



The
ICONIC MEETINGS
....Meet Influential People....

ABSTRACT BOOK

WORLD CONFERENCE ON

Neurology and Brain Disorders

MARCH 12-14

PARIS, FRANCE

2026



Table Of Contents

PLENARY SPEAKERS

- 1 Title: Microaggressions in the Care of Patients with Prolonged Disorders of Consciousness: Implications for Diagnostic Accuracy and Family Involvement

Masako Tokuni, *Ritsumeikan University, Japan*

- 2 Title: Mental Health: Emerging Factors Impacting Wellness and Quality of Life

Tisha Ornstein, *Toronto Metropolitan University, Toronto Canada*

- 3 Title: Evaluating the Accuracy of CTP in Predicting Stroke Core Volume: Correlation with 24-Hour MRI and Implications for Endovascular Mechanical Thrombectomy Eligibility

Paula Eboli, *Torrance Memorial Medical Center, United States*

- 4 Title: The Functionally Divided Brain : Stroke and Di-encephalon in the Humano-murian

Sérend Hipe, *IFPEA, Rue des Saint-Père's, France*

- 5 Title: Hearing modulation affects Alzheimer's disease progression linked to brain inflammation: a study in mouse models

Hyong-Ho Cho, *Chonnam National University Medical School, South Korea*

-
- 6 Title: Cerebral Venous Density, Vascular Risk, and Brain Aging: A Retrospective Exploratory Study of Clinical MRI Data
-

"Bart M. Demaerschalk, *Mayo Clinic College of Medicine and Science, United States*

KEYNOTE SPEAKERS

- 7 Title: When the Mind Plays Tricks: LGI1 Encephalitis Mimicking Psychiatric Illness
-

Akshayaa Kumar Aggarawal, *Walsall Manor Hospital, United Kingdom*

- 8 Title: Therapeutic effect of neural induced-stem cell-derived exosomes via regulating ERK/p38/NF- κ B in a traumatic brain injury
-

Han-Seong Jeong, *Chonnam National University Medical School, South Korea*

- 9 Title: Integrating Traditional Chinese Medicine With Standard Als Therapies: A Real-World Clinical Trial On Disease Progression, Symptom Alleviation, And Quality Of Life
-

Mohammad Nasb, *Hubei Provincial Hospital of Chinese Medicine, China*

- 10 Title: Inhibition of miR-4284 could reduce apoptosis and neuroinflammation by targeting APBA1/JAK1/STAT3 signaling in Alzheimer's disease
-

Sujeong Jang, *Chonnam National University Medical School, South Korea*

- 11 Title: Narcolepsy Emerging After Treatment of Obsessive–Compulsive Disorder: A Two-Case Report Suggesting a Potential Neurobiological Link
-

Amit Kumar, *Mind Diagnostics, Patna, India*

FEATURED SPEAKERS

- 12 Title: Seizures After Single Intravenous Dose of Tramadol for Postsurgical Pain

Arya Babul, *Society for Awareness of Neglected Diseases, United States*

- 13 Title: Inducible formation of fusion transcripts upregulates haploinsufficient CHD2 gene expression

Caroline Ross, *University of Cape Town, South Africa*

- 14 Title: Hydrogen sulphide enhances dendritic arborization and alleviates neuroinflammation to ameliorate cognitive dysfunctions after traumatic brain injury

Farheen Nasir, *Banaras Hindu University, India*

- 15 Title: Unequal Burden of Stroke Across Economic Boundaries: A Comparative Analysis of Disability-Adjusted Life Years from 2000-2021

Sheel Shah, *Barrow Neurological Institute, United States of America*

- 16 Title: Exploring brain function and structure: From the sparse coding of brain functional connectivity to multimodal brain meta-analysis

Fateme Ghayem, *Inria Saclay, MIND Team, 91120 Palaiseau, France*

- 17 Title: Acute Vision loss-An ictal phenomenon

Garvita Agrawal, *Armed forces Medical College, India*

18 Title: Artificial Intelligence-Driven DWI and FLAIR for the Detection of Early Stroke Changes: A Systematic Review

Shari Guerra, *The Medical City, Philippines*

19 Title: Serious Games for Serious Problems: A Randomized Trial of the RETHink Intervention in Youth with Emotional Disorders

Eliza Atudosie, *Babeş-Bolyai University, Romania*

**Masako Tokuni***Ritsumeikan University, Japan*

Microaggressions in the Care of Patients with Prolonged Disorders of Consciousness: Implications for Diagnostic Accuracy and Family Involvement

Abstract

[Background] In the clinical management of Prolonged Disorders of Consciousness (PDOC), diagnostic uncertainty and prognostic ambiguity may influence clinicians' communication, diagnostic reasoning, and decision-making. Subtle and often unintentional behaviors or remarks— conceptualized as microaggressions—can affect patients and families, yet this concept has received little attention in neurological practice.

[Objective] This study aims to reframe microaggressions in PDOC care not as ethical misconduct, but as implicit cognitive biases that may influence diagnostic accuracy, clinical judgment, and family involvement.

[Methods] An exploratory review of international and Japanese literature on PDOC was conducted. In addition, semi-structured interviews were carried out with seven family caregivers of individuals with disorders of consciousness living at home. Interactions with healthcare professionals were analyzed qualitatively.

[Results] Findings revealed recurring patterns in which family observations were unintentionally minimized or reframed as “over-interpretation.” Well-intentioned prognostic explanations sometimes discouraged family members from sharing observations. These interactions may reduce opportunities for behavioral assessment and contribute to biased conditions for CRS-R evaluations, potentially leading to

missed signs of minimal consciousness.

[Conclusion] Addressing microaggressions in PDOC care should not be viewed as blame toward clinicians, but as an effort to improve diagnostic sensitivity and quality of care. Recognizing implicit cognitive biases and appropriately integrating family-provided information may enhance neurological clinical assessment and support patient-centered decision-making in disorders of consciousness.

