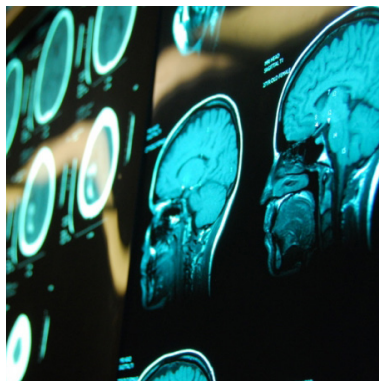


Workshop
June 11, 2018

Neuroscience 2018



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Si Ching LIM

National University of Singapore-Duke, Singapore

Dementia falls and interventions on fall prevention

Speaker Biography

Si Ching LIM is a senior Consultant Geriatrician at Changi General Hospital (CGH), Singapore. She graduated from the Bristol University and completed her postgraduate training in General Medicine in London. She was a Nephrologist before specializing in Geriatric Medicine. She set up a department of Geriatric Medicine in Singapore General Hospital and now heads the Dementia ward at CGH. Her interests include dementia with BPSD, reducing the usage of restraints among the agitated elderly, nutrition and medical education. She is on the teaching faculties with the NUS and Dukes-NUS. She is also a visiting consultant in Ang Mo Kio Community Hospital in Singapore. Currently, she collaborates with the Department of General Surgery on management of elderly post-operative care, created a recipe book for elderly who eat poorly using oral nutritional supplements.

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Falls are common among the elderly with dementia. It is useful to explore factors which predispose to falls among the elderly with dementia, in addition to the physiological factors associated with ageing. The elderly with dementia are more at risk for falls compared to their peers in view of poor safety awareness, cognitive deficits, gait abnormalities, medication use for BPSD, urinary incontinence, delirium etc.

Falls among the hospital inpatients is another major issue faced by hospitals worldwide. Falls which frequently lead to immense feelings of guilt and blame among the hospital staff, with threats of litigation once a fall occurs in the hospital. Falls among the inpatients are frequently used as an indicator for measures of patient safety. Is it possible to prevent falls in the hospital? We present the possible causes of falls in a teaching hospital in Singapore and review on possible interventions to reduce in-patient falls. Also in the presentation is data from the dementia ward in the same hospital. The dementia ward is a niche service to provide care for the agitated and restless elderly who would otherwise be restrained in the general ward. The emphasis of dementia ward is non-pharmacological management of behavioural symptoms in the setting of dementia and delirium. Falls are frequently reported to be much higher in a psycho geriatric facility. Can we provide safe patient care without physical or chemical restraints?

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Limin Yong

NTUC Health, Singapore

Physiotherapy interventions on fall prevention

Falls among the older adults in community and long term care settings is also a major issue faced by community worldwide. Can Physiotherapy interventions further reduce falls risk among older adults? Evidence-based Physiotherapy interventions has shown results in further reduce falls risk for older adults to meet the future demographic challenges due to rapidly ageing population. There is an increasing trend of evidence-based physiotherapy interventions being developed for community falls prevention programs in Singapore. Examples of community setting in Singapore where evidence-based Physiotherapy interventions have been successfully implemented will be highlighted and the accumulated new learnings over the past 2 years will be shared for the common challenge of how to provide timely appropriate Physiotherapy interventions for falls prevention in community and long term care settings.

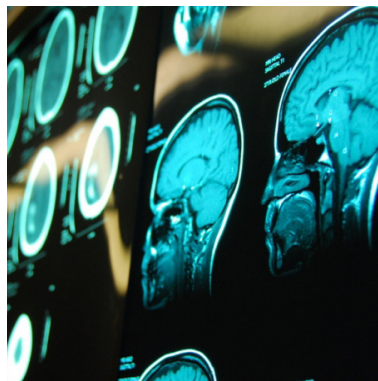
Speaker Biography

Limin Yong is a senior Principal Physiotherapist at NTUC Health, Singapore and adjunct lecturer for undergraduate Physiotherapy program at Singapore Institute of Technology. She graduated from the National Taiwan University. In 2009, she was awarded the Health Manpower Development Plan fellowship by Ministry of Health, Singapore, to undergo specialised training in geriatric rehabilitation and falls prevention in Australia. She is currently developing evidence-based care models and enhancing long term care manpower capability for community settings in Singapore. She is skilled in clinical geriatric physiotherapy. Her research interest is in falls and injury prevention, dementia care and palliative care for older adults.

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Kounti F

BRINA Ltd, UK

Cognitive Neurorehabilitation during aging and Alzheimer's disease: Is it effective?

The growing evidence that our environment, behaviours, and emotions may either increase the rate of neuronal death, or facilitate neurogenesis, opens up new horizons for neurorehabilitation. The brain stimulation can cause an increase in cortical thickness, neuronal branching and number of synapses. We already know that the adult brain can show large experience-dependent change in neural circuits. Since neuronal plasticity is preserved to some extent in older people and Alzheimer's patients, we try to reactivate atrophic neurons or regenerate synapses through Cognitive Neurorehabilitation. Every day throughout much of the world, thousands of therapists try to shape recovery in the damaged brains. They offer structured experience through cognitive training or cognitive stimulation. However, we must know how exactly neurorehabilitation works in order to design effective therapeutic programmes along scientific principles. Experience-dependent plastic reorganization depends heavily on the level

of attention skills. Therefore, the enhancement of attention is the primary goal. It might have a further significance, however, as an intervening step in enhancing other types of cognitive, motor and perceptual function, given that attention is a key element of new learning. In the third millennium, cross-disciplinary neuroscientific research is likely to be the key to advancing our understanding of brain plasticity.

