Coalesce Research Group

8th International Conference on

NEUROLOGY AND BRAIN DISORDERS

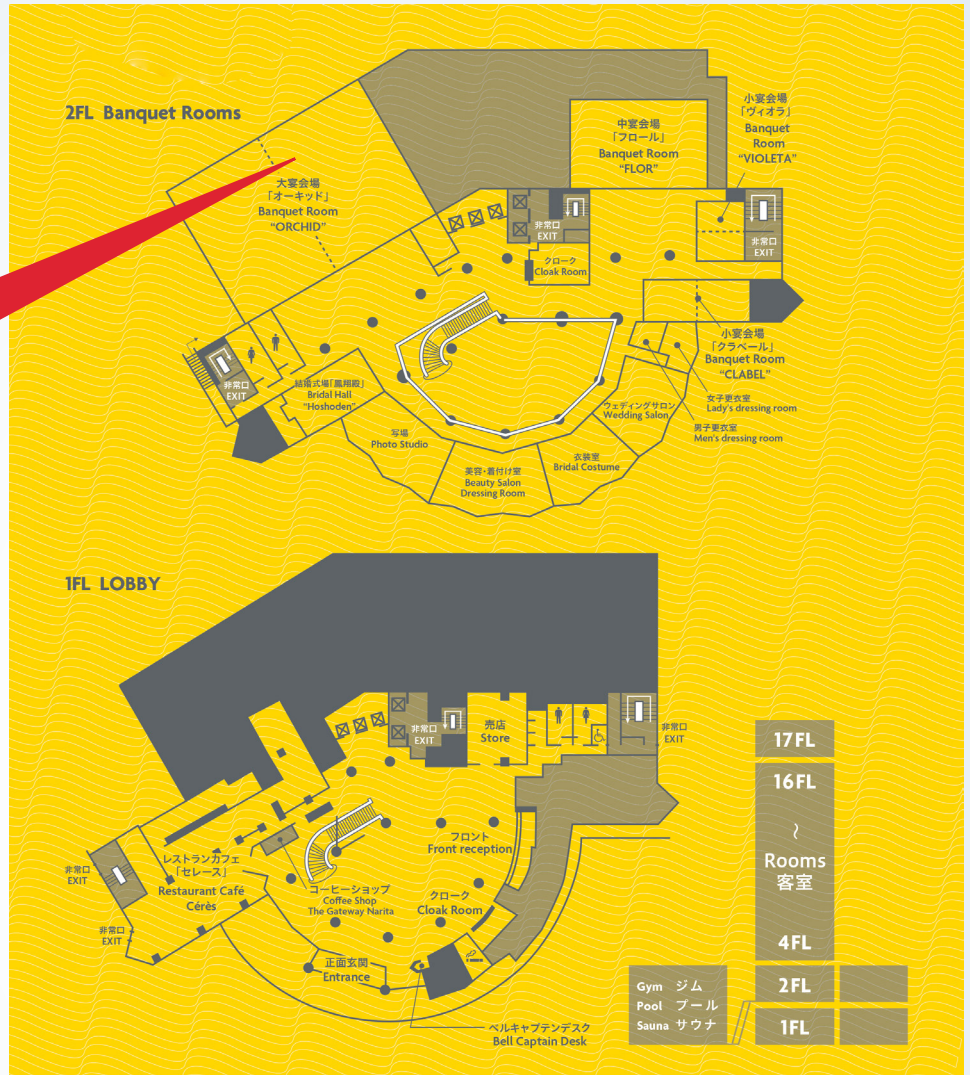### October 21-22, 2024 | Tokyo, Japan

Floor Map

Conference Hall

Wi-Fi Details:

SSID : IHG One Rewards Free WIFI
Password: not required but log in page will be coming up, and put **1311** into the access code and submit