Biography

Masako Tokuni received her Master of Science in Nursing in 2013 from the University of Phoenix and has been a PhD student at the Graduate School of Sociology, Ritsumeikan University, since 2023. She previously taught nursing at Teikyo University and has worked with patients with disorders of consciousness in the home healthcare field since 2010. Her current research focuses on bridging medicine and social welfare in the care of individuals with prolonged disorders of consciousness.



Tisha Ornstein

Toronto Metropolitan University, Toronto Canada

Mental Health: Emerging Factors Impacting Wellness and Quality of Life

Abstract

One billion people worldwide are purported to have mental health issues, in addition to the hundreds of thousands of people dealing with substance use disorders. These numbers are staggering and perhaps not surprising given the modern landscape, shaped by everchanging technology, and current societal and economic pressures. In Canada, millions of people are impacted by mental health conditions and addiction and in fact, prevalence of mental health illness (more so than drug use) has increased; 1 in 5 will present with mental health concerns in a given year. Research in the current lab has focused on several lines of discovery with one common theme: the evaluation of clinical correlates that may impact wellness. The present talk will present a lively discussion of several of our published works looking at the role of psychological factors on real-life functional compromise in community dwellers with acquired brain injury and, in-patient population with comorbid mental health conditions.

Biography

Dr. Tisha Ornstein is a Clinical Psychologist and Clinical Neuropsychologist, and an Associate Professor at Toronto Metropolitan University in Toronto Canada. She is the Director of the Cognitive Neuroscience (Neuropsychology) Lab. To add, she is an Adjunct Affiliate Scientist in the Waypoint Research Institute at the Waypoint Centre for Mental Health Care. She received her Ph.D. from the Department of Psychiatry at the University of Cambridge, England. Following graduation, she completed a Postdoctoral Fellowship at The Hospital for Sick Children, and acquired her clinical training at various institutions in and around Toronto, including the University Health Network - Toronto Rehab, Ontario Shores for Mental Health Sciences, and Edgewood Health Network Canada. Her clinical and research interests focus on the cognitive and psychological sequelae of various neuropsychiatric conditions with focused attention on acquired brain injury, and the interplay amongst psychological phenomena, pain complaints and perception, and functional disability that can solely or in combination impact daily functioning and activities of daily living. In addition, she teaches and supervises students at all levels of academic training, and provides assessment-based and counselling services in the community.



Paula Eboli

Torrance Memorial Medical Center, United States

Evaluating the Accuracy of CTP in Predicting Stroke Core Volume: Correlation with 24-Hour MRI and Implications for Endovascular Mechanical Thrombectomy Eligibility

Abstract

Background: Computed tomographic perfusion (CTP) is widely used to estimate infarct core volume in patients with acute ischemic stroke (AIS) due to large vessel occlusion (LVO), particularly to guide eligibility for endovascular mechanical thrombectomy (EMT). However, concerns persist regarding the accuracy of CTP-predicted core volume compared with final infarct volume measured on diffusion-weighted imaging (DWI) MRI. We aimed to evaluate the correlation between CTP-estimated core and 24-hour MRI-measured infarct volume in both early (<6 hours) and late (>6 hours) presentation windows.

Methods: We conducted a retrospective observational study of 90 consecutive AIS patients with LVO who underwent EMT between 2018 and 2022 at a single center in Los Angeles, California. Patients were evenly divided into early (n=45) and late (n=45) windows. CTP core was defined as cerebral blood flow <30% of the contralateral hemisphere using standardized perfusion protocols. Final infarct volume was measured on 24-hour MRI DWI using the validated ABC/2 method by two independent investigators. Correlation between CTP and MRI core volumes was assessed using linear regression analysis. Interobserver variability was evaluated using intraclass correlation coefficients.

Results: The mean age was 72.3 ± 15.5 years; 54.4% were male. The median CTP

core volume was 29.25 mL overall, while the median MRI core volume was 9.02 mL. Correlation between CTP and MRI core volumes was statistically significant but weak overall ($R^2=0.2839$, $p<0.001$), and remained weak in both early ($R^2=0.2556$, $p<0.001$) and late ($R^2=0.3438$, $p<0.001$) windows. In 63.3% of patients, MRI core exceeded CTP estimates, whereas 35.6% showed CTP overestimation. Reperfusion outcomes were favorable, with 88.5% achieving $TICI \geq 2b$. Hemorrhagic transformation occurred in 11.2% of patients.

Conclusions: CTP-predicted core volume demonstrates only weak correlation with final infarct volume measured by 24-hour MRI DWI in both early and late treatment windows. These findings suggest that reliance on CTP core estimates alone may be insufficient for determining EMT eligibility. A multimodal approach integrating clinical assessment and complementary imaging biomarkers may better inform treatment decisions. Prospective multicenter studies are needed to validate these observations and optimize imaging-based stroke selection criteria.



Sérend Hipe

IFPEA, Rue des Saint-Père's, France

The Functionally Divided Brain: Stroke and Di-encephalon in the Humano-murian

Abstract

We present the case of a humano-murian Vitim of a left stroke who presented with impaired motor skills on the left side of his body. Brain imaging studies (Scan, Pet Scan) have shown that the brain is functionally separated into two parts. The white corners and the corpus callosum are calcified and leave almost no possibility for inter-hemispheric communication as is the case for us. Basically, the entire anatomical substrate that allows our human brain to communicate between the two hemispheres is completely inactivated in humano-murians. It is among the latter that the term di-encephalon takes on its full meaning.

Biography

Sérend Hipe holds a Doctorate (Ph D) in Astrophysics and a Doctorate (MD) in Médecine (CES in Neurology). Her atypical career path meant that she left university after her retirement and founded the IFPEA where innovative research is carried out in several fields : anthropology, geomorphology, medicine...She has published recently in prestigious journal (The Scientiste, 2024, Neuroscience and Neurological surgery, 2025, Neuropsychiatry 2025, Journal of Medical Research and Clinical Case Reports, 2025, Annals on Clinical case reports, 2025) and her work is recognized by the international community.



