26-27 JUNE 2023

PARIS FRANCE

4TH INTERNATIONAL CONGRESS ON

FUTURE NEUROLOGY & ADVANCES IN RESEARCH & TREATMENT OF BRAIN DISORDERS

FUTURE NEUROLOGY 2023

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FUTURE NEUROLOGY
2023

DAY 1

JUNE 26, 2023

| 09:30-10:00 | Registrations |

| 10:00-10:15 | Opening Ceremony |

Neurology | Neurosurgery | Neuropsychiatry | Central Nervous System | Pediatric Neurology | Neuro-Oncology and Brain Tumors | Neurological Disorders | Sleep Disorders | Stroke | Movement Disorders | Parkinsons Disease | Epilepsy | Multiple Sclerosis | Alzheimer's Disease and Dementia | Neuromuscular Diseases

Distinguished Speaker Talks

| 10:15-10:40 | **Title: Volumetric evaluation of patients before & after endarterectomy why do we do it all wrong?**
Michał Elwertowski, *Medical University of Warsaw, Poland* |

| 10:40-11:05 | **Title: Deep learning on MRI for brain age signature assessment**
Teresa Wu, *Arizona State University, USA*
Mayo Center for Innovative Imaging, USA |

Refreshment Break 11:05-11:20

| 11:20-11:45 | **Title: Impact of migraine and its management in five gulf countries: Results of social analytics study**
Taoufik Alsaadi, *American Center for Psychiatry & Neurology (ACPN) & Khalifa University, UAE* |

| 11:45-12:10 | **Title: Neuropeptides and central nervous system plasticity: Lessons in physiology and pathophysiology**
Renata Fleming, *Rio de Janeiro, Brazil* |

| 12:10-12:35 | **Title: Is Developmental Dyslexia an Artifact of Premature Writing?**
David S. Mather, *University of Victoria, Canada* |

| 12:35-13:00 | **Title: Skin misfolded protein-seeding activity as a diagnostic biomarker for neurodegenerative diseases**
Wenquan Zou, *Jiangxi Academy of Clinical Medical Sciences, The First Affiliated Hospital of Nanchang University, China* |

Lunch Break 13:00-13:30

13:30-13:55	**Title: Implications of neuroscience driven architecture (Application on children's learning environments)** Dina Ezzat Ahmed Shaaban, *Ain Shams University, Egypt*
13:55-14:20	**Title: Binary fellowship – surgical training in the endovascular and neurovascular areas** Adina Bogdan, *Emergency County Hospital, Romania* *Faculty of Medicine and Pharmacy, PhD School, University of Oradea, Romania*
14:20-14:45	**Title: The effect of tibialis anterior weakness on foot drop and toe clearance in patients with facioscapulohumeral dystrophy** Clement N. Gambelli, *North-West University, South Africa*
14:45-15:10	**Title: Compensation of flow in patients with significant carotid stenosis & occlusion – principal predictor of stroke** Michał Elwertowski, *Medical University of Warsaw, Poland*
15:10-15:35	**Title: Real-Life Daily Functional Markers of Mild Cognitive Impairment (MCI) in People with Parkinson's Disease (PD)** Sara Rosenblum, *University of Haifa, Israel*
15:35-15:50 Poster	**Title: The relationship between daily stress and smartphone addiction among South Korean adolescents** Chaeyoon Kim, *Seoul National University, South Korea.*
15:50-16:05 Poster	**Title: The effect of group psychomotor therapy on behavior problems in children 4-5 years of age** Georgios Moschos, *University of Thessaly, Greece*
16:05-16:30	**Title: Efficacy of Greater occipital nerve pulsed radiofrequency ablation in management of refractory migraine with occipital neuralgia** Neerja Bharti, *Department of Anaesthesia and Intensive Care, PGIMER, India*

Coffee Break: 16:30-16:45

16:45-17:10	**Title: Neural underpinnings of default mode network on empathy revealed by intracranial stereoelectroencephalography** Chao Zhang, *Beijing Tiantan Hospital, Capital Medical University, China*
17:10-17:35	**Title: Pentoxifylline as add-on treatment to donepezil in copper sulphate-induced Alzheimer's disease-like neurodegeneration in rats** Mohamed M Elseweidy, *Zagazig University, Egypt*
17:35-18:00	**Title: A deep Learning Approach to Predicting stages of Alzheimer's Dementia based on ATN Framework** Samuel Danso, *University of Edinburgh Medical School, UK*

| 18:00-18:25 | **Title: Alzheimer's disease: From basic mechanisms to development of therapeutics**
Cheng-Xin Gong, *New York State Institute for Basic Research in Developmental Disabilities, USA* |

Panel Discussion

End of Day 1

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DAY 2 June 27, 2023

Neurology | Neurosurgery | Neuropsychiatry | Central Nervous System | Pediatric Neurology | Neuro-Oncology and Brain Tumors | Neurological Disorders | Sleep Disorders | Stroke | Movement Disorders | Parkinsons Disease | Epilepsy | Multiple Sclerosis | Alzheimer's Disease and Dementia | Neuromuscular Diseases

Distinguished Speaker Talks

| 10:15-10:40 | **Title: Intravenous thrombolysis and reperfusion therapies above 4.5 h in acute ischemic stroke**
Andrés Ricaurte-Fajardo, *Weill Cornell Medicine/NewYork Presbyterian Hospital, USA* |

| 10:40-11:05 | **Title: Reversible Cerebral Vasoconstriction Syndrome: A Clinical and Therapeutic challenge**
Nathalia Melo González, *Universidad Pontificia Javeriana, Bogotá, Colombia* |

Refreshment Break 11:05-11:20

| 11:20-11:45 | **Title: The sensitivity of sniffer dogs for diagnosis of Parkinson's Disease: A diagnostic accuracy study**
Chang-Qing Gao, *Xiang-Ya Hospital, China* |

| 11:45-12:10 | **Title: Reversible posterior encephalopathy syndrome (PRES): a case report**
Salma Ketata, *Habib Bourguiba hospital, Tunisia* |

| 12:10-12:35 | **Title: Dahlmann-Body-Analysis: A new anthropometric model for body composition estimation in the assessment of metabolic risk factors**
Nicolaus Dahlmann, *Universitätsklinikum Schleswig-Holstein, Germany* |

| 12:35-13:00 | **Title: The knowledge level of taekwondo coaches regarding physical training methods in Jordan**
S. Hammad, *Al-Ahliyya Amman University, Jordan* |

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SCIENTIFIC ABSTRACTS

DAY 1

4th International Congress on

Future Neurology and Advances in Research and Treatment of Brain Disorders

June 26-27, 2023 | Paris, France

FUTURE NEUROLOGY 2023

Volumetric evaluation of patients before & after endarterectomy why do we do it all wrong?

Elwertowski M, Kaszczewski P, LeszczynskiJ, Ostrowski T, Kaszczewska J and **Gałązka Z**

Department of General, Endocrine and Vascular Surgery, Medical University of Warsaw, Poland

The universe of carotid artery stenosis (CAS) turns around two problems whether to operate and when to do it. Volumetric evaluation of cerebral flow (CBF) performed before and after successful endarterectomy (EA) creates clear clinical model for seeking the answer.

43 patients (21 female, 22 male) qualified for carotid endarterectomy due to symptomatic, >70% ICA stenosis were included in the study. In all patients a CBF (calculated as the grand total of the flow volumes in the internal carotid – ICAs, external carotid – ECAs, vertebral artery – VAs) was assessed in the Doppler ultrasonography preoperatively, and after the surgery. Preoperative CBF in the study group was compared to the previously published CBF reference values (1).

In our study preoperatively 11/43 patients (25,6%) had "no compensation", 20/43 (46,5%) had the CBF similar to reference values – "mild compensation", and 12/43 (28%) had "significant compensation". In "no compensation" group most prominent postoperative CBF increase of 305,49±144.9 ml/min (from 652,09 ml/min to 957,58 ml/min, p<0,05) was observed. In "mild compensation" group a less accentuated, postoperative CBF increase of 188,9±131 ml/min (from 841,1 ml/min to 1030 ml/min, p<0,05) was found. In "significant compensation" group there was no change in postoperative CBF (insignificant increase of 9±63.9 ml/min, from 1121,08 ml/min to 1130,08 ml/min, p>0,05).