8th International Conference on

Neurology and Brain Disorders

Day 1 – October 21, 2024	
Meeting Hall : Orchid 2/3	
8.00 - 8.45	Registration
8.45 - 9.00	Introduction
Keynote Presentations	
9.00 - 9.40	Three-dimensional Spinal Canal Morphometric Analysis and Relevant Spinal Cord Occupational Ratios in Congenital Cervical Spinal Stenosis: A Classification Algorithm of the Stenosis Phenotypes and Data Driven Decompression Approach
	Sameer A. Kitab, University of Al-Qadisiyah, Iraq
9.40 - 10.20	Hypnosis Therapy for Self-Esteem in Pediatric Practice
	P. Castelnau, Tours University, France
Networks & Refreshments (10.20 - 10.45) @ Orchid Foyer and Iris	
Oral Presentations	
Session Chair	**Sameer A. Kitab, University of Al-Qadisiyah, Iraq**
Session Chair	**Tommaso Liuzzi, Bambino Gesù Children's Hospital, Italy**
Sessions:	Neurobiology and Behavior | Neurological Disorders and Stroke | Neurosurgery and Spine | Neuroimmunology and Neurological Infections | Molecular Neuroscience and Neurodegeneration | Neuropharmacology and Neurochemistry | Brain Pathology and Oncology Research | Alzheimers, Dementia and Parkinsons Diseases
10.45 - 11.10	Recovery of Sleep-Dependent Consolidation after Stroke
	Jaekyung Kim, Korea Advanced Institute of Science and Technology (KAIST), South Korea
11.10 - 11.35	Therapeutic Anti-Lilrbs Reduce the Beta-Amyloid Accumulation and Enhance Microglia Phagocytosis in an Alzheimer's Disease Mouse Model
	Shu-Hsia Chen, Houston Methodist Research Institute, USA
11.35 - 12.00	Predictive Risk Factors for Severe Relapsing NMOSD A Single Center Retrospective Cohort Study
	Tang Jingliang Tommy, United Christian Hospital, Hong Kong
12.00 - 12.25	Investigating URB597 Antidepressant, Anxiolytic, and Anti-Aversive Properties as a Potential Therapeutic Target
	Weverton Castro Coelho-Silva, University of São Paulo, Brazil
12.25 - 12.50	Astragaloside IV Alleviates Cerebral Ischemia-Reperfusion Injury by Inhibiting the Process of Neuronal Ferroptosis
	Min Wei, Yangzhou University, China
Group Photo (12.50 - 13.00)	
Lunch (13.00 - 14.30) @Restaurant Cafe Ceres	
14.30 - 14.55	Speech Emboli in the Clinic of Post-Stroke Speech Disorders
	Rasulova D.K, Tashkent Medical Academy, Uzbekistan

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14.55 - 15.20	Abnormalities of Brain Structure and Function in Cervical Spondylosis: A MultiModal Voxel-Based Meta-Analysis	
	Jianxin Zhang, China University of Petroleum (East China), China	
15.20 - 15.45	Alterations in Degree Centrality and Functional Connectivity in Tension-Type Headache: A Resting-State Fmri Study	
	Xiaomeng Xue, China University of Petroleum (East China), China	
15.45 - 16.10	Digital Interventions in Neuro-Rehabilitation: Gotcha! App-Based Therapy For Proper name Anomia in People with Dementia	
	Aygun Badalova, University College London, United Kingdom	

Networks & Refreshments (16.10 - 16.30) @ Orchid Foyer and Iris

Poster Presentations

Poster Judge	**Emre Uygur, Manisa Celal Bayar University, Turkey**	
PP-01	Evolution of Medical Care Above Patients with Mental Disease for Example the Oldest Mental Hospital In Poland	
	Sonia Lazarz, Regional Psychiatric Hospital for Neurologically and Mentally Ill Patients in Swiecie, Poland	
PP-02	Association between Beliefs about Dementia Prevention and Self-Efficacy with Cognitive Decline: A 24-Week Multidomain Intervention Study	
	Joung Hwan Back, Daejeon University, Republic of Korea	
PP-03	Neuroimaging Assessment of the Therapeutic Mechanism of Acupuncture and Bee Venom Acupuncture in Patients with Idiopathic Parkinson's Disease: A Double-blind Randomized Controlled Trial	
	Seong-Uk Park, Kyung Hee University Hospital at Gangdong, Republic of Korea	
PP-04	Clozapine - Is it a Bad Choice? - Safety of Usage of Clozapine in Poland	
	Sonia Lazarz, Regional Psychiatric Hospital for Neurologically and Mentally Ill Patients in Swiecie, Poland	
PP-05	Neuroleptic Malignant Syndrome in Anti-N-Methyl-D-Aspartate Receptor Encephalitis – A Case Report	
	P Thineshan, National Hospital of Sri Lanka, Sri Lanka	
PP-06	Euterpe Music Therapy Method for Children with Cerebral Palsy	
	Tommaso Liuzzi and Fiammetta D'Arienzo, Bambino Gesù Children's Hospital, Italy	
PP-07	Prediction of the Rehabilitation Potential of Stroke Patients according to Comorbidity Indicators and the NIHSS Scale	
	Rasulova D.K, Tashkent Medical Academy, Uzbekistan	
PP-08	Covid Encephalitis	
	Nabeel Ahmad, Ibn-e-siena Hospital Multan, Pakistan	
PP-09	Preliminary Pharmacodynamic Mechanism Analysis and Clinical Efficacy Validation of Toutongting Decoction in Migraine: From Animal Experiment to Clinical Trial	
	Shaojie Duan, Taizhou Central Hospital, China	