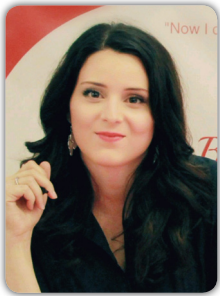
Speaker Biography

Kounti F has completed her PhD in Cognitive psychology in the Aristotle University of Thessaloniki, Greece. She is a Cognitive neuropsychologist and the dementia lead of BRINA, -Brains In Action UK. She has co-authored 9 books in relation to older people, dementia diagnosis, cognitive training and care giving topics. Also, she has designed and tested more than 20 different cognitive training programs for older people aiming in dementia prevention and delay. She has delivered 27 publications in prestigious scientific journals worldwide. She had been the dementia lead of 4-day Clinics operating under the Greek Ministry of Health and the Greek Alzheimer's Disease Association. Since 1995 she co-founded, and has been serving as a board member of, the Alzheimer's Disease Association and later the Federation of Alzheimer's disease in Greece.

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Zafeiropoulou M

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Brain Gyms for older people: A new model of cognitive training therapy to be run by care providers for their clients and the local community

Evidence has shown that active participation in the cognitive training programmes can help people to maintain their cognitive and functional skills. Our new, award winning, therapeutic model was originally developed in mainland Europe and is now available in the UK to forward thinking care providers and other organizations, via an ongoing series of regular training programmes or 'Brain Gyms'. The aims are: 1) To help prevent or delay the initial onset of dementia, and 2) To help arrest its escalation among people in early to middle stages of dementia. The therapeutic programmes are designed to enhance cognitive functions and help people improve their ability to carry out daily activities. All the programmes follow the same structure, but use different cognitive cues, which are focused on enhancing primarily the skills of attention and executive function. This new model includes providing healthcare professionals with specialist training so that they are able to deliver the sessions to participants. The brain workout session packs are individually designed for each participant by

a team of neuroscientists and delivered to the care provider weekly. Cognitive performance assessments are made for each participant, so that the measured evaluations can be carried out regularly. Support and supervision is also provided during the assessments, as well as guidance in setting up and running the sessions. A demonstration video of training programmes in progress will be shown during the presentation.

Speaker Biography

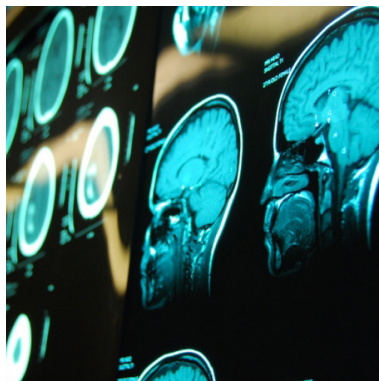
Zafeiropoulou M has completed her Bsc in psychology at the Empire State University of New York, USA. She is a Cognitive therapist and the CEO of BRINA,-Brains In Action UK. She has been trained in neuropsychological assessment and worked as an assessor for 12 years. In addition, she has been involved in two clinical trial studies both associated with dementia for pharmaceutical companies through Kings College University. She has served as the coordinator of the 'Care Home Research Network' at the Institute of Psychiatry, Psychology & Neuroscience, Wolfson Centre for Age-Related Diseases, Kings College University. Also, she has participated in various standardization projects of neuropsychological scales in regard to the diagnosis of dementia and mild cognitive impairment. She has delivered 3 publications in prestigious scientific journals worldwide.

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Dementia is a disease of the ependymal layer: Novel theory from looking at cognitive impairment in Multiple Sclerosis

Philip A McMillan


Doncaster and Bassetlaw NHS Trust, UK

The intricacies of dementia are explored in relation to varied studies on brain atrophy in multiple sclerosis and used to delineate the primary pathology of the latter. The theory examines the high frequency of cognitive impairment (Jongen 2012) in Multiple Sclerosis and its early manifestation during the disease. The fact that there is associated brain atrophy cannot be explained by the degree of damage to neurons. (Carlos 2015) noted a 5 to 10 times greater rate of atrophy in Multiple Sclerosis. The cognitive changes with Multiple Sclerosis are then correlated embryologically to the subependymal zone (Kazanis 2009) explaining the pathology of brain atrophy and why we have not made more progress through research. Our understanding of the blood CSF barrier and the brain CSF interaction is poorly understood and probably holds the key to the symptoms of dementia (Erikson 2013). This interaction between the CSF and brain interstitial space is coordinated by the ependymal and subependymal zone of the brain. This is a novel concept that will aim to explain the links of all forms of dementia, as well as directing fertile areas for research.

Speaker Biography

Philip A McMillan is a Consultant in the NHS with over 23 years of medical expertise. His primary focus has been around Geriatrics and Neurological Rehabilitation and has developed unique perspectives on the capacity of the brain to recover from injuries and disease. Through international collaboration he has proposed a nutritional protocol for dementia reversal and has recently had a breakthrough theory on the pathology of dementia. His current aim is to lead the field of dementia to a new direction of research and treatment of this devastating disease.

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The 5 Ds of Lewy Body Dementia, global physician and nursing knowledge or lack of, treatment methods and new scientific discoveries in the last decade

Esperanza Hansen Gonzalez
Magnolia Park Assisted Living, USA


It is possible for any patient suffering from Lewy Body Dementia to be misdiagnosed and poorly treated or managed at any given time in any medical setting. We could visit any emergency room in America or the rest of the world and see it happening. Most physicians that began their practice 10 to 20 years ago may have never heard LBD before. One could say it is the new Leprosy of biblical times. This would be due to no one accepting a combative patient in their assisted living setting. Some doctors believe they have to wait till the patient dies to obtain a biopsy of the brain in order to diagnose the LBD. They have never heard of the McKeith Criteria or the last revised Lewy Body Dementia Fourth consensus report of the LBD Consortium of 2013. It is over the last decade that research has shed light on the disease process. Today, we have new testing that aids in the differentiation of even the type of Lewy Body Dementia. Is it just Lewy Body or does it have a Parkinson component or a variant of it. As I nurse I see many dementias and subtypes of them. I have cared for my patients twenty four hours a day seven days a week for the last eighteen years and a half. I have come to understand the disease process with all its variants close and personal. My biggest obstacle in giving quality of life to my patients is the doctor or nurse. The generation I have served are from the generation who do and believe everything the doctor tells them with no questions asked. It is important to get all your ducks in a row. For this reason I accompany my patients to the doctors appointments or ER visits. The first D then is the doctor. Once the right doctor is in place all the other

