1]Department of Neurology, Inner Mongolia People's Hospital, People's Republic of China
[2]Department of Neurology, First Hospital of Shanxi Medical University, People's Republic of China

Background: Myelin oligodendrocyte glycoprotein (MOG) antibody disease (MOG-AD) is now recognised as a nosological entity with specific clinical and paraclinical features to aid early diagnosis. Rituximab (RTX) is a chimeric monoclonal antibody directed against CD20 epitope expressed on pre-B and mature B cells and is used to treat B-cell-derived lymphoid neoplasms and antibody-mediated autoimmune diseases. In this review, we performed a meta-analysis to evaluate RTX efficacy and assessed the treatment efficacies based on relapse rates.

Methods: This study was conducted according to the PRISMA (Preferred Reporting Items for Systemic review and Meta-Analysis) statement. We searched for publications on the PubMed, Embase, Cochrane Library, clinical trials up to December 2020. We compiled 5 studies, Meta-analysis forest plots was conducted for the ARR ratio change pre and post-treatment between rituximab and other disease modifying drugs. A sensitivity analysis was performed with mean difference (MD) of the efficacy of RTX versus other immunotherapies and subgroup analysis was also performed based on site of study.

Results: A meta-analysis of 5 studies with 239 participants was conducted. Patients have received rituximab were recorded in 82 of 239 (34.31%). The mean difference of ARR ratio of rituximab therapy versus other immunotherapies was 0.16 (95%CI, −0.15 to 0.47). No studies found to significantly affect heterogeneity. No major differences occurred in 9.2% of China patients (95% CI: -0.20—1.86; I2=0%) and 90.8% of non- China patients (95% CI: -0.24–0.42; I2=0%). Meanwhile there was no significant subgroup difference (p = 0.18) between them.

Conclusion: RTX reduces the relapse frequency in most patients with MOG antibody disease, but there is no differences between rituximab and other immunotherapies in MOG antibody disease. Future a large multicenter randomized controlled clinical trial to thoroughly characterize the efficacy of rituximab for MOG antibody disease is necessary.

Biography

Peng Bai,attendingdoctor,Department of Neurology, Inner Mongolia People's Hospital Graduated from Shanxi Medical Universityin 2016.

Theme: Unravel the Recent Advancements and Novel Discoveries in Neurology and Neurosurgery

Neuroinflammation in Alzheimer's disease

R. M. Damian Holsinger[1,2]

[1]Laboratory of Molecular Neuroscience and Dementia, The Brain and Mind Centre, Faculty of Medicine and Health, The University of Sydney, Australia
[2]Neuroscience, School of Medical Sciences, The University of Sydney, Australia

Alzheimer's disease (AD) is a progressive neurodegenerative disease of the brain that is characterized by memory impairment and cognitive dysfunction. Pathological hallmarks of AD include the deposition of amyloid beta (Aβ) plaques and neurofibrillary tangles. The accumulation of these proteinaceous deposits induces synaptic dysfunction, oxidative damage and neuroinflammation, resulting in neurodegeneration. Neuroinflammation, triggered by the glial cell response to Aβ, exacerbates the toxic milieu in the AD brain and contributes to further Aβ genesis. Evidence now suggests that, in the later stages of the disease, activated astrocytes contribute to amyloid load in the brain. This is in stark contrast to their role in the early stages of the disease where they are involved in the degradation and removal of amyloid plaques. Additionally, microglia, the brain-resident phagocytes that are tasked with clearing pathogens and cellular debris, also become activated in the presence of soluble Aβ and contribute to its clearance in the early stages of the disease. Research has demonstrated that microglia express the amyloid precursor protein (APP) and the gamma- secretase complex of proteins required for the final step in Aβ production. Employing the 5xFAD mouse model of Alzheimer's, we provide evidence that microglia also express BACE1, the pivotal β-secretase that initiates the amyloid cascade. We also show that microglia contribute to amyloid plaque burden in the 5xFAD mouse brain. In addition, we discuss evidence that suggests pathways that fuel astrocytic activity in the 5xFAD mouse brain. Our results highlight the toxic environment in the Alzheimer brain that provide the neuroinflammatory landscape during disease progression.

Biography

Dr Holsinger is a Senior Lecturer in Neuroscience and Director of the Laboratory of Molecular Neuroscience and Dementia at The Brain and Mind Centre at The University of Sydney, Australia. Dr Holsinger's research interests are aimed at understanding molecular mechanisms underlying neurodegenerative diseases with a particular focus on Alzheimer's disease and the □-secretase cleaving enzyme (BACE1). This enzyme initiates the generation of amyloid-beta (A□), accumulation of which leads to its deposition as amyloid plaques, a pathological feature of Alzheimer's. Following seminal discoveries of increased BACE1 in the brain and cerebrospinal fluid of Alzheimer's subjects, the laboratory focuses on identifying mechanisms that lead to increased levels of BACE1 and those that regulate its transcription. His research also focuses on neurotrophic factors, in particular, brain-derived neurotrophic factor (BDNF) and its expression in the diseased brain with an aim to regulating levels of these factors for therapeutic benefit..

Theme: Unravel the Recent Advancements and Novel Discoveries in Neurology and Neurosurgery

Audiovestibular functioning of post-menopausal females with osteoporosis and osteopenia

Manisha K.Juneja[1], Sanjay Munjal[2], Anuradha Sharma[3], Ashok K.Gupta[3] and **Sanjay Bhadada[4]**

[1]Speech and Hearing Unit, ENT Department, India
[2]Speech & Hearing Unit, Dept. of Otolaryngology, PGIMER, India
[3]Dept. of Otolaryngology, PGIMER, India
[4]Dept. of Endocrinology, PGIMER, India

Hearing of osteoporosis group was more affected at all frequencies in comparison to the osteopenia group and the control group. Higher thresholds were observed in both the osteoporosis and osteopenia group than in the control group.

Speech recognition and discrimination scores were poor in osteoporosis subjects as compared to control.

Osteoporosis group had lowered SNR for TEOAE at all frequencies in comparison to osteopenia and control group.

The significant difference between osteoporosis and control group was observed at high frequencies in distortion product otoacoustic emission.

95.65% subjects had affected vestibular function in comparison to normal BMD group, i.e., osteoporosis group had reduced amplitude.

In the osteopenia group, 76% of the subjects had affected vestibular functions as compared to the control group.

Longer latencies and smaller amplitude of cVEMP, as well as oVEMP, were observed in osteoporosis and osteopenia group than the control group.

FUTURE DIRECTIONS: An association between BMD levels and demographic data which includes economic status, dietary schedule, etc. should be carried out on a large sample.

Impact of the effect of the period after menopause and comprehensive audiovestibular testing should be included in individuals with osteoporosis and osteopenia.

Pre-treatment audio-vestibular testing should be done to monitor the effect of medicines.

Long-term follow-up to monitor the audiological status of Osteoporosis and Osteopenia individuals should be done on a regular basis.

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- We extend continuous education credits to boost the career and academic progress.
- We encourage start-ups in science, technology and business for the social and economic empowerment of the enthusiastic entrepreneurs.

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