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PP-10	Characteristics of Dementia Patients According to General Anesthesia Experience After Age 50	
	Kayoung Song,Veteran Health Service Medical Center, South Korea	
PP-11	Gerstmann Syndrome with Stroke	
	Rasulova D.K, Tashkent Medical Academy, Uzbekistan	
PP-12	Differential Diagnostic Performance of B-Type Natriuretic Peptide and N-Terminal Pro B-Type Natriuretic Peptide: Potential Biomarkers to Differentiate Ischemic and Hemorrhagic Stroke	
	Hyejeong Kim, The Catholic University of Korea, Republic of Korea	
Day 1 Concludes followed by Award Ceremony		

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	Day 2 – October 22, 2024
	Meeting Hall : Flor
	Keynote Presentation
10.00 - 10.40	Recent Pre-Clinical Advancements on Radiolabeled Nanoparticles in Nuclear Neurology
	Emre Uygur, Manisa Celal Bayar University, Turkey
	Oral Presentations
Session Chair	**Emre Uygur, Manisa Celal Bayar University, Turkey**
Session Chair	**Pazart Lionel, Centre Hospitalier Universitaire, France**
Sessions:	Traumatic Brain Injury and Behavioral Neuroscience | Alzheimers, Dementia and Parkinsons Diseases | Molecular Neuroscience and Neurodegeneration | Pediatric Neurology and Epilepsy | Anxiety, Depression and Sleep Disorders | Neurological Disorders and Stroke
10:40 - 11:05	Towards the Assessment of Patients with Disorders of Consciousness under more Naturalistic Conditions
	Pazart Lionel, Centre Hospitalier Universitaire, France
	Refreshments Break (11:05 - 11:30) @ Orchid Foyer and Iris
11:30 - 11:55	Harnessing Neuroscience-Informed Teaching Strategies to Support Language Development in an Inclusive Pre-K Classroom
	Joy L Hernandez, Old Dominion University, USA
11:55 - 12:20	Brain Activation Patterns of Rhetorical Comprehension in Individuals with Autism Spectrum Disorders: An Activation Likelihood Estimation Meta-Analysis
	Jianxin Zhang,China University of Petroleum, China
12:20 - 12:45	Preliminary Pharmacodynamic Mechanism Analysis and Clinical Efficacy Validation of Toutongting Decoction in Migraine: From Animal Experiment to Clinical Trial
	Shaojie Duan, Taizhou Central Hospital, China
12:45 - 13:10	LILRB Regulates TREM2 Expression and Diminishes Alzheimer's Disease Pathognomonic Features in Mice
	Ping-Ying Pan, Houston Methodist Research Institute, USA
	Lunch (13:10 - 14:00) @Restaurant Cafe Ceres
14:00 - 14:25	Anti Ampa Encephalitis
	Nabeel Ahmad, Ibn-e-siena Hospital Multan, Pakistan
14:25 - 14:50	Role of Microglia-Astrocyte-Neuron axis in Neurodegeneration in α - Synucleinopathy Dementia
	Tae-In Kam, Korea Advanced Institute of Science and Technology (KAIST), South Korea
14:50 - 15:15	Deciphering the Interplay of PARP-1 and MIF Nuclease Activity in α-Synuclein-Driven Neurodegeneration
	Hyejin Park, Korea Advanced Institute of Science and Technology (KAIST), South Korea

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	Video Presentations
VP-001	Enhancing Mental Wellness through the Integration of Zen Meditation and Music Therapy
	Mi Hyang Hwang, Dongguk University, South Korea
VP-002	An Updated Meta-Analysis of Randomized Controlled Trials of Dual Antiplatelet Therapy Versus Aspirin in Patients with Stroke or Transient Ischemic Attack
	Muhammad Basil Raza and Ali Akhtar, Kings College and Cambridge University Hospitals, NHS Foundation Trust, United Kingdom
VP-003	Chronic Muscle Spasm Induced Chronic Pain Treated with the CMECD® Procedure
	Roger Coletti, Interventional Health, USA
VP-004	Efficacy and Safety of Edaravone Dexborneol Combined with Endovascular Treatment in Acute Ischemic Stroke due to Large Vessel Occlusion
	Wei Li, Hainan Medical University, China
	Networks & Refreshments (16:15 - 16:45) @Orchid Foyer and Iris
	Day-2 Concludes followed by Vote of Thanks and Certificate Felicitations