Ds fall in place. The right doctor will order the right diagnostics. The right diagnostics will lead to the right diagnosis. The right diagnosis will allow for the right drug. The right drug will lead to better management of the disease. With all of the Ds in order the doctor, pt and family can decide on the right course of treatment. Lewy Body dementia and Parkinson's with Lewy Bodies can have overlapping clinical presentations and some controversy still exists during diagnosis or differentiation. Given the difficulties in cognition, extra pyramidal function, and psychiatric health, management can be complex and should be systematic. By using the Five Ds of Dementia I have been able to assist many families in their caring journeys.

Speaker Biography

Esperanza Hansen Gonzalez passion and compassion for geriatrics was awakened when her mother abandoned her at the age of 8 years in the village where she grew up among elderly women. The women there self-treated their ailments. Esperanza quickly learned the skill of injecting others. She would later trade it for shelter. Then she immigrated to California's central valley at 16 years of age where she learned English and pursued a nursing career. She is a graduate of the College of Sequoias, where she earned an A.S. in nursing. She went on to practice in the various local hospitals and home health agencies until 1999 when she earned an A.S. in nursing from New York Regents University. The same year she became a Registered Nurse in the state of California and was recruited to care for the terminally ill as a Nurse Case Manager and Hospice Educator. She cared for terminally ill patients who were primarily elderly. There she discovered most geriatric patients had a form of dementia beyond the primary terminal diagnosis, but which was not identified in the clinical picture. It was there that she developed the 5 D's of Dementia.

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 Notes:

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Shingles, an unusual cause of stroke

Kerry Badger, Ruth A Mizoguchi and Vongai Mugadza
Chelsea & Westminster NHS Foundation Trust, UK

VZV (Varicella Zoster Virus) infection in humans is a well-documented entity that is linked to numerous neurological complications, including intracerebral vasculitis. This can lead to ischaemic or haemorrhagic stroke and is a major cause of morbidity and mortality. This complication is more common in immunocompromised or elderly individuals. We present a case of haemorrhagic stroke presenting in an individual with recent onset VZV reactivation.

An 83-year-old woman, who was previously living independently, presented to hospital with an acute onset of delirium and expressive dysphasia. This presentation was on the background of a 3 weeks history of an evolving vesicular rash in the dermatomal distribution of the ophthalmic branch of trigeminal nerve, characteristic of herpes zoster ophthalmicus. The patient was started on oral acyclovir 3 days prior to admission and initial diagnosis of delirium secondary to herpes zoster infection was made.

On admission, she scored 4 /10 on the abbreviated mental test score (AMTS), had a positive Hutchinson's sign and an unremarkable neurological examination. Laboratory testing showed raised inflammatory markers. Subsequent CT and MR

brain imaging revealed a right temporal lobe haemorrhage with interventricular extension. Further imaging of the CT angiogram showed widespread vessel narrowing, consistent with vasculitis or a differential diagnosis of widespread atheromatous disease.


Cerebral spinal fluid (CSF) polymerase chain reaction (PCR) was positive for VZV and further vasculitic screening including ANA and ANCA was negative. A diagnosis of haemorrhagic stroke secondary to varicella zoster vasculitis was made and the patient was treated with high dose intravenous methylprednisolone and acyclovir.

It is important to consider viral induced cerebral vasculitis in susceptible patient groups as a cause of stroke. Correctly identifying patients presenting with this complication allows treatment with steroids and anti-viral agents that have been found to increase chances of a better prognosis.

Speaker Biography

Kerry Badger is a Foundation Doctor currently working at Chelsea and Westminster Hospital NHS Foundation Trust. She achieved a Bachelor of Medical Sciences in 2015 and a Bachelor of Medicine and Surgery in 2017, both from the University of Nottingham. She has a developing interest in neurology and has recently completed a rotation on a combined stroke, neurology and geriatric ward.

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Cancer stem cell resistance against temozolomide in glioblastoma multiforma treatment

Meryem Alagoz

Biruni University, Turkey


Glioblastoma multiforme (GBM) is the most common and aggressive form of malignant brain tumour. GBM patient lifespan is extend upto 24 months. Treatment of this disease become the greatest challenge due to complexity of tumour and numerous mechanisms involving drug resistance. Magnetic resonance imaging (MRI) demonstrates that remaining few cancer cells were not affected by the aggressive treatment which implicates heterogeneity of cancer cell population in GBM. During routine patient follow-up, MRI showed survival of cancer cells after treatments. TMZ- resistant cells have different characteristics from cancer cells in the heterogeneous cell population. Further analysis indicates some physiological and biological properties of stem cells such as markers and symmetrical/asymmetrical proliferative capacity. Temozolomide (TMZ) in Glioblastoma chemotherapy cause DNA damage by adding the methyl group to DNA bases which stall damaged cells at G2 / M cell cycle and consequently result in apoptosis. Damage is repaired by O6-methylguanine methyltransferase (MGMT) enzyme. In GBM patients, high expression of enzyme is associated with resistance. Other mechanism causing TMZ cytotoxicity could be due to cancer stem cells (CSC). In this study, our aim is to make GBM therapy more effective by

investigating the role of GBM stem cells in drug resistance. Firstly, characterization of CSC are determined with CD133 and Sox1 protein expressions. Additionally, cytotoxicity of TMZ is compared between CSC and differentiated cancer cells. The results showed higher resistance of CSC to temozolomide. The results of this study suggest that to improve patient's outcome, CSC resistance needs to be targeted for more effective treatment.