There was no postoperative CBF increase in patients with preoperative volumetric flow compensation. Patients with lower preoperative CBF after surgical treatment demonstrated significant increase in global cerebral inflow, specially when initial flow volume was decreased. Patients with marked collateral circulation increase don't benefit from EA – indications for surgery must be seriously reconsidered.

Biography

Michal Elwertowski MD. I am working in diagnostic ultrasound since graduation from medical Faculty (1979) , performing Doppler studies since 1985, carotid Doppler since 1989, working as consultant for Surgery Departments of Medical University of Warsaw for most of my life. Since over 20 years I am head of Doppler training for Polish Ultrasound Society, being since 1997 member of the Board of this Society. Ultrasound is my exclusive professional occupation since 1984, altogether I performed personally 350-400 thousands of US examinations, out of them 25-30 thousands were carotid Doppler studies. Together with DR Kaszczewski we formed a team investigating clinical problems related with alterations of intracerebral flow volume and its impact on patient's diagnosis & treatment.

Deep learning on MRI for brain age signature assessment

Teresa Wu[1,2], Jay Shah[1,2] and **Yi Su[1,2,3]**
[1]*School of Computing and Augmented Intelligence, Arizona State University, USA*
[2]*ASU-Mayo Center for Innovative Imaging, USA*
[3]*Banner Alzheimer Institute, USA*

Objective: The objective of this study is to assess a deep learning approach to characterizing brain age signatures using MRI from cognitively normal subjects and explore the potential of the signatures in neurodegenerative disease (e.g., Alzheimer's disease) diagnosis.

Method: A 3D deep ResNet model was implemented to predict the brain age of the participants. The model was trained on 7372 T1 MRI from a combined lifespan cohort of 5848 cognitively normal participants (age: 8-95 yrs) using a 10-fold cross validation. This combined cohort consisted of participants from Open Access Series of Imaging studies, IXI dataset, Autism Brain Imaging Data Exchange, International Consortium for Brain Mapping and National Alzheimer's Coordinating Center. We implemented two architectures from the ResNet family: ResNet-18 and ResNet-50 and used mean squared error as the loss function. Training, validation, and testing set in each fold contained imaging samples from all 5 sources with 80:10:10 ratio. The model was then applied to the independent cohort collected from ADNI (Mild Cognitive Impairment (MCI): N=432, 50-98 yrs; Normal Control (NC): N=678, 55-90 yrs) to interrogate the correlations between the brain age signatures with AD stages.

Results: The ResNet models achieved an MAE=3.76 yrs and R2=0.93 (ResNet-18), an MAE=3.86 yrs and R2=0.91 (ResNet-50) across 10 folds in the lifespan cohort. The brain signatures derived from ADNI cohort showed statistical group difference between MCI and HC ($p<0.05$).

Conclusion: Using a combined cohort of cognitively normal subjects from 5 diverse sources, our deep neural network (ResNet) was able to achieve state-of-art performance in predicting brain age. The brain age signature has the potential to support neurodegenerative disease diagnosis.

Biography

Teresa Wu is a Professor from School of Computer and Augmented Intelligence (SCAI), Arizona State University and an adjunct Professor of Radiology in College of Medicine, Mayo Clinic. Her current research interests include imaging informatics and clinical decision support. Professor Wu has published ~140 journal articles in journals such as *NeuroImage, NeuroImaging: Clinical, Brain Communication, IEEE Transactions on Pattern Analysis and Machine Intelligence, Information Science.* Professor Wu is the founding Director of the ASU-Mayo Center for Innovative Imaging. She received numerous awards including NSF CAREER award (2003), AFOSR Summer Faculty Fellow (2010, 2011), IBM Faculty Award (2017), IISE Fellow (2020) and ASU PLuS Fellow on Global Health (2016-2020). She was a former Editor-in-Chief for IISE Transactions on Healthcare Systems Engineering (2016-2020).
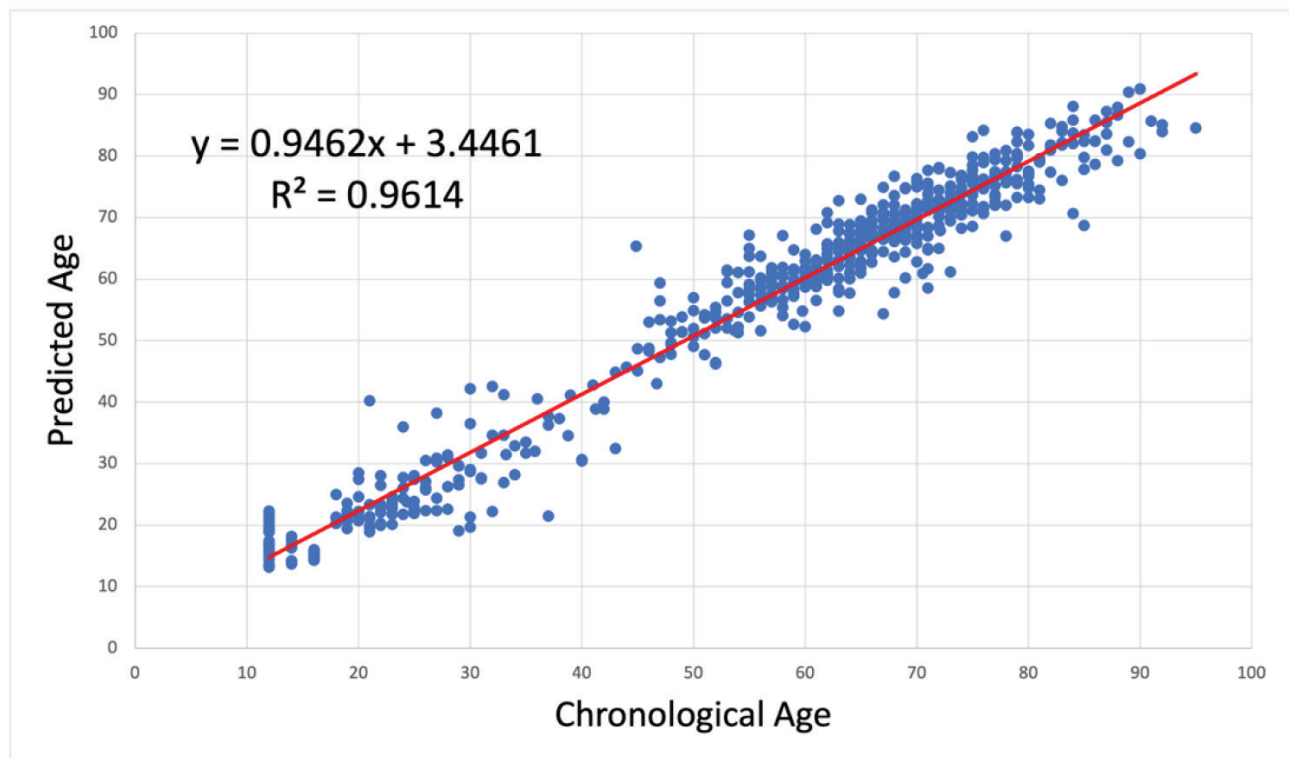
$$y = 0.9462x + 3.4461$$
$$R^2 = 0.9614$$

Figure 1 Comparison between chronological and predicted age of participants using our model from one of the 10 test-sets of lifespan cohort

Table 1 Two clinical groups: age signature is the difference between the predicted age and the chronological age, sex, education

	HC (678)	MCI (432)
Age (range)	72.6 (55-90)	73.1 (55-98)
Sex (M/F)	290/388	243/189
Education ±SD	16.6 ±2.5	16.1 ±2.8
Brain Age Signature	-1.22 ±0.19	-0.29 ±0.24

Impact of migraine and its management in five gulf countries: Results of social analytics study

Taoufik Alsaadi[2], Abubaker Almadani[1], Suhail Al-Rukn[1], Alessandro Terruzzi, Nervana Habashy[4]
and **Ali AlJabban[4]**

[1]Department of Neurology Rashid Hospital, UAE
[2]American Center for Psychiatry & Neurology (ACPN) & Adjunct Professor of Neurology, Khalifa University, UAE
[3]Neurology Department, Mediclinic City Hospital, UAE
[4]Pfizer Inc, UAE

Objective: To capture the patients' voice about around migraine and related products.

Methods: Artificial Intelligence technologies were utilized to assess over 100M websites on the topic of migraines in English and Arabic, between January 1, 2018 and June 30, 2022 from Kuwait, Bahrain, UAE, Oman, and Qatar.