Hyong-Ho Cho

*Chonnam National University Medical School,
South Korea*

Hearing modulation affects Alzheimer's disease progression linked to brain inflammation: a study in mouse models

Abstract

Background: Recent studies have identified hearing loss (HL) as a primary risk factor for Alzheimer's disease (AD) onset. However, the mechanisms linking HL to AD are not fully understood. This study explored the effects of drug-induced hearing loss (DIHL) on the expression of proteins associated with AD progression in mouse models.

Methods: DIHL was induced in 5xFAD and Tg2576 mice aged 3 to 3.5 weeks using kanamycin (700 mg/kg, subcutaneous) and furosemide (600 mg/kg, intraperitoneal). The accumulation and expression of beta-amyloid (A β), ionized calcium-binding adaptor molecule 1 (Iba1), and glial fibrillary acidic protein (GFAP) were measured through immunohistochemistry and immunoblotting. Additionally, the expression of proteins involved in the mammalian target of rapamycin (mTOR) pathway, including downstream effectors p70 ribosomal S6 kinase (p70S6K) and S6, as well as proinflammatory cytokines, was analyzed.

Results: Compared to control conditions, HL led to a significant increase in the accumulation of A β in the hippocampus and cortex. Elevated levels of neuroinflammatory markers, including Iba1 and GFAP, as well as proinflammatory cytokines such as interleukin-1 β (IL-1 β), IL-6, and tumor necrosis factor-alpha (TNF- α), were observed. Moreover, DIHL enhanced phosphorylation of mTOR, p70S6K, and S6, indicating

activation of the mTOR pathway.

Conclusions: HL significantly increases A β accumulation in the brain. Furthermore, HL activates astrocytes and microglia, leading to increased neuroinflammation and thereby accelerating AD progression. These findings strongly suggest that HL contributes autonomously to neuroinflammation, highlighting the potential for early intervention in HL to reduce AD risk.

Biography

Hyong-Ho Cho received the M.D. and Ph.D. degrees in medicine from the School of Medicine, Chonnam National University, Gwangju, South Korea, in 1997 and 2007, respectively. Since 2007, he has been with the Department of Otolaryngology Head and Neck Surgery, Chonnam National University Medical School, where he currently works as a Professor. His research interests include otology, neurotology, and medical devices.



Bart M. Demaerschalk

*Mayo Clinic College of Medicine and Science,
United States*

Cerebral Venous Density, Vascular Risk, and Brain Aging: A Retrospective Exploratory Study of Clinical MRI Data

Abstract

Background and aim: Advances in understanding cerebrovascular pathophysiology and aging highlight the importance of vascular contributions to cognitive impairment and dementia (VCID) associated with old age. There is already evidence that age-related alterations of large arteries, arterioles, and capillaries lead to dysregulation of cerebral blood flow and ischemia, blood brain barrier disruption, impaired clearance of metabolic byproducts, neuroinflammation to impair brain function. The role of age-related alterations in cerebral venous circulation in the pathogenesis of VCID is much less well understood. The main purpose of this retrospective study is to determine the effect of aging on patients' cerebral venous density in patients who have undergone neuroimaging at a brain health program. The secondary objectives are to determine if patients' vascular risk factors, cognitive status, and neurovascular features are associated with cerebral venous density

Methods: IRB approved protocol involved retrospective review of the electronic medical record for all clinical phenotypic information and MRI brain imaging for all radiographic features of all patients enrolled into the brain health program at time of on-boarding.

Results: Preliminary results demonstrated that there were 388 patients assessed in the brain health program. Percentage male 54.9%. Average age 54.8 years. The age vs exterior CSF venous density $r = -0.44$ (Pearson's r).

Conclusion: There is a significant effect of aging on patients' cerebral venous density. Determination if vascular risk factors, cognitive status, and neurovascular features are associated with cerebral venous density will be presented in March 2026.



Akshayaa Kumar Aggarawal

Walsall Manor Hospital, United Kingdom

When the Mind Plays Tricks: LGI1 Encephalitis Mimicking Psychiatric Illness

Abstract

Background:

LGI1 antibody-associated autoimmune encephalitis is a rare condition typically affecting older adults, presenting with seizures, cognitive decline, and behavioral changes. Diagnosis is often delayed due to normal imaging, EEG, and CSF findings. Early recognition and immunotherapy are critical to prevent long-term deficits. This case illustrates the diagnostic challenges and importance of considering autoimmune causes in subacute neuropsychiatric syndromes.

Case Presentation:

A 66-year-old forklift driver presented to Walsall Manor Hospital in March 2024 with a 10-day history of brief, non-convulsive episodes (10 seconds, once or twice daily), without loss of consciousness or typical seizure features. Since February 2024, he also experienced a “butterfly” abdominal sensation, occasionally followed by limb jerks or falls. His symptoms progressed over the months to include confusion, memory loss, impulsivity, and disinhibition.

Initial blood tests showed mildly raised WBC and neutrophils, elevated ALT and GGT, and low calcium. CSF was unremarkable with no signs of infection or inflammation. EEG and MRI brain were normal, and a cardiology review excluded syncope. Early investigations were inconclusive, and he was referred for psychiatric evaluation.

Cognitive testing (ACE: 85/100, MMSE: 28/30) raised concerns for a neurological

cause. In September 2024, serum LGI1 antibodies were detected, confirming LGI1 autoimmune encephalitis; other autoimmune and paraneoplastic panels were negative. Repeat testing in October reaffirmed LGI1 positivity. CSF antibody panels remained negative, suggesting disease confined to serum.

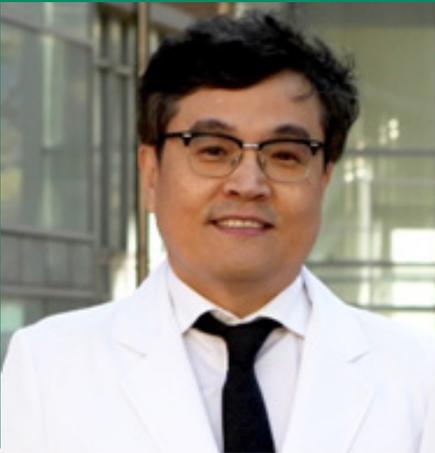
In December 2024, treatment with IV methylprednisolone followed by oral steroids was initiated, with some cognitive and behavioral improvement. Despite ongoing hallucinations and insomnia (managed with melatonin), overall clinical status improved. As of February 2025, the patient showed stabilization with persistent but manageable neuropsychiatric symptoms and continued follow-up under neurology.