Speaker Biography

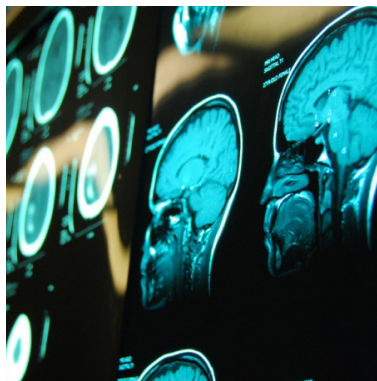
Meryem Alagoz completed her BSc studies in Medical Biology at Cerrahpasa Medical School, and pursued her MSc studies in Molecular Biology and Genetic Engineering at University of Sussex. She attained her PhD from University of Sussex. Her PhD project work involved the investigation of genetic alterations in human breast and ovarian cancer. She had worked as a Post-doctoral research fellow at Kings College and Imperial College. She worked at Sussex University for 7 years as a research fellow and still collaborating with them for my research. She have been investigating the molecular mechanisms involved in the development of human diseases such as cancer and brain. She has been working as an assistant professor at Molecular Biology and Genetics department of Biruni University since February 2017. She have been setting up the research and diagnostic laboratories at the Genome centre. In near future, she would like to focus on DNA damage and repair field where I gained extensive experience during my studies and research. She will employ these experiences to research into broader area of genetic disorders.

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Aqeela Al-Hashim

King Fahad Medical City, UAE

Utilization Of NGS data in Neurogenetic Disorders

Speaker Biography

Aqeela Al-Hashim, obtained her Bachelor of Medicine and Surgery (MBBS) from King Faisal University in 2002, then she obtained her Saudi Board and Arab Board of Pediatrics last 2008 after finishing her pediatric residency program in Riyadh, Saudi Arabia. She obtained her certificate of Royal College of Physician and Surgeon of Canada in child neurology (FRCPC) last 2015. She did Neurogenetics fellowship in clinical and molecular genetics research at the Hospital for Sick Children , Toronto, Canada. She is currently working as a consultant in pediatric neurology / neurogenetics at King Fahad medical city in Riyadh , Saudi Arabia. She was awarded the very prestigious John Prichard Prize for her research in Toronto. This prize resulted from her work in Corpus callosum abnormalities. Her main research interest is translational research mainly in genomic medicine, with utilization of functional molecular genetic studies to validate novel genetic variations in neurogenetic disorders.

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Neurogenetic disorders are a frequent reason for medical consultation in pediatric neurology service. Clinical variability and genetic heterogeneity are the whole mark of these diseases. Despite extensive metabolic and radiologic workup, the diagnostic yield has been disappointingly low. Whole exome sequencing (WES) has substantially accelerated the pace of discovery of disease associated genes and ending the diagnostic odyssey for many disorders. The diagnostic yield of WES is approximately around 30% in neurogenetic disorders. The diagnostic yield of 220 patients with various neurogenetic disease from highly consanguineous families evaluated in our center revealed a 25% pathogenic variants and 29% variant of unknown significance. The analysis of WES remains challenging. Determining whether this variant is disease causing or not is not an easy task and it requires cumulative level of evidence to ascertain pathogenicity. The ACMG/AMP guidelines attempts to ensure evidence-based interpretation of variants by considering multiple categories of data including allele frequency, computational prediction tools, functional studies that include cell lines or animal models, segregation studies and gene specific information (Hoskinson, Dubuc et al. 2017).

Here we will shed some light on the challenges of variant interpretation with some clinical cases illustration, we will discuss the limitation of NGS testing as a stand alone test, the clinician role in the rapidly expanding genomic medicine, the importance of deep clinical phenotyping and we will share our experience in WES in our neurogenetic clinic

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Shahid Mian

King Fahad Medical City, Saudi Arabia

Bioinformatic approaches to assess the genetic basis of Neurological Disease

Next generation sequencing is facilitating the rapid and cost effective surveillance of human genomes in order to identify variants of pathological consequence. Inherited neurological disorders represent one key area that have strong potential to benefit from such a co-ordinated genetic interrogation. Diagnostic confirmation of the presence of deleterious DNA changes could lead to effective personalised management protocols for the patient and also aid in informed decision making with respect to family planning for parents of affected children. New potential therapeutic targets may be elicited if the gene or its associated physiological pathways could be modulated by pharmacological intervention, thus ameliorating the deleterious effect of the variant change.

Bioinformatics is a broad term for a set of computational tools that facilitate variant identification and classification (e.g. benign or pathogenic). In combination with adequate clinical phenotyping data, the genetic locus/loci responsible for the disorder can be identified. This lecture provides an introduction to some of the computational approaches that can be adopted by clinical exome sequencing teams and how this information can be exploited to assist in immediate and long-term clinical management protocols.

Speaker Biography

Shahid Mian is a Consultant in Clinical Research at King Fahad Medical City (KFMC), Saudi Arabia. He is responsible for both the development and implementation of bioinformatic pipelines that are applied to genomic sequence analyses. Dr Mian has computationally processed over 800 patient exomes and is a member of the clinical reporting team within the CAP (College of American Pathologists) accredited Pathology and Clinical Laboratory Medicine at KFMC. This team is responsible for supporting physicians in the management of patients with inherited genetic disorders including those with neurological impacting disorders.