Results: A total of 53K mentions were assessed, of which 64% conversations in both languages were hosted on Twitter. Men were found to be 1.1 times more likely to discuss migraine topics on social media. The top content was on migraine triggers and treatment. Patients' conversations highlighted concerns regarding impact of migraine on overall health and included mentions about pregnancy (2%) and impact on vision (2.5%). Disruption of sleep caused by migraine was discussed in >3% conversations. Migraine was discussed in association with other illnesses such as influenza.

Paracetamol, aspirin, ibuprofen, and triptans were highlighted to help with sleep and improved quality of life in addition to pain alleviation. Patients also discussed self-management treatments including cannabidiol soft gels, cupping, aroma oils, acupuncture, face masks, and scalp massages. Mentions on alternative treatments included ice packs, vaporub and aroma oil containing roll-on. Naturopathy was discussed in 4% of the conversations.

Patients used TikTok to share personal stories, ask questions about the best treatment and they actively sought to connect and interact with other migraine sufferers. Some conversations implicated variants of coronavirus or COVID-19 vaccines for causing migraine symptoms.

Conclusion: Patients try self-management and alternative medicine instead of seeking medical help which may lead to improper management. Patients seemed eager to connect with other people suffering from migraine and seek solutions which have worked for other. These insights can be used to generate awareness, understand gaps in management, inform about effective available treatment options and bust misconceptions.

Biography

Chairman, Neurology Department, Chief Medical Officer, American Center for Psychiatry & Neurology (ACPN) & Adjunct Professor of Neurology, Khalifa University, UAE.

Neuropeptides and central nervous system plasticity: Lessons in physiology and pathophysiology

Renata Fleming
Rio de Janeiro, Brazil

Neuropeptides were described 40 years ago and since then their role in regulation of central nervous system has been demonstrated. However, the last years have brought light to a new role of this molecules in central nervous system (CNS) plasticity. This section promotes a discussion in the last findings on CNS plasticity and its implication in normal brain function and dysfunction. We will review the role of neuropeptide during development and its implications in adaptative responses. Furthermore, we will address plasticity contribution in memory, learning and regeneration. Lastly, we will talk about neuropeptide contribution in CNS dysfunction and its potential as therapeutical target.

Biography

Renata Fleming is a MD/PhD who has been working as an assistant physician and a researcher for the past 15 years. She believes that research is the source of valuable knowledge that can shape a sharpen medical mind and promote the best care for patients in need. She got her medical degree and her PhD at Federal University of Rio de Janeiro. After she finished her medical training, she was invited for a research fellow position at MGH/Harvard Medical School. After 6 years of an outstanding scientific training in USA, she is back to her roots. Now back to Brazil her aims are to promote local science and improve worldwide collaboration that could unravel new knowledge and ultimately benefit patients.

Is Developmental Dyslexia an Artifact of Premature Writing?

D. S. Mather
University of Victoria, Canada

Dyslexia is one of the most studied learning disorders. Despite this, its biological basis and main causes are still not fully understood. However, over 50 years ago, based on extensive clinical experience with Dutch children affected by learning disorders, P. Mesker, a Dutch Neuropsychiatrist, claimed that writing before age-8 could result in manual-motor and ocular-motor habits detrimental to the development of reading and spelling proficiency. Subsequent evidence of impaired bimanual and binocular coordination in children with dyslexia supports this claim. However, Mesker's clinical results lacked empirical validation. The central argument of this presentation is that left eye/right hemisphere (RH) dominant beginning writers of English, in learning to write letters, must cope with ipsilateral RH-to-left hemisphere (LH) corpus callosal innervation that is kinesthetically reversed in order and orientation to the rightward direction of print. In right eye/LH-dominants, ipsilateral mirror-innervation is inhibited through letter-sound decoding, but in left eye/ RH-dominants it is not. Consequently strong RH dominance induces sequential letter (e.g., was/saw) and spatial letter (e.g., b/d) mirror-writing that confuses and interferes with normal reading development. Research findings of enhanced RH-to-LH corpus callosal communication in dyslexic readers are consistent with such ipsilateral mirror-motor interference. However, there is considerable evidence that the visual system may be able to re-map mirror-reversed kinaesthetic innervation onto conventionally ordered print if letter writing instruction is postponed until 7–8 years of age. Studies that have found normal reading comprehension among individuals with congenital absence of the corpus callosum (full or partially absent corpus callosum), provide support for access to whole word LH processing via anterior commissure, mirror-to-non mirror interhemispheric communication. This likelihood is further indicated by the Hebrew reading leap at age 7–8 from spelling-to-sound translation to whole word processing, since written Hebrew is a left-to-right orthography in which RH-to-LH ipsilateral mirror-innervation is uninhibited.

Biography

PhD in Interdisciplinary Neuropschology/Education program at the University of Victoria, BC
- Focus on research into premature reading/writing as a cause of dyslexia.

MA in Applied Psychology, State University of New York
- Internship and thesis concentration on learning and emotional difficulties in school and clinical settings

Skin misfolded protein-seeding activity as a diagnostic biomarker for neurodegenerative diseases

W.Q. Zou

Institute of Neurology, Jiangxi Academy of Clinical Medical Sciences, The First Affiliated Hospital of Nanchang University, China

Parkinson's disease (PD) and Alzheimer's disease (AD) are the two most common neurodegenerative diseases that have recently been proposed to share the pathogenic mechanism similar to that of prion diseases (PrD) associated with an infectious prion protein (PrP^{Sc}). Their definitive diagnosis mainly relies on the examination of the pathologically misfolded α-synuclein ($α\text{-}Syn^P$) containing Lewy bodies, amyloid β (Aβ) plaque and phosphorylated tau tangles, or PrP^{Sc} aggregates in the brain. By using ultrasensitive amplification assays with real-time quaking-induced conversion (RT-QuIC) and protein misfolding cyclic amplification (PMCA) technologies, we recently reported for the first time that the seeding activity of the skin PrP^{Sc} or $α\text{-}Syn^P$ (PrP^{Sc}- or $α\text{-}Syn^P$-SA) could be a biomarker for diagnosis of prion diseases or PD. Our new study also revealed that similar to brain tissues, skin tissues of patients with AD and other tauopathies showed detectable seeding activity of misfolded tau by RT-QuIC assay. Our studies provided evidence that prion-like seeding activity of misfolded proteins including PrP^{Sc}, $α\text{-}Syn^P$ and tau can be detectable in the skin tissues of different neurodegenerative diseases. The seeding activity of these prion-like misfolded proteins could serve as a diagnostic biomarker across neurodegenerative diseases.

Biography

Dr. Wenquan Zou is a Distinguished Professor, founding Director of the Institute of Neurology, Executive Dean of Jiangxi Academy of Clinical Medical Sciences of the First Affiliated Hospital of Nanchang University, Nanchang, Jiangxi Province, China. Before joining Nanchang University in December 2022, Dr. Zou was a tenured Professor of Departments of Pathology and Neurology, and Associate Director of National Prion Disease Pathology Surveillance Center, Case Western Reserve University School of Medicine, Cleveland, Ohio, USA. Dr. Zou's research focus is in the area of prion disease and other neurodegenerative diseases such as Alzheimer's disease and Parkinson's disease. Currently, the Zou laboratory is developing skin-based early diagnostic biomarkers with ultrasensitive seed-amplification assays for prion disease, Parkinson's disease, Alzheimer's disease and other neurodegenerative diseases. His lab is also studying the pathogenic mechanism of neurodegenerative diseases using animal and cell models.

Implications of neuroscience driven architecture (Application on children's learning environments

Dina Ezzat, Shaimaa Kamel and **Laila Khodeir**

Ain Shams University, Egypt

The rational core of the interdisciplinary field of neuroarchitecture is to acknowledge the recent neuroscientific discoveries, about the mysteries of the human brain's interaction with his surrounding environment; with the aim of creating sensory environments that promote all kinds of human well-being. One of these neuroscience's provocative findings is the influence the built environment has on children's brains cognitive functions, and development. In parallel, Conventional diligences in the field of learning environments design had Longley envisioned the impact of architecture on children's performance, generally in the form of deductive perceptions; unaware of the pivotal discoveries in neuroscientific research. And while the research dedicated to the neuroarchitecture of these specific environments, where children develop and flourish, has to be up to that pivotal mission; there is a clear lack of collaborative research between neuroscientists, psychologists, and architects to be able to generalize cross-validated standard principles. The envisioned aim of this research was to exploit the robust findings related to the human brain in exploring the impact of the physical learning environment on children; along with a thorough focus on the developmental sensitive periods of children, where there is a greater sensitivity to environmental stimulus. This research achieved progress through an authentic experiment, carried out to assess the effect the different design decisions have on children's physiological and psychological states. In particular, by reflecting on a children sample examining different architectural alternatives through virtual reality, while their physiological and emotional states were monitored (heart rate variances and emotional response). The results shed light on the potentials found in the involvement of the interdisciplinary measures in assisting the architectural design.