Conclusion

The patient who has clinical presentation of personality change and abnormal body movement had normal initial work up. While earlier it was seen that there were Non-Epileptic Attacks, it was extensive work up that showed the patient was having a rare disease – Auto-Immune encephalitis. .

Biography

Dr Akshayaa Aggarawal, completed MBBS and MD in Internal Medicine. The doctor has cleared MRCP Part 1 and 2. Currently working in the Walsall Manor Hospital as a senior clinical fellow. Published articles and actively involved in teaching.



Han-Seong Jeong

*Chonnam National University Medical School,
South Korea*

Therapeutic effect of neural induced-stem cell-derived exosomes via regulating ERK/p38/NF- κ B in a traumatic brain injury

Abstract

Background: Traumatic brain injury (TBI), results from sudden external forces, such as falls or accidents, and it can cause immediate and long-term damage to the central nervous system. In this study, the therapeutic effects of neural-induced human adipose-derived stem cell-derived exosomes (NI-Exo) on TBI were investigated.

Results: Exosomes were isolated and characterized through nanoparticle tracking analysis, cryo-transmission electron microscopy, and western blotting analysis. The therapeutic effects of NI-Exo were assessed in LPS-stimulated human microglial cells and traumatic brain-injured mice via behavioral tests (rotarod, elevated body swing, and cylinder tests), qPCR, western blotting analysis, and immunostaining. In the in vitro study, NI-Exo significantly downregulated pro-inflammatory cytokines (IL-6, IL-1 β , and TNF- α) and upregulated anti-inflammatory cytokines (IL-4 and IL-10). In the in vivo study, NI-Exo (1×10^4 or 1×10^5 particles/mL) was administered intracerebroventricularly 1-hour post-surgery to verify the effect on the in vivo model. In the TBI mouse model, NI-Exo improved asymmetric behaviors and reduced tissue disruption and cell loss. In addition, the protein levels of pro-apoptosis (p53, ROCK1, and Bax) decreased and those of anti-apoptosis (Mcl-1) increased NI-Exo-treated group compared with that of TBI group. Mechanistic investigations revealed that NI-Exo inhibited ERK and p38 phosphorylation, highlighting its role in mitigating neuroinflammation via the ERK/p38/NF- κ B signaling pathway.

Conclusions: NI-Exo promoted anti-inflammation in human microglia and TBI mouse models; it also improved anti-apoptosis in TBI models, thereby offering a promising therapeutic potential for TBI treatment through the ERK/p38/NF- κ B pathway.

Biography

Han-Seong Jeong is a professor of Department of Physiology at Chonnam National University Medical School in Gwangju, Korea. He obtained his undergraduate degree from Chonnam National University Medical School (1991) and received his Ph.D. in Chonnam National University in 1995. He has published more over 24 research papers since 2021 (h-index =18; i10-index = 26).



Mohammad Nasb

Hubei Provincial Hospital of Chinese Medicine, China

Integrating Traditional Chinese Medicine With Standard Als Therapies: A Real-World Clinical Trial On Disease Progression, Symptom Alleviation, And Quality Of Life

Abstract

Amyotrophic lateral sclerosis (ALS) is a progressive neurodegenerative disease with limited therapeutic options, necessitating innovative treatment approaches. This study explores the integration of traditional Chinese medicine (TCM) with standard ALS therapies to assess its impact on disease progression and quality of life. Conducted as a real-world clinical trial with 318 ALS patients, the research demonstrated that combined treatment approaches led to significant stabilization in key ALS clinical indicators over six months. The ALS Functional Rating Scale-Revised (ALSFRRS-R) scores remained largely stable across major domains, including bulbar, fine motor, and respiratory functions, suggesting a delay in disease progression. Additionally, improvements were observed in patient-reported outcomes such as quality of life (ALSAQ-40), fatigue (Fatigue Severity Scale), and sleep quality (Pittsburgh Sleep Quality Index), further indicating the potential for symptom alleviation. Pulmonary function remained steady, with key indicators like Forced Vital Capacity (FVC) and Peak Expiratory Flow (PEF) showing maintenance or slight improvement. Furthermore, the study highlighted positive changes in body composition, including increased weight and muscle mass retention, which are critical for maintaining functionality in ALS patients. These findings suggest that integrating TCM with conventional ALS treatments may provide a holistic approach to managing ALS, offering both functional stability and symptom relief. The feasibility and scalability of this combined approach, supported by a robust clinical infrastructure, offer promising prospects for future ALS treatment strategies.

Biography

Mohammad Nasb, PhD, Postdoctoral Fellow at Hubei Provincial Hospital of Chinese Medicine, China. Lecturer at Albaath University, Syria. Nasb has been instrumental in designing clinical trials that bridge TCM principles with rigorous scientific methodology, making significant contributions to the evidence base for integrative neurology and rehabilitation.



Sujeong Jang

*Chonnam National University Medical School,
South Korea*

Inhibition of miR-4284 could reduce apoptosis and neuroinflammation by targeting APBA1/JAK1/STAT3 signaling in Alzheimer's disease

Abstract

Background: microRNA-4284 is associated with various diseases, but its role in Alzheimer's disease remains unclear. This study explores the therapeutic potential of miR-4284 inhibition by targeting the APBA1 and the JAK/STAT3 pathways in AD models.

Results: miR-4284 expression was analyzed in A β -treated SH-SY5Y cells and 5xFAD mice. Luciferase assays identified APBA1 as a direct target of miR-4284. Apoptosis, inflammation, and neuronal survival were assessed using qPCR, western blotting analysis, FACS, and immunohistochemistry. The Morris water maze test evaluated cognitive function, while western blotting examined the JAK/STAT3 pathway. miR-4284 was upregulated in AD models. Its inhibition increased APBA1 expression, reduced A β accumulation, suppressed apoptosis and inflammation, and enhanced neuronal survival and cognitive function, correlating with JAK/STAT3 activation.