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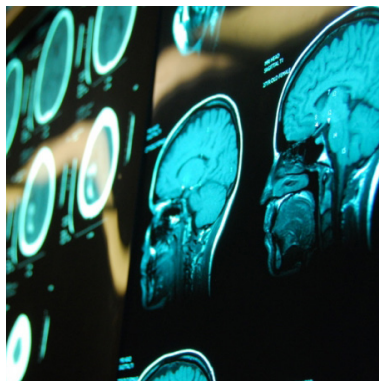


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Mapping of Broca's area in awake surgery using preoperative magnetic and intraoperative electric stimulation


Zmajevic Schonwald M, Rogic Vidakovic M, Inga Mladic Batinica I, Rotim K and Sajko T
Medical School University of Zagreb, Croatia

Navigated transcranial magnetic stimulation (nTMS) is used for eliciting corticobulbar motor evoked potentials (CoMEP) in cricothyroid muscle, where long latency response (LLR) represents Broca's area function. Equally, brain mapping of motor speech areas in awake surgery uses direct cortical electrical stimulation (DCS) with short train of stimuli (STS) technique, and causes speech arrest with LLRs recording. Whether both methods can be combined in awake surgery remains unclear. We will describe our experience in glioma awake surgery with preoperative nTMS and intraoperative STS DCS brain mapping. Patients were presented with expressive dysphasia, epileptic seizures, and/or prolonged periods of impaired consciousness. Positive magnetic resonance imaging (MRI) confirmed tumor in left frontal region in all patients. Preoperative nTMS brain mapping was visualized through 3D neuronavigation system. During the awake surgery nTMS cortical spots were confirmed by DCS, and caused speech arrest with LLR. Suction mapping device for subcortical brain mapping was used during tumor extirpations. The postoperative course was uneventful. Patients had preserved receptive language functions, sometimes with slight temporary difficulties in speech fluency. The preoperative nTMS was useful in planning and facilitating the DCS mapping of motor speech areas during awake brain surgery. More cases are needed to report further on the double mapping method.

Speaker Biography

Zmajevic Schonwald M has completed her PhD from Zagreb University, Croatia. She is neurologist and neurophysiologist specialized in intraoperative neurophysiology, and the scientific associate at Medical School Zagreb University, Croatia. She works as the Head of the Intraoperative neurophysiology unit at Neurosurgery Clinic, Medical Center "Sisters of Mercy", Zagreb, Croatia, and has over 20 publications connected with neurophysiology, intraoperative neurophysiology that mostly have been included in Current Contents database. She has been serving as intraoperative neurologist/neurophysiologist of the first awake neurosurgery team in Croatia.

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 Notes:

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Detection of residual awareness functions in patients with disorder of consciousness

Long Xu

Capital Medical University, China

The prediction of outcomes counts great clinical and social value for patients with disorder of consciousness (DOC). As their capacity of outputting are obstructed, it becomes a challenge in both clinical and fundamental fields to detect the signals which represents the residual of brain function. It is difficult to have a further classify of DOC with classical clinical scoring scales. The evaluating method with objective, stable, efficient and convenient properties is not acquired yet. And, the basic of consciousness-related neural circuit remains unknown. This research is based on event-related potential (ERP) of electroencephalogram (EEG) technique. Auditory stimulating protocols are applied to evoke classical EEG indicators, such as mismatch negativity (MMN) and P300, which will be recorded continuously for the first time. Differentiations in signature waveform and power spectrum are analyzed, and propose a EEG based prognosis tool. Furthermore, encephaloelectrol activities will be localized with the assistance of functional magnetic resonance images (fMRI), in which the start points, key nucleus, and end points related to consciousness will be explored.

Speaker Biography

Long Xu is a neurosurgeon in the Department of Neurosurgery Trauma, Beijing Tiantan Hospital, Capital Medical University. He graduated from Peking Union Medical College and got the degree of M.D in 2005. As an international member, he finished the Swiss Davos Neurotrauma courses of AOCMF and got the membership certificate in 2010. he became a Chinese member of local faculties in AO Neurotrauma Courses in Beijing in 2013. In the past five years, he have mainly engaged in clinical and basic researches related to severe traumatic brain injury, disorder of consciousness, and brain cognitive function.

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Notes:

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Single or cervical multiple levels arthroplasty is a safe option for active and functional mobility of cervical degenerative with minimal invasiveness

Muhammad Qazafi Memon

Universal Hospital, UAE

The author for this technical report to establish the feasibility of performing the single or multi levels Cervical Arthroplasty is a safe option for active and functional mobility of cervical degenerative spine disease. First few cases cervical spondylotic radiculopathy with severe right or left and bilateral brachialgia and cervicalgia secondary to large postero lateral prolapsed disc treated with single level arthroplasty.


Second few cases: Two levels cervical disc herniation with bilateral radiculopathy and bilateral brachialgia and cervicalgia and treated with two adjust level arthroplasty.

Third case: Three level cervical disc and bilateral brachialgia and cervicalgia and treated with three adjust level and all three groups of patients were operated with small incision and arthroplasty with artificial disc replacement surgery technical aspects and clinical outcome have been reported. No intra or post-operative complications were encountered. Intra operative blood loss was minimal. The patient has cosmetic scars on healing. Standard procedure of placement of artificial titanium disc is sufficient for normal mobility and active movement with minimally invasive approach for artificial titanium disc replacement in single and multiple levels with good outcome and active mobility.

Speaker Biography

Muhammad Qazafi Memon has completed MCPS in 2005 and FCPS in Neurosurgery at the age of 32 years from Liaquat National Hospital post graduate center form via college of physician and surgeons of Pakistan and he has done spinal fellowships from Georgia, USA. Muhammad Qazafi Memon was the head of department of Neurosurgery and Neuro Spinal department in PABM Hospital, Arar, KSA. Muhammad Qazafi Memon is doing MISS and Endoscopic Spinal Surgery and Complex 360 degrees spinal fixation in Universal Hospital Abu Dhabi and worked over multiple research papers of spine surgery.