The far aim of this on-going research is the creation of science-based design framework of learning environments that is able to foster children's learning experience and stimulate superior nurturing of their development.

Biography

Dina Ezzat, Teacher Assistant at Ain Shams University, has been graduated from Ain Shams University in 2017, obtained her master's degree in 2022. Her master's degree focused on "Neuroscience driven Architecture", namely "Tuning Neuroarchitecture with the design of educational facilities". She is currently a PhD candidate at Ain Shams University and is pursuing a mobilization internship at the Research Centre for Mind, Brain, and Behaviour at UGR, as part of her interdisciplinary doctoral research scope. She has participated in the design of multiple projects within private firms.

Binary fellowship – surgical training in the endovascular and neurovascular areas

Adina Bogdan[1,2] and **Aurel George Mohan**[1,2]

[1]*Emergency County Hospital, Romania*
[2]*University of Oradea, Faculty of Medicine and Pharmacy, PhD School*

Objective: To recognize high level training of surgeons in the endovascular and neurovascular areas in the 21st century.

Scope: To benefit the patients, hospital and the unit.

To suggest in the syllabus, the necessity of continuing education and training which may include an interventional radiology rotation for neurovascular fellowship. This will improve the relations between the surgeons and radiologists leading to higher quality patient care.

Results: The binary training has shown a growing interest among fellows throughout Europe.

Patients may benefit of a minimal invasive treatment, better interdisciplinary relationship and skill set developed.

Additional benefits: acquisition of radiology terminology, usage of artificial intelligence computers, working on two different hospital wards plus additional hands-on experience in both fields.

Method: As mention above.

Conclusion: The acquisition of additional skills is a win-win for everyone: patient, surgeon, radiologist and hospital.

Biography

The presenter, Adina Bogdan is a graduate of University of Oradea, School of Medicine. She has worked in the UK for 2 years in the neurosurgical department of University Hospital of North Midlands Stoke-on-trent, UK. Relocated to Romania continuing her 5th year of neurosurgical residency and has enrolled in the PhD program. Among her interests includes: research, advance methods of diagnosing neurological diseases and abnormalities.

The effect of tibialis anterior weakness on foot drop and toe clearance in patients with facioscapulohumeral dystrophy

C.N. Gambelli[1,2,3], J. Bredin[2,4], A.-C.M. Doix[2], J. Garcia e, V. Tanant[5], M. Fournier-Mehouas[2,5], C. Desnuelle[6], S. Sacconi[5,7] and S.S. Colson[2]

[1]Physical Activity, Sport and Recreation Research Focus Area (PhASRec), Potchefstroom Campus, North-West University (NWU), South Africa
[2]Universite Cote d'Azur, LAMHESS, France
[3]Laboratory of Physiology and Biomechanics of Locomotion, Institute of Neuroscience (IoNS), Universite catholique de Louvain (UCL), Louvain-la-Neuve, Belgium
[4]Centre de Sant´e Institut Rossetti-PEP06, France
[5]Universite Cote d'Azur, France
[6]Universite Cote d'Azur, CNRS, France
[7]Universite Cote d'Azur, CHU, CNRS, France

Background: Facioscapulohumeral dystrophy is a genetic disease characterized by progressive muscle weakness leading to a complex combination of postural instability, foot drop during swing and compensatory strategies during gait that have been related to an increased risk of falling. The aim is to assess the effect of tibialis anterior muscle weakness on foot drop and minimum toe clearance of patients with facioscapulohumeral dystrophy during gait.

Methods: Eight patients allocated to a subgroup depending on the severity of tibialis anterior muscle weakness, assessed by manual muscle testing (i.e., severe and mild weakness), and eight matched control participants underwent gait analysis at self-selected walking speeds.

Findings: Walking speed, for all facioscapulohumeral dystrophy patients, and step length, for patients with severe weakness only, were significantly decreased compared to control participants. Minimum toe clearance was similar across all groups, but its variability was increased only for patients with severe weakness. A greater foot drop was systematically observed for patients with severe weakness during swing and only in late swing for patients with mild weakness. Individual strategies to compensate for foot drop remain unclear and may depend on other muscle impairment variability.

Interpretation: Although all patients were able to control the average height of their foot trajectory during swing, patients with severe tibialis anterior muscle weakness exhibited increased foot drop and minimum toe clearance variability. Manual muscle testing is a simple, cheap and effective method to assess tibialis anterior muscle weakness and seems promising to identify facioscapulohumeral dystrophy patients with an increased risk of tripping.

Biography

I am currently Senior Lecturer in the School of Human Movement Science at North-West University (South Africa). I obtained my PhD in 2016 in the field of biomechanics and motor control of human movement in the Laboratory of Physiology and Biomechanics of Locomotion at Universite catholique de Louvain (Belgium). I am a French citizen and obtained my Bachelor and Master degree in the Faculty of Sport Science at Universite Cote d'Azur (France).

I am expert in the motor control of landing from jumps and in pathological gait analysis. I will present results of research on the assessment of the risk of tripping during gait in patients with facioscapulohumeral dystrophy.

Compensation of flow in patients with significant carotid stenosis & occlusion – principal predictor of stroke

Elwertowski M, Kaszczewski P, LeszczynskiJ, Ostrowski T and **Gałązka Z**
Department of General, Endocrine and Vascular Surgery, Medical University of Warsaw, Poland

One of principal questions in brain pathophysiology is why patients with severe carotid stenosis and occlusion behave so differently in terms of clinical conditions. Apart from flow alterations in affected vessels there are several factors contributing to their outcome: overall clinical status, age, sex, existence and flow in collateral vessels.

Cerebral Blood Flow (CBF) decreases with age, with significant acceleration after 70-75 years old. Based on Doppler assessment of CBF in 123 healthy volunteers over 65 years old the reference values were proposed for different age groups: 898.5 +/-119.1 for 65-69y, 838.5 +/- 148.9 for70-74y, 805.1 +/-99.3for75-80y and 685.7 +/-112.3 ml/min for +80y respectively. Further study was performed on group of 154 patients – 66 with 50-69% stenosis, 53 -70-99% stenosis and 35 with carotid artery occlusions. Decreased blood flow was observed in +/- 20% in all groups, unchanged flow in 51,5% of patients with medium stenosis 50-69% and 32,1%/45,7% in groups with severe stenosis and carotid occlusions. Contrary increase of CBF was observed in 28,8% cases of medium stenosis, 49% of patients with 70-99% narrowing and 34,3% with carotid occlusions. The main finding of our study is identifying that changes in CBF correlate with the incidence of ischemic symptoms in patients with ICA stenosis. The percentage patients with flow compensation tend to increase with the severity of stenosis, and slightly decreases in the occlusion group. What is prominent, in the group referred for surgical treatment (symptomatic, +70%ICA stenosis) the percentage of patients with flow compensation is twice as low as in the asymptomatic ones with similar degree of the ICA stenosis. In group with uni-or bilateral ICA occlusion lack of compensation determined increased risk of death.

The assessment of global cerebral inflow in Doppler ultrasonography may provide novel and easily accessible tool of identifying patients prone to cerebral ischemia.

Biography

Michal Elwertowski MD. I am working in diagnostic ultrasound since graduation from medical Faculty (1979), performing Doppler studies since 1985, carotid Doppler since 1989, working as consultant for Surgery Departments of Medical University of Warsaw for most of my life. Since over 20 years I am head of Doppler training for Polish Ultrasound Society, being since 1997 member of the Board of this Society. Ultrasound is my exclusive professional occupation since 1984, altogether I performed personally 350-400 thousands of US examinations, out of them 25-30 thousands were carotid Doppler studies. Together with DR Kaszczewski we formed a team investigating clinical problems related with alterations of intracerebral flow volume and its impact on patient's diagnosis & treatment.