Conclusions: miR-4284 inhibition confers neuroprotection by modulating APBA1 and JAK/STAT3 signaling, suggesting its potential as a therapeutic target for AD.

Biography

Sujeong Jang finished her PhD from Chonnam National University Medical School and postdoctoral investigations from Ohio State University Medical School. She has published in excess of 20 papers in rumored diaries and has been filling in as a publication board individual from notoriety since 5 years.



Amit Kumar

Mind Diagnostics, Patna, India

Narcolepsy Emerging After Treatment of Obsessive–Compulsive Disorder: A Two-Case Report Suggesting a Potential Neurobiological Link

Abstract

Background: Obsessive–Compulsive Disorder (OCD) frequently co-occurs with other psychiatric and neurodevelopmental disorders, but comorbidity with narcolepsy is rarely documented. Emerging research suggests potential shared autoimmune or neurobiological mechanisms linking sleep–wake dysregulation and obsessive–compulsive symptoms.

Case Presentations:

Case 1: A young adult male with contamination-related OCD developed excessive daytime sleepiness and cataplexy-like episodes. Polysomnography with MSLT confirmed narcolepsy. Symptoms improved after initiation of modafinil while continuing OCD treatment.

Case 2: A young female with long-standing OCD presented with sudden-onset sleep attacks, hypnagogic hallucinations, and marked daytime somnolence. Although PSG was not feasible, she met clinical criteria for narcolepsy and showed significant therapeutic response to modafinil, indirectly supporting the diagnosis.

Discussion: These cases highlight the possibility that narcolepsy may emerge sequentially in individuals with OCD. This association may reflect shared dysregulation of hypothalamic pathways, autoimmune mechanisms, or genetic predisposition, as

suggested in rare reports such as those linking OCD and narcolepsy in Wolfram Syndrome.

Conclusion: Clinicians should maintain a high index of suspicion for narcolepsy in OCD patients presenting with new-onset sleep-wake symptoms, as timely recognition is essential for functional recovery. Further studies exploring neurobiological linkages between these disorders are warranted.



Arya Babul

*Society for Awareness of Neglected Diseases,
United States*

Seizures After Single Intravenous Dose of Tramadol for Postsurgical Pain

Abstract

Outside the US and Canada, intravenous (IV) tramadol is widely used in over 135 countries as monotherapy or as part of multimodal analgesic regimens for postsurgical pain. Its popularity stems from dual mechanisms, a weak μ -opioid agonist and monoaminergic reuptake inhibitor, and its exemption from controlled substance regulations for many decades. We report two cases of life-threatening seizures occurring within four minutes of a single 150 mg IV tramadol dose in a randomized, double-blind clinical trial of postsurgical pain after impacted third molar surgery, despite strict exclusion of patients at seizure risk. The mechanism of tramadol-induced seizures is unclear but may involve opioid-dependent GABA modulation and histamine H1 receptor activation. The reported incidence of tramadol-associated seizures varies widely. A recent meta-analysis of 51 publications (N=101,770) found seizure rates of 3% (95% CI: 2–3%) with therapeutic use and 37% (95% CI: 12–62%) with nonmedical use. The 9% seizure rate observed in our trial (2 of 22 subjects) raises serious safety concerns and suggests a narrow therapeutic margin in real-world settings. Accordingly, we recommend that IV tramadol for postsurgical pain be administered only as a low-dose, repeated bolus (e.g., 25–50 mg every 5–15 minutes) or via controlled infusion when doses exceed 50 mg, ideally in combination with a mechanistically differentiated analgesic. This presentation will discuss the mechanism, incidence and dose dependence of tramadol associated seizures.

Biography

Arya Babul is the Founder, President, and CEO of the Society for Awareness of Neglected Diseases (SAND), a nonprofit organization dedicated to raising global awareness of neglected tropical diseases (NTDs) among students aspiring to enter healthcare professions. SAND focuses on three particularly burdensome NTDs: Trachoma, Onchocerciasis (River Blindness), and Lymphatic Filariasis (Elephantiasis). Arya is currently a student of Biomedical Sciences at the West Career and Technical Academy in Las Vegas, USA. He serves as lead author on more than a dozen peer-reviewed abstracts and manuscripts spanning anesthesiology, critical care, pain medicine, obstetrics, and dermatology.



Caroline Ross

University of Cape Town, South Africa

Inducible formation of fusion transcripts upregulates haploinsufficient CHD2 gene expression

Abstract

Many cis-acting lncRNAs are transcribed in proximity to coding genes involved in the transcription process. One such gene is *Chd2*, whose haploinsufficiency causes epilepsy and ASD. We previously identified and characterized *Chaserr* lncRNA, produced from a locus closely upstream of the *Chd2* TSS. Disruption of *Chaserr* in mice leads to an overdose in *Chd2* levels, resulting in severe developmental abnormalities in *Chaserr*^{+/-} mice (*Chaserr*^{-/-} mice are embryonic lethal). More recently, a severe neurodevelopmental disorder was reported in individuals with *CHASERR* deletions. We also recently found that conserved short sequences in the last exon of *Chaserr* contribute to its function.