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Mircocircuitry for short-term memory and its relationship with Alzheimer's disease

Hao Li


Capital Medical University, China

Short-Term Memory (STM) is the capacity to hold information in the brain in an active, readily accessible state for a brief period of time, typically from seconds to minutes. Its coding mechanisms at the microcircuitry level remain a mystery. Performing two-photon imaging on behaving mice to monitor the activity of neuronal microcircuitry, we discovered a neuronal subpopulation in the medial prefrontal cortex (mPFC) that exhibited emergent properties in a context-dependent manner underlying a STM-like behavior paradigm. These neuronal subpopulations exclusively comprise excitatory neurons and mainly represent a group of neurons with stronger functional connections. In addition, we found the microcircuitry plasticity was maintained for minutes and was absent in an animal model of Alzheimer's disease (AD). Considering the toxicity of A β -soluble oligomers is one of the major causes of AD, in the future, we aim to unveil whether and how A β -soluble oligomers will influence the microcircuitry plasticity for STM in AD animal models.

Speaker Biography

Hao Li graduated from Capital Medical University and got the M.D and Ph.D in 2017. Currently, he is working as a neurosurgeon in the Department of Neurosurgery, Beijing Tiantan Hospital, Capital Medical University. In the past five years, he have mainly engaged in clinical and basic researches related to cerebral vascular diseases and Alzheimer's disease.

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Tethered cord syndrome of delayed onset following repair of myelomeningocele

Hamdi Nabawi Mostafa¹, Ahmed El-Sherif², Mohammed Barania² and Mohammed Keshk²

¹Misr University for Science and Technology, Egypt

²Al-Azhar Faculty of Medicine, Egypt

Object: Symptom response to spinal cord untethering is poorly understood in retethering after myelomeningocele (MMC) repair. In this study, children who developed spinal cord tethering following myelomeningocele repair were included to determine the impact of untethering on symptoms.

Methods: A review of 14 children with symptomatic spinal cord tethering following MMC repair was performed. The response of symptoms to re-untethering was explored.


Results: In this study 14 patients underwent surgery were diagnosed preoperatively as secondary spinal cord re-tethering syndrome after repair of MMC. There were 9 males and 5 females. The presenting symptoms were cervico-dorsal pain, brachialgia, kyphosis, deterioration of sphincteric control and paraparesis. A tense cord in the MRI is a suggested sign of retethering. Postoperatively, all symptoms were either stable or improved in all patients. Postoperative course of all cases was uneventful. There were no significant complications except CSF leakage that was temporarily seen in 3 cases which stopped after secondary suture.

Conclusions: Accurate diagnosis is the main predictor of the outcome of re-untethering. Tense cord in the MRI may be of value in diagnosis of the retethering. Re-untethering procedure is feasible with favourable outcome and low rate of complications.

Speaker Biography

Hamdi Nabawi Mostafa has completed his MD in neurosurgery from Cairo University 2007, Egypt. He was the director of Neurosurgical department, Nasser Institute, Ministry of health since 2009, Egypt. He joined the faculty of medicine, Misr university for science and Technology since June 2017 as the chief of spine unit in neurosurgical department, Egypt. He is interested in advanced spine surgery and member of spine master group, member of middle east spine society. He is the vice president of high medical committee MOH, Egypt. Has many published paper mainly on spine surgery.

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 Notes:

Neurology and Neuroscience

June 11-13, 2018 | London, UK

Multiple level transpedicular fixation of lumbar spine with PILF, TLIF, OLIF AND ALIF 360 FUSIONS and FIXATION improve the mobility and general activity and full recovery for thoraco lumbar and sacral degenerative

Muhammad Qazafi Memon

Universal Hospital, UAE

The author for this technical report to establish the feasibility of performing the multi levels Transpedicular Fixation of Lumbar Spine with PILP, TLIF, OLIF and ALIF 360 FUSION AND FIXATION improve the mobilizing and general activity and full recovery Thoraco Lumbar and Sacral degenerative spine disease.

First few cases: cervical spondylotic degenerative multiple disc disease and with severe bilateral sciatica, mechanical pain, radiculopathy and spondylolesthesis at Lumbosacral area then have done Four Level Fixation with PILF and TLIF

Second few cases: Lumbar spondylolesthesis degenerative multiple disc disease, spinal stenosis and lumbosacral spondylolesthesis at lumbosacral area with bilateral sciatica and mechanical pain, radiculopathy and then I have done Five Level Fixation from L2 to S1 Transpedicular Fixation with TLIF, PLIF and OLIF


Third case: Lumbar spondylotic degenerative multiple disc disease and spinal stenosis at multiple level and lumbosacral spondylolesthesis at more than one level with bilateral sciatica and mechanical pain ,radiculopathy and then I have done Six Level Fixation from L1 to S1 Level Transpedicular Fixation with TLIF, PLIF and OLIF

Fourth Cases: With Thoraco Lumbar spondylotic degenerative multiple disc disease and spinal stenosis and Lumbar spondylolesthesis at more than Two Levels with bilateral sciatica and mechanical pain and radiculopathy and I have done D11 to L4 Fixation.

Speaker Biography

Muhammad Qazafi Memon has completed MCPS in 2005 and FCPS in Neurosurgery at the age of 32 years from Liaquat National Hospital post graduate center form via college of physician and surgeons of Pakistan and he has done spinal fellowships from Georgia, USA. Muhammad Qazafi Memon was the head of department of Neurosurgery and Neuro Spinal department in PABM Hospital, Arar, KSA. Muhammad Qazafi Memon is doing MISS and Endoscopic Spinal Surgery and Complex 360 degrees spinal fixation in Universal Hospital Abu Dhabi and worked over multiple research papers of spine surgery.