Real-Life Daily Functional Markers of Mild Cognitive Impairment (MCI) in People with Parkinson's Disease (PD)

Sara Rosenblum[1] and **Sharon Hassin-Baer[2]**
[1]*Department of Occupational Therapy, University of Haifa, Israel*
[2]*Movement Disorders Institute, Israel; Department of Neurology, Sheba Medical Centre, Israel*
Sackler Faculty of Medicine, Tel Aviv University, Israel

Our four studies, that represent interdisciplinary research, merging occupational therapy with neurological Movement Disorders approaches, addressed identifying early PD-MCI through gradual cognitive decline. They included 78 patients diagnosed with PD-MCI, 34 of whom participated in a 1-year longitudinal study.

In our first study, suspected PD-MCI according to the MDS Level I criteria (global cognitive decline-MoCA) did not correspond well with the Level II criteria (cognitive decline-neuropsychological tests). A high percentage of participants with low MoCA scores obtained neuropsychological test scores within the normal range; a notable number with high MoCA scores were identified with MCI-level scores on neuropsychological tests. However, significant medium correlations were found between participant scores on three standardized questionnaires of perceived general cognitive functional (PGF) abilities. Thus, in our second study we sought a practical measure of cognitive functional (CF) decline. Using the MDS-UPDRS, we suggested a CF feature (including cognitive decline, speech, eating, dressing, hygiene, handwriting, doing hobbies items), and divided the participants into two groups: suspected ($n = 25$) and not suspected ($n = 53$) for MCI. Significant group differences were found in their PGF scores.

Our third study showed significant group differences in additional PGF scores and pen-stroke width (PSW) while writing and significant correlations between PGF scores, PSW, and CF features. Regression analysis revealed that PGF scores and mean- PSW accounted for 28% of their CF features.

In our fourth longitudinal study, the baseline UPDRS-CF feature and PGF scores significantly correlated with the 1-year scores. Hierarchical regression revealed that the initial MoCA, TMT, and BDI (depression) scores predicted the second UPDRS-CF score; baseline UPDRS-CF predicted 31% of the second (PD-CFRS) score variance, while BDI moderated the relationship between them. These results emphasize the importance of perceived daily functional markers for capturing gradual cognitive decline in PD patients.

Biography

I am a full professor and head of the laboratory of Complex Human Activity and Participation (CHAP), with special interest in the characteristics of human daily function.

I aim to gain better insight into interactions between varied body functions (e.g., cognitive, motor, sensory), activity performance and participation abilities of people faced with functional deficits in everyday life. A main emphasis is placed on trying to identify people's daily functional trivial needs in order to develop standardized evaluation tools to capture it as well as intervention methods for better health and well -being. My studies are focusing on varied populations which need support in order to maximize their daily functional effectives for better health as aging population and those who are facing with Neurodevelopmental and Neurological diseases. More than 60 MA and PhD students conducted their studies at the CHAP laboratory under my supervision. Hundred and forty papers were published in high rank quality peer-reviewed journals. Grants achieved for about 3.000.000 Nis.
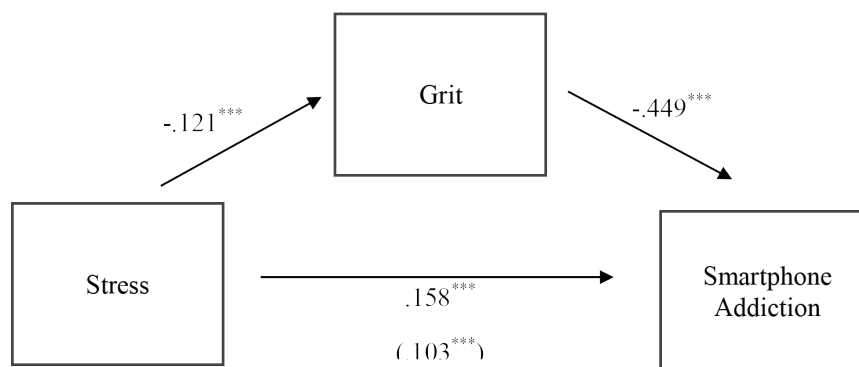
The relationship between daily stress and smartphone addiction among South Korean adolescents

Chaeyoon Kim and **Keumjoo Kwak**

Seoul National University, South Korea

Smartphone usage has notably increased over the past decade. Although smartphones provide convenience to everyday life, excessive use and over-dependence on them can lead to smartphone addiction. The purpose of this study was to investigate the mediating effect of grit on the relationship between stress and smartphone addiction among adolescents. Participants were 605 Korean students from age 12 to 16 (mean age = 13.97 years). Stress was assessed using the Daily Hassles Scales for Children in Korea developed by Han and Yoo (1995). Grit was measured by the Korean translated version of the Original Grit Scale (Duckworth et al., 2007; Park et al., 2020), and smartphone addiction was measured by using the Smartphone Addiction Proneness Scale for Youth developed by the National Information Society Agency (2011). The mediating effect was analyzed by using PROCESS macro version 3.5, and bootstrapping was conducted to test the significance of the mediating effect. The results showed that adolescent's stress and grit significantly influenced smartphone addiction. Also, grit partially mediated the relationship between stress and smartphone addiction. This means that high levels of stress reduced grit, which in turn increased smartphone addiction proneness among adolescents. The results are summarized in Figure 1. In addition, two factors of grit (consistency of interest and perseverance of effort) both mediated the association between stress and smartphone addiction (see Table 1). The current study is meaningful in that it is the first study to empirically investigate adolescent's grit in relation to stress and smartphone addiction. By exploring grit in relation to smartphone addiction, our study contributed to a growing body of literature that highlighted the protective function of grit against maladaptive behaviors (Brozikowsky & Bernhardt, 2018; Griffin et al., 2016; Guerrero et al., 2016; Knauft et al., 2019).

$^{***}p < .001$

Figure 1. Mediation Model for Stress, Grit, and Smartphone Addiction

Table 1. Mediating Effect of Consistency of Interest and Perseverance of Effort in the Relationship between Stress and Smartphone Addiction

Path	β	se	t	p	LLCI	ULCI
Stress → Consistency of Interest	-.052	.009	-5.850	.0000	-.096	-.034
Consistency of Interest → Smartphone addiction	-.598	.076	-7.833	.0000	-.748	-.448
Stress → Smartphone addiction	.130	.017	7.851	.0000	.098	.163
Stress → Consistency of Interest → Smartphone addiction	.161	.017	9.513	.0000	.128	.194
Stress → Perseverance of Effort	-.073	.010	-7.941	.0000	-.092	-.055
Perseverance of Effort → Smartphone addiction	-.486	.075	-6.528	.0000	-.632	-.340
Stress → Smartphone addiction	.123	.017	7.133	.0000	.089	.157
Stress → Perseverance of	.159	.017	9.357	.0000	.125	.192
Effort → Smartphone addiction						

Note. LLCI = lower limit confidence interval, ULCI = upper limit confidence interval

Biography

Dr. Keumjoo Kwak is a well-known developmental psychologist in South Korea. Her research focuses on the cognitive, emotional, social development from infancy to adolescence. She is also interested in longitudinal study on various aspects of children's development such as executive function, social ability, emotional regulation, and more. She is currently a professor of department of psychology at Seoul National University.

# The effect of group psychomotor therapy on behavior problems in children 4-5 years of age

G. Moschos and **E. Pollatou**

School of Physical Education and Sport Science Dietetics
University of Thessaly, Greece

Group Psychomotor Therapy (GPT) is prescribed for children with behavior problems. The purpose of the study was to examine the effect of a GPT on behavior problems (BP) of children 4-5 years old. In the survey participated 58 children aged 47-59 months, attending Municipal Day Care Centers of Ioannina, Greece. The sample was assigned to the Experimental Group (EG) who participated in the GPT program and Control Group (CG) who did not participate in any intervention program. The behavior problems were determined by the Psychosocial Test Adjustment, which has 35 questions and consisted of 3 dimensions: interpersonal adjustment, intrapersonal adjustment and hyperactivity/concentration difficulties. According to the results, children of the EG presented higher improvement on BP compared to those of the CG. In particular, improvement in the EG after the PIP was found for hyperactivity/concentration ($F_{1,56}=17.91$, p<.001), intrapersonal adjustment ($F_{1,56}=17.04$, p<.001), interpersonal adjustment ($F_{1,56}=11.12$, p<.001) and for the total factor of behavior problems ($F_{1,56}=18.07$, p<.001), while in the CG, the scores remained at the same levels. The results confirm that GPT affects emotional profile but also the reduction of behavior problems. It is important to include GPT in the prescription-procedure within the Greek Health System, to provide additional support in traditional methods and treatments.