To study the short, conserved elements found in the last exon of *Chaserr*, we used antisense oligonucleotides (ASOs) to block this element and established a mouse model where this conserved region of *Chaserr* is deleted. In both cases, perturbations strongly induce the formation of a fusion transcript that contains the first four exons of *Chaserr* and all but the first exon of *Chd2*, essentially allow *Chaserr* to act as an alternative 5'UTR of *Chd2*. This fusion transcript is translated and accumulates in addition to the canonical *Chd2* mRNA transcripts, boosting CHD2 protein levels. These *Chaserr*-*Chd2* fusion transcripts occur in unperturbed cells at low levels, and perturbations to the polyadenylation machinery or neuronal activation trigger their accumulation, suggesting their physiological relevance. *Chaserr* thus serves as a reservoir of alternative 5'UTRs for *Chd2* mRNA that can be exploited to increase its levels in certain physiological conditions or by targeting *Chaserr* with

therapeutically relevant ASOs. Perinatal introduction of the ASOs into *Chd2*^{+/-} mice up-regulates CHD2 expression and alleviates behavioral phenotypes caused by CHD2 haploinsufficiency, providing a therapeutic route to CHD2 haploinsufficiency. At a fundamental level, these findings reveal a novel strategy for enhancing gene expression by reprogramming transcription termination between tandem genes to induce functional fusion formation, a concept with potential therapeutic applications in other haploinsufficiency disorders.

Biography

Dr Caroline Ross obtained her PhD in Structural Bioinformatics at Rhodes University, South Africa, where her research focused on modelling RNA release mechanisms in enteroviruses. She went on to pursue postdoctoral training at the Weizmann Institute of Science, concentrating on decoding the evolution and functional mechanisms of long noncoding RNAs. During this period, she combined computational and experimental approaches to advance understanding of RNA biology and its role in cellular regulation. Recently, Caroline established her independent research group at the University of Cape Town, South Africa. Her laboratory is dedicated to investigating the regulatory functions of noncoding RNAs, with particular emphasis on transcriptional regulation in the brain. Her group aims to elucidate how long noncoding RNAs orchestrate complex regulatory circuits, with the ultimate goal of developing novel therapeutic strategies that harness RNA-mediated mechanisms in health and disease.

**Farheen Nasir***Banaras Hindu University, India*

Hydrogen sulphide enhances dendritic arborization and alleviates neuroinflammation to ameliorate cognitive dysfunctions after traumatic brain injury

Abstract

Traumatic brain injury (TBI) affects millions of people annually. Effective treatments are lacking due to a poor understanding of how injury impacts, persists, and progresses to deteriorate neuronal function. H₂S has always been regarded as a toxic gas; however, accumulating evidences suggest that it can execute neuroprotection in the brain. The regulation of H₂S is disrupted after injury. Sodium hydrogen sulphide (NaHS) functions effectively as a source of H₂S. It functions to improve functional outcomes in different neurological conditions, including injury, relieving the cascades of secondary injury processes. Therefore, the present study focuses on the role of hydrogen sulphide (H₂S) on TBI-induced neurological dysfunctions in the brain cortex of TBI mice.

Methods: Swiss albino male mice (12±2 weeks) were subjected to the weight drop method of TBI. Mice were grouped into sham, TBI, and TBI+NaHS groups. The sham group mice were treated with intraperitoneal saline injections (0.9% NaCl), and the TBI+NaHS group was treated with NaHS (50µM/kg body weight) for 7 days. We validated our findings by behavioural tasks such as the Barnes maze test, radial arm maze test, novel object recognition test, and motor behaviour tasks such as rotarod. We also estimated H₂S levels by fluorescent probe, quantitatively measured H₂S-synthesizing and degrading enzymes by immunoblotting, and analysed the morphology of neurons, astrocytes, and microglia by Golgi-Cox staining and immunofluorescence, respectively.

Results: We found that NaHS treatment restored the H₂S levels by upregulating H₂S-synthesizing and downregulating H₂S-degrading enzymes post-TBI. Besides this, it also mitigated TBI-induced neuroinflammation as depicted by the altered morphology of astrocytes and microglia. Furthermore, the changes in neurons were reflected at the structural level, with enhanced dendritic arborization and spine number. The reasons for such modifications were credited to the altered phosphorylation status of different kinases that facilitate the functions of many downstream signalling molecules, many of which include, but are not limited to S100 β /RSK1 and Ras/Raf/MEK/ERK/NF- κ B pathways. The data gathered here suggest that NaHS could work well as a potential therapeutic agent against TBI-induced brain pathology in aged mice.

Conclusion: These findings suggest that hydrogen sulphide might have a potential protective effect in a weight drop model of TBI in mice.

Biography

I am Farheen Nasir, an Indian national born on December 20, 1992, in Varanasi, who pursued her early education at Ummahatul Momineen Girls Intercollege, Varanasi (1998–2005), followed by my secondary and higher secondary education at William Henry Smith Memorial School, Varanasi (2006–2013), securing 84.72% and 82.83% in High School and Intermediate (Council for the Indian School Certificate Examination), respectively. I obtained my Bachelor of Science (Hons.) in Zoology (2013–2016) and Master of Science in Zoology (2016–2018) from the Institute of Science, Banaras Hindu University (BHU), Varanasi, with scores of 71.70% and 72.90%, respectively. I have been pursuing my Ph.D. in Neuroscience at the Department of Zoology, BHU, since 2018, and have over six years of laboratory research experience.



Sheel Shah

Barrow Neurological Institute, United States of America

Unequal Burden of Stroke Across Economic Boundaries: A Comparative Analysis of Disability-Adjusted Life Years from 2000-2021

Abstract

Background: Stroke remains a leading global health challenge with significant socioeconomic implications. This study examines the distribution and evolution of stroke burden across World Bank income classifications over a 21-year period to identify disparities that may inform targeted global health initiatives. **Methods:** We analyzed data from the WHO Global Health Estimates 2021 dataset, measuring disability-adjusted life years (DALYs) for stroke across countries grouped according to the World Bank's income classification system: high-income (e.g., United States, Japan, Germany), upper-middle-income (e.g., China, Brazil, Russia), lower middle-income (e.g., India, Philippines, Nigeria), and low-income countries (e.g., Afghanistan, Ethiopia, Somalia). The analysis compared stroke burden data from 2000 and 2021, calculating absolute and percentage changes for each income group and examining the distribution of stroke DALYs by sex and age groups. We extracted age stratified data to determine age-specific burden patterns across the four income categories. DALYs were analyzed both as absolute values and as percentages of total disease burden within each income group to provide context for the relative impact of stroke within different economic settings. We also calculated the male-to-female ratio of stroke burden to identify gender disparities across income groups. **Results:** In 2021, stroke accounted for 160,302,000 DALYs globally (5.3% of total disease burden), with substantial economic disparities. The burden was highest in upper-middle-income countries (79,435,000 DALYs; 49.5% of global stroke burden), followed by lower-middle-