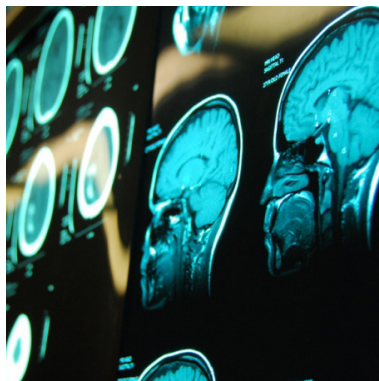
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 Notes:

Scientific Tracks & Sessions

June 13, 2018

Neuroscience 2018



6th International Conference on
Neurology & Neuroscience

June 11-13, 2018 | London, UK

Neurology and Neuroscience

June 11-13, 2018 | London, UK

Cuprizone-dependent reactive changers of Central Nervous System in the mice and their Improvement by Cytokine

Nataliia O Melnyk, Irina F Labunets, Anzhela E Rodnichenko, Svitlana Yu Rymar and Nataliia A Utko
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In this experimental work aimed at investigation of morphological changers in organs of central nervous system (CNS) and neuroprotective effects of recombinant human leukemia inhibitory factor (rhLIF) on mice of different ages with cuprizone model of demyelination. In the 129/Sv mice at 3-5 and 16-17 months of age, we assessed motor and emotional activity, brain antioxidant enzymes, T-lymphocytes and macrophages. After staining of histological sections of the brain and spinal cord in toluidin blue, we determined the percentage of neurons with unmodified, moderate and severe structural changes. We studied changers of nervous fibers of organs of CNS after used methods of electron microscopy and morphometry. Cuprizone was provide daily for 3 weeks. RhLIF was injected after 7-days cuprizone diet, one administration daily, 50 µg/kg. Cuprizone decreased the amounts of crossed squares and faecal boluses in the mice of both age groups. RhLIF restored emotional activity in these mice, but more in young mice. In the cuprizone-treated mice of both age groups, the percentage of neurons with severe changes in the brain and spinal cord was increased

and rhLIF the amounts of neurons with destructive changes were reduced, being less pronounced in aged mice. In the brain of cuprizone-treated mice of both age groups, the activity of catalase and glutathione peroxidase inhibits. The percentage of T-lymphocytes and active macrophages was increased in cuprizone-treated mice of both age groups. Decrease of amount and activity of macrophages after injections of the rhLIF was observed. LIF may be a perspective neuroprotective drug.

Speaker Biography

Nataliia O Melnyk is the Professor of the Histology and Embryology Department of National O.O.Bogomolets Medical University, the Leading Research Scientist of the Experimental Modeling Laboratory at the State Institute of Genetic and Regenerative Medicine National Academy of Medical Sciences of Ukraine, Kyiv. Graduated from Kyiv National Taras Shevchenko University in 1993, after an assignment she worked as an engineer in the Institute of Molecular Biology and Genetics. During 2008- 2011, she worked as Deputy Head of the Department of Education and Methodology of the National O.O.Bogomolets Medical University. She has more than 270 scientific and methodological works, 5 patents of scientific research.

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 Notes:

Neurology and Neuroscience

June 11-13, 2018 | London, UK

Anti-oxidative and anti-inflammatory protection induced by ranolazine in astrocytes in primary culture

Constanza Aldasoro¹, Adrian Jorda², Sol Guerra-Ojeda², Martin Aldasoro², Patricia Marchio², M^a Dolores Mauricio², José M^a Vila² and Soraya L Valles²


¹General Hospital of Castellon, Spain

²University of Valencia, Spain

Ranolazine (Rn), a piperazine derivative, is indicated for the treatment of refractory chronic stable angina. Late sodium current (INa) amplitude is increased in different pathologies, such as myocardial ischemia. Rn induces benefits in cardiovascular, brain and other organs and systems. The present work was designed to determine the Rn protective role against inflammation and oxidative stress produced by A β 1-42 in astrocytes in primary culture. Cells were incubated with Rn (10⁻⁷, 10⁻⁶ and 10⁻⁵ M) during 24 hours. ELISA technique was used to assay pro-inflammatory mediators IL-1 β and

TNF- α . The expression of PPAR- γ , Mn-SOD and Cu/Zn-SOD was determined by western blot techniques. The presence of Rn diminished IL-1 β and TNF- α levels and increased PPAR- γ protein expression. Furthermore, antioxidant protein expression, Cu/Zn-SOD and MnSOD was significantly increased after Rn addition in astrocytes in primary culture. Accordingly with our results, Rn (at therapeutic concentrations) showed protective effects, such as anti-inflammatory and anti-oxidant actions in astrocytes in primary culture affected by A β 1-42 toxic peptide

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 Notes:

Neurology and Neuroscience

June 11-13, 2018 | London, UK

Event related Brain activation and Neurofeedback

Thomas F Feiner


Institute for EEG-Neurofeedback, Germany

It is well known that pathologies show certain brain regions with either increased or decreased activity. For example, typical depression has an increased activation in the insula according to fMRI studies. If we show negative pictures to a person, there are specific locations in the brain that are activated as a consequence of those stimuli (Canli et al., 2002). The same concept works with standardized low-resolution brain electromagnetic tomography (sLORETA) which incorporates a mathematical inverse solution of surface EEG data to provide cortical source localization, and generating three-dimensional images, similar to those produced by fMRI data (Thatcher, 2013). The negative brain activation to a stimulus often causes problems for example with patients suffering from depression, anxiety and PTSD. Based on those findings we've created an event related Neurofeedback-Protocol based on the stimulus and the hereby evoked brain response. Our innovative Neurofeedback-Protocol uses precisely time locked operant feedback and neurotherapy which is directly related to the given stimulus and the brain response