Figure 1. Means and standard deviations of the children's pre- and post-measurement scores.
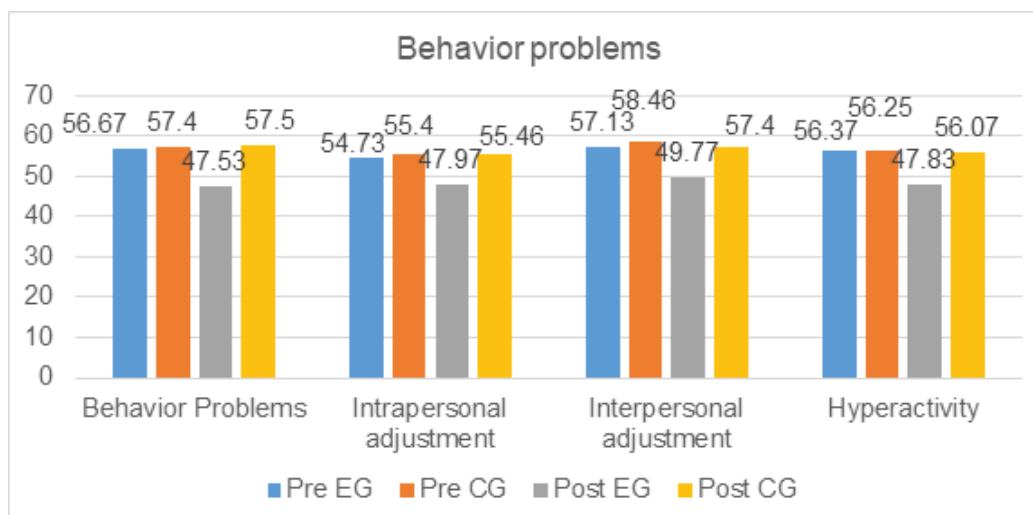
Biography

I am a highly motivated and hardworking individual who have completed my studies in the Democritus University of Thrace in School of Physical Education & Sports Science with specialization in Adapted Physical Education. In addition, I continued my studies with Master Program "Exercise and Quality of Life" in the Democritus University of Thrace in School of Physical Education & Sports Science. My thesis studied motor development and psychomotor adaptation in the school environment and the impact of the psychomotor program. Also, I continue my studies with Doctor of Philosophy of the School of Physical Education & Sports Science at University of Thessaly. My science Specialization: Pedagogical and Creative Learning. My Doctoral Thesis is "The effect of a Psychomotor Intervention Program on social, school, emotional competence and behavior problems in boys and girls 4-5 years of age". I have given several presentations on study topics and demonstrations on different lessons.

Efficacy of Greater occipital nerve pulsed radiofrequency ablation in management of refractory migraine with occipital neuralgia

N. Bharti and **P. Negi**

Department of Anaesthesia and Intensive Care, PGIMER, India

Background and objectives: Occipital neuralgia is a condition manifested by chronic occipital headaches and is thought to be caused by irritation or trauma to the greater occipital nerve (GON). Pulsed radiofrequency ablation (PRFA) has been found to be effective in various chronic pain conditions. This prospective randomized double-blind study was conducted to compare the effectiveness of Ultrasound-guided GON block with PRFA in patients of refractory migraine with occipital neuralgia.

Methodology: After ethical committee approval 30 patients of chronic refractory migraine with occipital neuralgia were included. The patients were randomly allocated into two groups: group 1 patients received greater occipital nerve block with bupivacaine 2.5 ml and group 2 patients received PRFA of greater occipital nerve for 3 cycles of 120 s. Patients were assessed every month for 3 months for reduction in severity of pain by numerical rating scale (NRS) and total pain index (TPI). The responders were defined as at least a 50% reduction in severity of pain. The reduction in consumption of analgesic medication was assessed by Medication quantification score (MQS). The improvement in migraine associated disability was assessed using migraine disability assessment questionnaire (MIDAS). Likert scale was used to assess patients' satisfaction.

Results: Age, sex, height, and weight were comparable between the groups. NRS and TPI were significantly lower at 2 months and 3 months in PRFA group (P<0.05). Percentage change in NRS and TPI was also significantly lower in PRFA group at 3 months. NSAIDs intake was significantly higher in GON block (P<0.05). MQS was significantly lower at 2 months and 3 months (P<0.05), while MIDAS was significantly lower in PRFA group in comparison to GON block at 3 months.

Conclusion: The present study found that PRFA is superior to GON block for the management of refractory migraine associated with occipital neuralgia.

Biography

I am working as anesthesiologist and pain physician in a tertiary care hospital and PostGraduate Institute of Medical Education and Research (PGIMER) center at Chandigarh, Delhi for past 20 years. My area of interest are chronic pain management and cancer pain management. I have many research papers and projects in this field. I have also presented many papers in various international conferences and participated in workshops.

Neural underpinnings of default mode network on empathy revealed by intracranial stereoelectroencephalography

Chao Zhang[1,2], Jiajie Mo[1,2] and **Kai Zhang[1,2]**

[1]Department of Neurosurgery, Beijing Tiantan Hospital, Capital Medical University, China
[2]Department of Functional Neurosurgery, Beijing Neurosurgical Institute,
Capital Medical University, China

Background: Empathy is the ability to understand and share the feelings of others. It is fundamental to emotional intelligence and social iterations. Neuroimaging studies have demonstrated that empathy activates brain regions associated with the social cognition network.

Aim: To explore the neural underpinnings of empathy revealed by stereoelectroencephalography utilizing recurrence quantification analysis (RQA).

Methods: This retrospective cohort included 38 epilepsy patients with stereoelectroencephalography implantation. RQA metrics were applied to parameterize the network organization of default mode network (DMN) brain regions. The relationships between DMN, seizure burden activity, and empathy, as measured using the Interpersonal Reactivity Index, were examined using partial least-square regression and mediation analysis.

Results: RQA metrics with DMN (R^2 = 0.75, P Bonferroni < 0.001) and its subsystems (medial temporal subsystem: R^2 = 0.53, P Bonferroni < 0.001; core subsystem: R^2 = 0.70, P Bonferroni < 0.001; dorsal medial subsystem: R^2 = 0.48, P Bonferroni < 0.001) were positively correlated with empathy scores. Of 13 RQA metrics, the mean diagonal line length, entropy of the diagonal line lengths, trapping time, maximal vertical line length, and recurrence time of second type were found to be statistically higher in patient cohorts with reportedly high empathy. Furthermore, DMN characteristics (b path: F = 3.69, P = 0.04), rather than seizure burdens (direct effect: t = 0.33, P = 0.74, c_0 = À 0.007), mediated empathy status. Conclusion: The present study used various RQA metrics to parameterize the network organization of DMN and determine the neural underpinning of DMN for empathy modulation.

Biography

Chao Zhang has long been engaged in clinical and scientific research in epilepsy and functional neurosurgery. He is good at epilepsy surgery based on symptomatology, preoperative evaluation, and surgical treatment related to imaging and EEG post-processing. He is now focusing on neuroscience-related research based on the intracranial electrophysiology platform.