income countries (48,175,000 DALYs; 30.1%), high-income countries (21,499,000 DALYs; 13.9%), and low-income countries (10,364,000 DALYs; 6.5%). From 2000 to 2021, stroke DALYs decreased across all income groups, but the reduction was more substantial in high-income countries (26.9% decrease from 29,394,000 DALYs) compared to low-income countries (15.1% decrease from 12,209,000 DALYs). Upper-middle-income countries experienced a 16.4% decrease (from 95,039,000 DALYs), while lower middle-income countries saw a 21.5% decrease (from 61,390,000 DALYs). The male-to-female ratio of stroke burden was 1.52:1 globally in 2021, with males accounting for 97,308,000 DALYs (60.7%) and females 63,994,000 DALYs (39.3%). Age-stratified analysis revealed that in high-income countries, stroke burden was predominantly concentrated in older age groups (70+), while middle and low-income countries experienced a substantial proportion of their burden among working-age populations (30-69 years). Conclusion: Despite global progress in reducing stroke burden over the past two decades, significant disparities persist between countries of different economic levels. Middle-income countries now bear the largest absolute burden of stroke, representing nearly 80% of global stroke DALYs. The substantial impact on working-age populations in lower-income settings suggests significant economic consequences beyond health outcomes. These findings highlight the need for targeted prevention strategies and improved stroke care systems tailored to each economic setting's specific challenges.

Biography

Dr. Sheel Shah is a 26-year-old resident physician pursuing residency training in neurology at Barrow Neurological Institute in Phoenix, Arizona—recognized globally as one of the world's most prestigious centers for neurological care, neurosurgery, and neuroscience innovation. His clinical and research expertise centers on cerebrovascular disease, acute stroke intervention, and addressing critical neurological health disparities on a global scale. Born and raised in Toronto, Canada, Dr. Shah earned his undergraduate degree in Human Biology and Society from UCLA before completing his medical doctorate at Virginia Commonwealth University School of Medicine, where he distinguished himself as a leader in global health initiatives and healthcare systems strengthening in underserved communities. Driven by a commitment to advancing neurological excellence and health equity, Dr. Shah continues to pursue cutting-edge training at one of North America's flagship neuroscience institutions, preparing to tackle the most complex challenges facing patients with neurological disease worldwide.



Fateme Ghayem

Inria Saclay, MIND Team, 91120 Palaiseau, France

Exploring brain function and structure: From the sparse coding of brain functional connectivity to multimodal brain meta-analysis

Abstract

In the rapidly advancing field of neuroimaging, the dual challenge of extracting clear insights from complex brain data and reliable knowledge from individual studies remains paramount. This presentation introduces innovative computational techniques that enhance our understanding of brain function and structure. This talk presents advancements in data-driven methodologies for understanding brain function, as well as aggregating individual-level fMRI studies with large-scale brain meta-analysis.

In the first part of this talk, I introduce novel approaches for multi-subject resting-state fMRI analysis aimed at discovering interpretable brain patterns and identifying clinically meaningful subgroups. By combining Independent Component Analysis (ICA) with Dictionary Learning (DL), we extract sparse, subject-specific temporal functional network connectivity (tFNC) features that improve classification between healthy controls and schizophrenia patients while revealing new, interpretable neural signatures. I also present a constrained ICA algorithm based on Entropy Bound Minimization (c-EBM) that enables aligned component estimation across subjects for subgroup discovery and robust detection of group-level differences.

In the second part, I focus on coordinate-based meta-analysis (CBMA), a key tool in brain meta-analysis that aggregates stereotactic coordinates reported in neuroimaging studies to identify consistent associations between brain regions and cognitive or clinical concepts. CBMA serves three main goals: synthesizing knowledge across studies, contextualizing new experimental findings, and generating hypotheses about

brain–function relationships. However, traditional CBMA approaches often rely on bag-of-words models and suffer from limitations such as inconsistent terminology, poor handling of long texts, and sparse coordinate reporting. To address these issues, I introduce NeuroConText, a contrastive learning framework that aligns full-text neuroscientific articles with brain activation maps. It learns a shared latent space between text and brain maps using a multi-objective loss combining contrastive and reconstruction terms. By leveraging large language models (LLMs) for semantic understanding and applying LLM-based text augmentation for generalization to short inputs, NeuroConText improves text-to-brain retrieval while maintaining brain map reconstruction.

Biography

Fateme Ghayem is currently a postdoctoral researcher at Inria Nancy, France, working on aneurysm detection with Erwan Kerrien and Marie-Odile Berger. Previously, she was a postdoc at the MIND team in Inria-Saclay, supervised by Bertrand Thirion and Demian Wassermann, focusing on brain meta-analysis. Before that, she was a postdoc at the MLSP-lab, University of Maryland, USA, supervised by Tulay Adali, working on identifying new patterns and discriminant features of brain functional connectivity, subgroup identification, and brain graph neural networks. She obtained her Ph.D. from GIPSA-lab, University Grenoble Alpes, France, supervised by Christian Jutten and Bertrand Rivet, where she worked on optimal sensor placement for source extraction. She previously worked as a research assistant at the DSP-lab, Sharif University of Technology, Tehran, Iran, developing sparse coding algorithms and accelerated dictionary learning. She also obtained her M.Sc. in biomedical engineering at Sharif University of Technology, focusing on MRI reconstruction from partial Fourier samples using compressed sensing techniques.