Speaker Biography

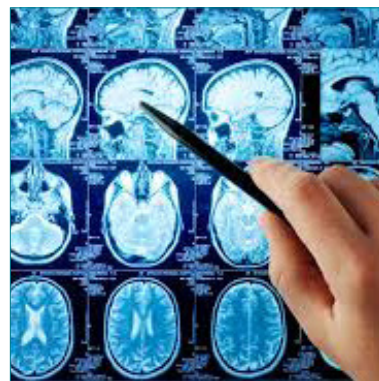
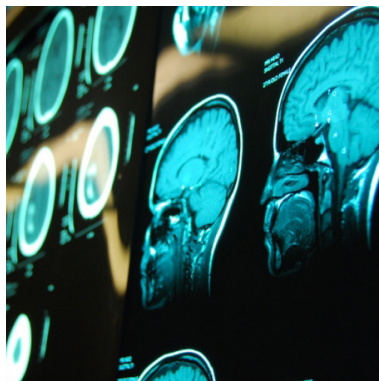
Thomas F Feiner has more than 25 years experience as an occupational therapist and neurotherapy. He conducted and participated clinical research on QEEG and evoked potentials and Neurofeedback since 2006. He developed computer software for testing the auditory order threshold on regular Windows PCs and created an easy to use stimulus presentation program for research in the field of evoked potentials and other psychophysiological measures. He is the clinical director of the Center for Neurofeedback in Munich and established the Institute for EEG-Neurofeedback in 2008 which offers professional education programs in the field of Neurofeedback, Quantitative EEG and evoked potentials. Since 2017 he conducted Research on the EEG of meditators in great study of more than 1000 subjects. He is founder and owner of Neurofeedback-Partner GmbH and published articles about event related imaging, QEEG and Neurofeedback. His focus is on research and development of integrated neurofeedback protocols, event related potentials in combination with low level brain stimulation technologies.

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 Notes:

Young Researchers Forum June 13, 2018

Neuroscience 2018



6th International Conference on
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Neurology and Neuroscience

June 11-13, 2018 | London, UK

Assessment of autonomic function during Ictal and Interictal Period of Migraine

Abhinav Singh Verma
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Background: Studies suggest a degree of autonomic dysfunction which gets implicated in pathophysiology of migraine, but none has ever commented on differences among ictal and interictal (headache free) period of migraine. Therefore, this study aims at assessing and comparing autonomic dysfunction during ictal and interictal period of migraine.

Methodology: Patients with migraine according to ICHD 3rd edition β version criteria were recruited for the study. Tests of sympathetic function (beat to beat blood pressure changes in Head-Up-Tilt test) and parasympathetic function (heart rate responses to Deep Breathing and Valsalva Manoeuvre) were performed, each during ictal and interictal period. The results of the ictal period were then compared with that of interictal period.

Results: Ten patients [Eight female (80%), 20-58 years, mean 34.6] were studied. Nine patients (90%) showed Expiration: Inspiration [E:I] ratio {Ratio of maximum RR interval during expiration phase with minimum RR interval during inspiration phase} in Deep Breathing test below 1.24 ($p=0.008$) and four patients (40%) showed 30:15 ratio {Ratio of RR interval during 30th heart beat with that during


15th heart beat} in Head-Up-Tilt test below 1.04 ($p=0.045$), thus indicating significantly impaired vagal response. These results were in ictal period. All patients exhibited normal parasympathetic response during interictal period and intact sympathetic function during both ictal and interictal periods.

Conclusion: There is significant parasympathetic dysfunction in ictal state as compared to headache-free periods. Parasympathetic dysfunction is observed in E:I ratio ($p=0.008$), Δ HR ($p=0.014$), 30:15 ratio ($p=0.045$). There is no objective evidence of sympathetic dysfunction in ictal period as compared to headache-free periods. Therefore, this study provides newer insight into the pathophysiology of a migraine attack- the genesis of the ictal state, which is attributed to parasympathetic dysfunction.

Speaker Biography

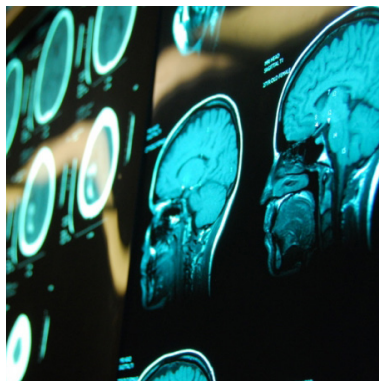
Abhinav Singh Verma has completed his MBBS from the premier institute, All India Institute of Medical Sciences (AIIMS), New Delhi. He is an ICMR award winning researcher and active researcher in the department of Neurology at AIIMS, New Delhi.

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 Notes:

Special Session
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Neuroscience 2018



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June 11-13, 2018 | London, UK

Introduction to Neurosurgery (NEUROSURGERY 101) for Medical Students

Saleem Abdulrauf

Walter E. Dandy Neurosurgical Society, USA

This special course will cover:

- Human Cortex: Functional Organization and Surgical Approaches
- Brain Aneurysms: Decision Making and Surgery
- Brain Vascular Malformations: Decision Making and Surgery
- A Tour of the Skull Base
- Open Discussion About a Career in Neurological Surgery

Biography

Saleem Abdulrauf is considered a leading figure in the field of neurosurgery. Neurosurgeons from around the world come to SLU throughout the year to be taught complex neurosurgical techniques by him. He has served as a visiting professor to over 100 universities around the globe. He has authored the main reference textbook for brain bypass surgery titled "Cerebral Revascularization" in which Dr. Abdulrauf details extra-cranial to intra-cranial bypass surgery. Additionally, he has pioneered a procedure for brain bypass that is named after him. He has served on the boards of multiple neurosurgical societies including the Congress of Neurological Surgeons (CNS), the North American Skull Base Society (NASBS), and the World Federation of Skull Base Societies (WFSBS). His most preeminent role was his appointment as the inaugural President of the Walter E. Dandy Neurosurgical Society, which is considered the primary international society for operative neurosurgery. He has been named as one of the Best Doctors in America annually for the last eight years. His opinion is routinely sought for the treatment of complex cases by neurosurgeons from around the world.

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