Day-1
Keynote Presentations

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THREE-DIMENSIONAL SPINAL CANAL MORPHOMETRIC ANALYSIS AND RELEVANT SPINAL CORD OCCUPATIONAL RATIOS IN CONGENITAL CERVICAL SPINAL STENOSIS: A CLASSIFICATION ALGORITHM OF THE STENOSIS PHENOTYPES AND DATA DRIVEN DECOMPRESSION APPROACH

Sameer A. Kitab

University of Al-Qadisiyah, Iraq

Abstract

Objectives: No standardized MRI parameters have defined the three-dimensional morphoanatomy and relevant spinal cord occupation ratios (occupation of spinal cord dimensions/similar dimensions within the spinal canal) in congenital cervical stenosis CCS.

Methods: A retrospective, comparative analysis was conducted on 200 patients >18 years of age with myelopathy (mean age, 52.4 years) and CCS and 200 age-matched controls with no myelopathy or radiculopathy. The variables assessed from high resolution MRI included sagittal and axial spinal canal dimensions (MRI Torg ratios) from C3-C7. Morphometric dimensions from the sagittal retrodiscal and retrovertebral regions as well as axial MRI dimensions were compared. Sagittal and axial spinal cord occupation ratios were defined and correlated with spinal canal dimensions.

Results: Multivariate analyses indicated reduced sagittal and axial anteroposterior AP spinal canal dimensions and a large reduction in transverse spinal canal dimensions at all spinal levels. There was a small significant correlation between AP sagittal spinal canal dimensions and axial transverse spinal canal dimensions at C3-C5, but not at C5-C6. Small correlations were noted between AP sagittal spinal canal dimensions and AP axial spinal cord and axial cross-sectional area occupation ratios at C3-C6, but there was no correlation with axial mediolateral spinal cord occupation ratios.

Conclusion: The stenosis effect can involve any dimension, including the transverse spinal canal dimension, independent of other dimensions. Owing to the varied observed morphoanatomies', a classification algorithm that defines CCS specific phenotypes was formulated. Objectivizing the stenosis morphoanatomy may allow for data-driven patient-focused decompression approaches in the future.

Biography

Sameer A. Kitab was born on November 1, 1964, in Iraq. He is a professional in orthopedics, married to pharmacist Lamees A. Al-Azzawy, with three children: Samar, Mary, and Tariq. He graduated from Baghdad University with an M.B.Ch.B. in 1988 and earned an F.I.C.M.S. in Orthopedics in 1996. He started as a Staff Orthopedic Surgeon at Ad-Diwaniyah Teaching Hospital (1997-1999) and became a Senior Lecturer at AdDiwaniya Medical College in 1998. He then led the Anatomy and Surgery Departments at Ad-Diwaniya Medical College and Teaching Hospital from 1999 to 2003. He became an Assistant Professor and Assistant Scientific Dean in 2000. Since 2004, he has directed the Spine Surgery Specialized Unit and became a Tenured Full Professor at Al-Qadisiyah University in 2014. He founded and supervises the spine fellowship program and the AdDiwaniyah Training Spine Center, overseeing postgraduate doctoral training in orthopedic studies. He also reviews for the Journal of the American Academy of Orthopedic Research and PLOS. His career is dedicated to advancing orthopedic education, research, and practice.

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HYPNOSIS THERAPY FOR SELF-ESTEEM IN PEDIATRIC PRACTICE

P Castelnau, C Gaisne, M Hazard and M Perivier

Tours University, France

Abstract

Background: A number of pediatric conditions are chronic, such as attention-deficit/hyperactivity disorder (ADHD), idiopathic epilepsies or anxiety disorder. All carry an impact on self-esteem (SE) with consequences on the quality of life and academic outcome. Hypnosis is a therapeutic strategy that consists in putting into trance an individual who becomes receptive to appropriate suggestions. Such an approach is now considered a simple and safe therapy with limited cost. In ADHD, self-esteem issues are not adequately addressed by stimulant medications. Conversely, self-esteem reinforcement may be obtained through hypnosis. To restore an adequate self-esteem level in ADHD patients, we compared the benefits of Therapeutic Hypnosis (TH) with Neutral Hypnosis (NH).

Methods: In a first pilot study, we included patients with ADHD, idiopathic epilepsies, or anxiety disorder and a low self-esteem (n=14). Secondly, a monocentric single-blind controlled study was conducted on confirmed ADHD patients aged from 9 to 16 years old (n=26). In this study, a Therapeutic Hypnosis (TH) group underwent hypnosis trance including specific metaphorical suggestions whereas the NH group underwent the trance with non-specific scripts. In both studies, self-esteem was assessed using the Jodoin 40 scale and a self-assigned self-esteem score at the beginning and at the end of the hypnosis session.