Pentoxifylline as add-on treatment to donepezil in copper sulphate-induced Alzheimer's disease-like neurodegeneration in rats

Mohamed M Elseweidy[1], Mohamed Mahrous[2], Sousou I Ali[1], Mohamed A. Shaheen[3] and **Nahla N. Younis[1]**

[1]Department of Biochemistry, Faculty of Pharmacy, Zagazig University, Zagazig, Egypt
[2]Department of Biochemistry, Faculty of Pharmacy, Port-Said University, Egypt
[3]Department of Histology and Cell Biology, Faculty of Human Medicine, Zagazig University, Egypt

Alzheimer's disease (AD), the most common neurodegenerative disorder, is characterized by behavioral, cognitive and progressive memory impairments. Extensive neuronal loss, extracellular accumulation of insoluble senile amyloid-β (Aβ) plaques and intracellular neurofibrillary tangles (NFTs) are the major pathological features. The present study aimed to investigate the therapeutic effect of donepezil (DON) and pentoxifylline (PTX) in combination to combat the neurodegenerative disorders (Experimental AD) induced by $CuSO_4$ intake in experimental rats. Thirty adult male Wistar rats (140–160 g) were used in this study. AD was first induced in rats by $CuSO_4$ supplement to drinking water (10mg/L) for 14 weeks. AD group received no further treatment. Oral treatment with DON (10mg/kg/day), PTX (100mg/kg/day) or DON+PTX for the other three groups respectively was started from the 10th week of $CuSO_4$ intake for four weeks. Cortex markers like acetylcholine (Ach), acetylcholinesterase (AChE), total antioxidant capacity (TAC) and malondialdehyde (MDA) and hippocampus markers like β-amyloid precursor protein cleaving enzyme 1 (BACE1), phosphorylated Tau (p-tau), Clusterin (CLU), tumor necrosis factor-α (TNF-α), caspase-9 (CAS-9), Bax and Bcl-2 were measured. The histopathology studies were done by using hematoxylin and eosin and congo red stains as well as immunohistochemistry for neurofilament. $CuSO_4$ induced adverse histological and biochemical changes. The histological injury in hippocampus was inhibited following administration of the DON and PTX. The brain tissue levels of AChE, MDA, BACE1, p-tau, CLU, CAS-9, Bax and TNF-α were significantly increased, while brain tissue levels of Ach, TAC and Bcl-2 were significantly decreased in CuSO4-treated rats as compared with untreated control group. The effects induced by either DON or PTX on most studied parameters were comparable. Combined treatment of DON and PTX induced remarkable results compared with their individual use.

A deep learning approach to predicting stages of Alzheimer's Dementia based on ATN Framework

Samuel Danso

University of Edinburgh Medical School, UK

Despite the high incidence of Alzheimer's disease (AD), there is no cure for AD yet. Therefore, early identification of individuals at higher risk of developing AD remains critical, as this may provide a window of opportunity to adopt lifestyle changes to prevent or delay the onset of the disease. In this talk, I will propose a novel approach to developing prediction models using Feed forward Deep Neural Networks for Deep Learning (DL). I will demonstrate the usefulness of this approach using the European Prevention of Alzheimer's Dementia (EPAD LCS v.IMI) dataset and the ATN classification framework. The proposed model outperforms classic ML model by F1 score of 14% and AUC score of 13%. I will further explore the interactions between the risk factors responsible for the performance of the best model, which makes it a useful framework for building screening model to predict dementia risk at early stage of the disease.

Biography

Dr. Samuel Danso is an Honorary Academic Fellow in applied Artificial Intelligence (AI) at the Centre for Clinical Brain Sciences of the University of Edinburgh. He is holds a fellowship at the Information Commissioner's Office of the United Kingdom (UK), leading research privacy of AI models to shape policy on use of AI technologies to drive the UK economy. His research interest is in application of AI and Big Data technologies to Brain Health research with particular focus on dementia and healthy aging. He is also interested in the interaction between privacy of AI models within the context of Explainable AI and data protection. Dr Danso is also involved in teaching and supervision of MSc and PhD student projects, and a reviewer for numerous academic journals.

Alzheimer's disease: From basic mechanisms to development of therapeutics

Cheng-Xin Gong

Professor and Head, Laboratory of Brain Metabolism Head, Alzheimer's Disease Research Groups, New York State Institute for Basic Research in Developmental Disabilities, USA

Alzheimer's disease (AD) is a devastating neurodegenerative disease that affects more than five million people in the US alone. Despite enormous effort on research and drug development in the last three decades, no effective disease-modifying therapeutics for AD have been developed. Out-of-the-box thinking and novel strategies are needed for the success of AD drug development. We recently proposed a multifactual mechanism of AD, which warrants a new strategy toward multi-targets for developing AD therapeutics. We tested several approaches in preclinical studies on the basis of this strategy. This new AD hypothesis and some of the preclinical studies will be presented in this talk.

Biography

Cheng-Xin Gong, M.D., received his medical education at Hubei Medical College at Xianning and postgraduate studies in biochemistry at Tongji Medical University, China. He is currently a tenured Professor and Head of the Laboratory of Brain Metabolism, as well as Head of the Alzheimer's Disease Research Groups at the New York State Institute for Basic Research in Developmental Disabilities, New York. He also serves as an Adjunct Professor in Neuroscience at the Graduate Center of the City University of New York. Dr. Gong is a neuroscientist working on the basic and translational research on Alzheimer's disease and related neurodegeneration. He has published more than 200 research articles in the field of neurodegeneration and related neuroscience areas and achieved an h-index of 79. He serves in the editorial boards of over 20 biomedical journals.

SCIENTIFIC ABSTRACTS

DAY 2

4th International Congress on

Future Neurology and Advances in Research and Treatment of Brain Disorders

June 26-27, 2023 | Paris, France

FUTURE NEUROLOGY 2023

Intravenous thrombolysis and reperfusion therapies above 4.5 h in acute ischemic stroke

Andrés Ricaurte-Fajardo

Weill Cornell Medicine/NewYork Presbyterian Hospital, USA

Introduction: Ischemic stroke represents a high cost and a significant burden of morbidity and mortality among general population. The different strategies for its treatment are the early initiation of anti-platelet therapy, admission to a neurological critical care unit, intravenous thrombolysis, and endovascular therapy.

Objectives: To review the best recent available evidence about new advances in reperfusion therapies and their impact on clinical practice.

Results: With the recent advances in mechanical thrombectomy, the time range has significantly expanded to offer a timely intervention to a greater number of patients, however, in recent years it has been sought to further expand this window to perform intravenous thrombolysis above the classically standard 4.5 h window.

Conclusions: Recent evidence points towards the extension of the standard window, from the use of images with techniques such as perfusion by tomography or resonance, in order to increase the number of patients who benefit from these interventions (thrombolysis and thrombectomy) and reduce the morbidity and mortality associated with the disease.

Biography

Dr. Ricaurte Fajardo is currently a Postdoctoral Fellow in Molecular Imaging and Therapeutics at Weill Cornell Medicine/NewYork Presbyterian Hospital in New York City. He graduated from medical school at Pontificia Universidad Javeriana in Bogota, Colombia and after completing his medical training he worked at Fundacion Santa Fe de Bogota's neurology department and as researcher for Pontificia Universidad Javeriana, Cali. His main interest are health equity, vascular neurology and neurological care for underserved populations.

PEERS ALLEY
M E D I A

Reversible Cerebral Vasoconstriction Syndrome: A clinical and therapeutic challenge

Nathalia Melo González[1], Laura Rodríguez Suarez[2] and Andrés Ricaurte Fajardo[3]

[1]*Universidad Pontificia Javeriana, Bogotá, Colombia*
[2]*Universidad Militar Nueva Granada, Bogotá, Colombia*
[3]*Weill Cornell Medicine/New York Presbyterian Hospital, USA*

Introduction: Reversible cerebral vasoconstriction syndrome (RCVS) is a rare is a clinical-radiological disease typically characterized by thunderclap headache and intracranial segmental vasoconstriction with a variable course that usually resolves within three months and requires extensive study to prevent complications and recurrences.

Methodology: A search was carried out in PubMed, EMBASE, LILACS, and IBECS. Studies that fulfilled the criteria included: articles that describe the symptoms, diagnosis, and treatment of RCVS between 2012 and 2022.

Objectives: To describe the main characteristics, radiological findings, etiologies, and the clinical course of patients with RCVS and to present the newly advances in its approach.

Results: The initial search retrieved 509 studies, 126 full-text articles were peer-reviewed, 40 and 28 articles were describing 45 subjects were included. RCVS is most frequent in female and the majority of case reports are in the US. Thunderclap headache is the main symptom, it can present with variable neurological deficit and subarachnoid hemorrhage. The main course of treatment included calcium channel blockers and is characterized by being multi-etiological, both the cause and the specific symptoms must be treated to reduce the chance of complications and recurrence.

Conclusions: The timely identification of the RCVS and its etiology is the cornerstone of success in managing the disease. New data must be generated to have more efficient resources for the approach to this disease.

Biography

Nathalia Melo Gonzalez, currently a fourth-year medical student at the Pontificia Universidad Javeriana in Bogota, Colombia. Member of several interest groups and has volunteered in various medical programs concerning low income communities. Her main interests are neuroscience, vascular neurology, and public health, particularly access to medical services in Latin American Countries.