Garvita Agrawal

Armed forces Medical College, India

Acute Vision loss-An ictal phenomenon

Abstract

Sir, William Richard Gower, an eminent British neurologist², first described in his paper, epilepsy with an aura of acute vision loss. An acute vision loss with macular sparing can occur in posterior circulation stroke, CNS vasculitis or precisely any aetiology that can affect the occipital lobe. An occipital seizure can have various visual positive phenomena from scintillation or flashes to negative phenomena like hemianopia and, rarely acute loss of vision. On review of the literature there are very few cases reported in past. ¹⁰Several underlying causes of ictal blindness have been identified in the literature, including; Infections: Malaria, viral encephalitis (acute and chronic), Subacute sclerosing panencephalitis, metabolic disorders: Porphyrin, anoxia, vascular causes: Embolic stroke, infarction, genetic syndromes: MELAS (Mitochondrial myopathy, encephalopathy, lactic acidosis, and stroke-like syndrome), head trauma and tumor.^{1-3,9,10} Here, we present a case of a lady in her 50s who had presented with headache, an episode of GTCS and acute vision loss in both eye. MRI imaging was suggestive of Posterior circulation stroke. The CSF analysis was done to rule out infections, esp HSV encephalitis/Tuberculosis which can present with seizure and stroke. The CSF picture had low sugars with normal protein and neutrophilic predominant cells. The possibility of encephalitis was first on cards. The vascular territory abnormality like Reversible cerebral vasoconstriction syndrome was also kept in mind in view of headache with seizure, focal abnormality of P4 segment. The Digital subtraction angiography, however ruled out this possibility. The autoimmune causes of CNS vasculitis (ANA/dsDNA/ pANCA /cANCA) were also ruled out. During this acute vision loss phase, EEG was done it showed generalised epileptiform discharges arising from occipital lobe. It confirmed the diagnosis of acute

vision loss as the ictal phase, which improved post-antiseizure measures. Acute vision loss can sometimes be the only unusual presentation of an occipital seizure. Presently, the patient is asymptomatic and has no seizure post medications. Prompt diagnosis and keeping its as a differential is essential for better outcomes for the patient.

**Shari Guerra***The Medical City, Philippines*

Artificial Intelligence-Driven DWI and FLAIR for the Detection of Early Stroke Changes: A Systematic Review

Abstract

Background

Timely detection of acute ischemic stroke is crucial for ensuring an appropriate standard of care and guiding reperfusion therapies. While MRI remains highly sensitive for identifying early ischemic changes, its interpretation is subject to inter-observer variability and may be less accessible or efficient in resource-limited settings. Emerging AI models demonstrate high specificity, sensitivity, and accuracy in detecting stroke lesions, offering the potential to enhance diagnostic efficiency and streamline clinical workflows in stroke management.

Methods

A systematic review of acute stroke diagnostic-focused AI studies from January 2014 to September 2025 in PubMed, MEDLINE, CENTRAL, Google Scholar, and Cochrane Library using terms: 'artificial intelligence' or and 'ischemic stroke' and 'DWI' and 'FLAIR' was performed. The overall certainty of the evidence was evaluated using the GRADE approach.

Results

AI models demonstrate high accuracy, sensitivity, and specificity in detecting acute ischemic lesions on MRI, particularly in cases of large infarcts, thereby supporting timely decision-making for patients eligible for reperfusion therapies.

Conclusion

AI models enable rapid and accurate identification of stroke lesions, serving as a valuable adjunct in the early detection of ischemic changes.

Biography

Dr. Shari Guerra is currently a Neurology resident in The Medical City – Ortigas and is a graduate of the University of the East Ramon Magsaysay Memorial Medical Center Inc. College of Medicine in 2017. She earned her Bachelor of Science in Biology, Major in Wildlife Biology in the University of the Philippines Los Baños where she was awarded Best in Undergraduate Thesis Award and Oral Presentation at the 26th Philippine Biodiversity Symposium of the Biodiversity Conservation Society of the Philippines for her topic on the Description and comparison of Philippine hornbill (Bucerotidae) vocalizations.



Eliza Atudosie

Babeş-Bolyai University, Romania

Serious Games for Serious Problems: A Randomized Trial of the RETHink Intervention in Youth with Emotional Disorders

Abstract

Background: Anxiety and depression are among the most common mental health disorders in youth, impairing emotional, social, and academic functioning. Difficulties in emotion regulation (ER) are key mechanisms underlying internalizing symptoms. Digital therapeutic tools such as serious games offer scalable and engaging ways to strengthen ER skills in clinical populations.

Objective: This randomized controlled trial examines the efficacy of the RETHink therapeutic game in reducing emotional disorder symptoms and improving emotion regulation in children and adolescents aged 8–18 years with psychiatric diagnoses. Secondary aims include effects on behavioral difficulties, prosocial behavior, irrational beliefs, and the moderating role of parental involvement.

Methods: Eighty participants were randomly assigned to either the RETHink intervention or treatment-as-usual (TAU). All participants continued receiving standard psychiatric care. The RETHink program includes seven therapeutic game levels delivered over two weeks. Children and caregivers completed assessments at baseline (T1), post-intervention (T2), and three-month follow-up (T3). Measures included emotional and behavioral symptoms (SDQ), irrational beliefs (CASI), and cognitive emotion regulation strategies (CERQ-C). Analyses follow the intention-to-treat approach using linear mixed-effects models controlling for baseline scores, age, and diagnosis; intervention

dose is included as a covariate and explored as a moderator.

Results: Data collection is ongoing, and results will be presented at the conference.

Conclusions: This study will provide evidence on the potential of an REBT-based therapeutic game to support emotion regulation and reduce emotional difficulties in youth receiving routine psychiatric care.

Biography

Eliza Atudosie is a 27 years old doctoral researcher at the Evidence-Based Psychological Assessment and Interventions Doctoral School, Babeş-Bolyai University, Cluj-Napoca, Romania. Her work focuses on emotion regulation and digital mental health interventions for children and adolescents. She has led research on technology-based psychological tools, including a meta-analysis on digital interventions for anxiety in oncology populations, the validation of the ERICA scale in Romanian youth, and studies using network analysis to understand emotional processes in chronic illness. Eliza currently conducts a randomized controlled trial evaluating the RETHink therapeutic game in clinical psychiatric settings. Her research aims to advance evidence-based, scalable, and tech-driven approaches to youth mental health.