The sensitivity of sniffer dogs for diagnosis of Parkinson's Disease: A diagnostic accuracy study

Chang-Qing Gao and **Ji-Feng Guo**
Xiang-Ya Hospital, China

Background: The diagnostic criteria for Parkinson's disease (PD) remain complex, which is especially problematic for non-movement disorder experts. A test is required to establish a diagnosis of PD with improved accuracy and reproducibility.

Objective: The study aimed to investigate the sensitivity and specificity of tests using sniffer dogs to diagnose Parkinson's Disease.

Methods: A prospective, diagnostic case-control study was conducted in four tertiary medical centers in China to evaluate the accuracy of sniffer dogs to distinguish between 109 clinically established medicated PD patients and 654 non-PD subjects, 37 drug naïve PD patients and 185 non-PD controls. The primary outcomes were sensitivity and specificity of sniffer dog's identification.

Results: In the study with medicated patients, when 2 or all 3 sniffer dogs yielded positive detection result in a sample tested, the index test sensitivity, specificity, positive and negative likelihood ratio were 91% (95% CI: 84%, 96%), 95% (95% CI:93%, 97%), 19.16 (95% CI:13.52 to 27.16) and 0.10 (95% CI:0.05 to 0.17), respectively. The corresponding sensitivity, specificity, positive and negative likelihood ratio in drug-naïve patients were 89% (95% CI:75%, 96%), 86% (95% CI: 81%, 91%), 6.6 (95% CI:4.51 to 9.66), and 0.13 (95% CI: 0.05 to 0.32), respectively.

Conclusions: Tests using sniffer dogs may be a useful, non-invasive, fast and cost-effective method, to identify PD patients in community screening and health prevention checkups, as well as in neurological practice.

Biography

Graduated from Hunan Medical University (now called Xiang Ya School of Medicine of Central South University) in 1985, Changsha, China, and worked as physician in Xuan Wu Hospital of Capital University of Medical Sciences, Beijing, China, for 8 years. I obtained my PhD in 2004 from Ghent University, Ghent, Belgium, later worked in UCB Pharma, Brussels, Belgium. I came back to Xiang Ya in 2008 and have been working here as director of centers for animal research till now.

Reversible posterior encephalopathy syndrome (PRES): A case report

S. Ketata and **O. Terkaouchi**

Department of Anesthesiology and Critical Care
Habib Bourguiba hospital, Tunisia

Reversible posterior encephalopathy syndrome (PRES) is a rare clinico-radiological syndrome. Diagnosis is suspected in pregnant women suffering from eclampsia when brain CT scan shows radiological images suggestive of this disease. We report here the case of a 25-year-old pregnant woman at 33 weeks' gestation with a history of pre- eclampsia presenting with convulsive seizures and high blood pressure following cesarean section. The patient was admitted to the Intensive Care Unit; clinical and radiological investigations revealed PRES syndrome.

The control of hypertension is the most important part of the treatment. The clinical course was favorable after control of blood pressure by appropriate treatment and anticonvulsant therapy. Reversible posterior encephalopathy syndrome is a neurological manifestation rarely occurring in patients with pre-eclampsia, but it is not exceptional; then diagnosis should be suspected in patients with neurological signs. Brain MRI is the best diagnostic tool(figure 1).
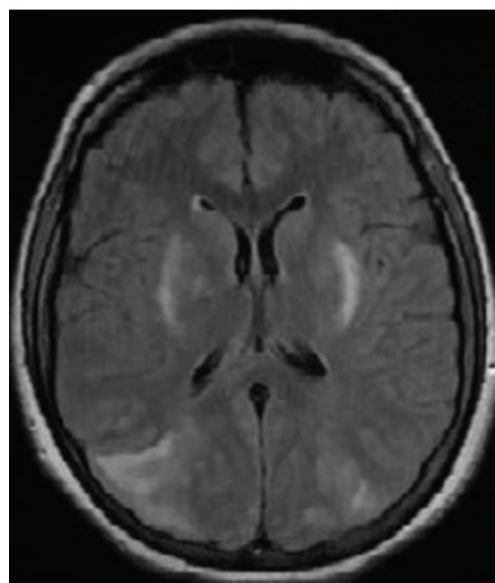

Figure 1: T2 flair MRI brain slice : T2 hypersignal predominantly on the right side of the parieto-occipital cortex)

Dahlmann-Body-Analysis: A new anthropometric model for body composition estimation in the assessment of metabolic risk factors

Nicolaus Dahlmann[1] and **Dietrich Klingmüller[2]**

[1]*Institut für Klinische Chemie, Universitätsklinikum Schleswig-Holstein, Germany*
[2]*Endokrinologie, Diabetologie und Stoffwechselmedizin, Universitätsklinik Bonn, Germany*

The presentation refers to an anthropometric model, named Dahlmann-Body-Analysis (DBA). It is based on the hand circumference as a proxy for skeleton frame and the circumference of the abdomen as a proxy for central obesity. The processed data of the DBA model represent the percentage of fat mass.

The DBA model was compared to data of the Metropolitan Life Insurance Co. to estimate the influence of the skeleton frame on body weight (1) and the results of a Bioelectric-Impedance-Analysis (BIA) device (2). The data revealed a strong concordance and reproducibility between the two data sets.

The availability of a cost-effective tool to detect body fat mass is crucial for the debate that focusses on whether obesity is the unifying feature and cause for the metabolic syndrome (MetS). For that purpose, a study was performed to uncover the underlying mechanisms of MetS pathogenesis comparing metabolic and inflammatory variables with increasing amounts of fat mass.

To our knowledge, it is the first time that biochemical parameters and blood pressure are asso-ciated with increasing amounts of fat mass in human adults. The MetS definition should be thought over with regard to the waist circumference as part of the MetS definition. It is a surrogate for abdominal obesity and should be replaced by measurements of body fat to give reliable information on individuals.

The intention of the whole project is to establish the model as means of body composition to be easily used world-wide, the basic needs are a scale and a string.

The knowledge level of taekwondo coaches regarding physical training methods in Jordan

S. Hammad[1], R. Hammad[2], H. Djemai[3], I.M. Dabayebeh[4] and **S. Ghanima[1]**

[1]Department of Physical and Health Education, Faculty of Educational Sciences, Al-Ahliyya Amman University, Jordan
[2]Département des Sciences de l'activité physique, Faculté des Sciences, Université du Québec à Montréal, Canada
[3]INSERM UMR-S 1124, T3S, Toxicology Pharmacology and Cell Signaling, University of Paris, France
[4]Faculty of Sports Sciences, University of Jordan, Jordan

Objectives: This study aimed to identify the knowledge level of Taekwondo coaches working in Taekwondo centers in Jordan, on the basics of physical training and to provide an easily implementable questionnaire.

Methods: For this study, 179 Taekwondo coaches from both genders voluntarily participated. Descriptive method was used in the survey to suit the nature and objectives of the study. A questionnaire was designed, consisting of 49 multiple choice questions to measure the cognitive outcome of Taekwondo coaches on the fields of physical training, exercise physiology, sports career anatomy, sports nutrition, sports injuries and first aid. We used the statistical analysis effect of guessing, t-test and one-way (ANOVA) were used as statistical methods.

Results: The results showed that the level of knowledge among Taekwondo coaches was within the weak level. The level of the right answers was less than 50% on various areas of the study tool. The general level was 23.69% excluding the effect of guesswork on the areas of knowledge. The results showed that there are statistical indications in the Exercise Physiology method in terms of education level ($p \leq 0.001$), and in the Sports Career Anatomy in term of belts degree ($p \leq 0.001$).

Conclusion: This research shows that the knowledge level of Taekwondo coaches on physical training methods in Jordan was within the limits of the weak level.

Biography

This is Saleh Hammed, a 27-year-old, born in Jordan. Majored in physical education, granted master's in Sports management and coaching, and currently a second year PHD student of Supervision and Instruction in Physical Education. My occupation at the moment is a lecturer in physical education at Al-Ahliyya Amman University, moreover, I am assigned as a member of the board director of Jordan karate federation. Furthermore, I have been a taekwondo coach for around 7 years up until this moment, following to be a 5th DAN. Reaching up to my goals, I share interest in exploring the knowledge level of coaches in sports sectors.

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