Results: Among the 14 children included, 11 were studied (6 ADHD, 1 anxiety disorder, 4 idiopathic epilepsies). Final comparisons showed that self-esteem significantly improved regarding the Jodoin 40 scale and the self-assigned self-esteem score ($p \leq 0.05$). In the second study focusing ADHD, the self-esteem level in the TH group (n=16) increased significantly ($p < 0.05$), regardless of the operator; whereas the self-esteem level remained stable in the NH group (n=10).

Conclusion: These studies illustrates the feasibility of therapeutic hypnosis in clinical practice for improving self-esteem in chronic pediatric conditions.

Biography

P. Castelnau is working as a professor at Tours University, France

Day-1
Oral Presentations

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RECOVERY OF SLEEP-DEPENDENT CONSOLIDATION AFTER STROKE

Jaekyung Kim, Seokjoon Won and Karunesh Ganguly

Korea Advanced Institute of Science and Technology (KAIST), South Korea

Abstract

Background: Stroke is a leading cause of motor disability; despite advancements in rehabilitation, there are no widely used therapies to augment plasticity and improve function. Importantly, it is now clear that a major function of sleep is to regulate neuroplasticity. Thus, optimizing sleep processing during rehabilitation has the great potential to enhance recovery. However, it remains unclear precisely how sleep processing is affected by stroke.

Objective: To examine the alteration and recovery of sleep-dependent neural processing after stroke induction.

Methods: We used an experimental stroke model, a focal cortical lesion of motor cortex in rats. To examine the alterations in NREM sleep microarchitecture during recovery after stroke, we implanted microelectrode arrays in the perilesional cortex. To specifically identify phases of the motor recovery, we measured motor performance in a single pellet reach-to-grasp task.

Results: We show that sleep-dependent neural processing is altered after stroke induction. We found that the precise coupling of spindles to global slow-oscillations (SO), a phenomenon that is known to be important for memory consolidation, was disrupted by a pathological increase in "isolated" local delta waves. The transition from this pathological to a more physiological sleep state – with both a reduction in isolated delta waves and increased spindle coupling to SO – was associated with sustained performance gains after task training during recovery. Interestingly, post-injury sleep processing could be pushed towards a more physiological state via a pharmacological reduction of tonic GABA.

Conclusion: Our results suggest that sleep processing after cortical brain injuries may be impaired due to an increase in local delta waves and that restoration of physiological processing is important for recovery of task performance.

Biography

Jaekyung Kim is an Assistant Professor at the Korea Advanced Institute of Science and Technology (KAIST) since July 2023. Prior to this appointment, he conducted postdoctoral research at the University of California, San Francisco (UCSF), and the Veterans Affairs Medical Center in San Francisco. Dr. Kim's research is centered around unraveling the intrinsic neural networks underlying motor learning and memory processes. These endeavors have deepened his fascination with exploring the fundamental principles of sleep-dependent processing and its role in forming motor memory during long-term periods of learning.

PREDICTIVE RISK FACTORS FOR SEVERE RELAPSING NMOSD A SINGLE CENTER RETROSPECTIVE COHORT STUDY

Tang Jingliang Tommy and Hui Kwok Fai

United Christian Hospital, Hong Kong

Abstract

Background: Neuromyelitis optica spectrum disorder (NMOSD) is a rare autoimmune disease in the central nervous system. Since the discovery of serum antibody that target the water channel aquaporin-4 (AQP4) in 2004, NMOSD has been recognized as an autoimmune astrocytopathy, which is distinct from multiple sclerosis. The aim of the study is to collect more data to predict high relapse risk NMOSD, especially in Chinese populations.

Objective: To examine the predictive risk factor for severe relapsing NMOSD.

Methods: We had retrospectively collected data from patients with diagnosis of NMOSD according to the 2015 IPND diagnostic criteria by Wingerchuk. Patients were divided into two groups: non-severe relapsing group and severe relapsing group according to the definition. The demographic features, clinical presentation, laboratory and MRI features, treatment were evaluated and analyzed between the two groups.

Results: We reviewed 74 patient's data. 34 patients were in non-severe relapsing group and 40 patients were in severe relapsing group. We found that age of onset, coexisting autoimmune disease or presence of autoimmune antibodies, higher CSF IgG level and IgG index at first presentation, and ≥5 vertebral segments involvement in MRI showed statistically significant difference between two groups.

Conclusion: Patients with late-onset NMOSD, coexisting with other autoimmune diseases or positive autoimmune Ab, a higher IgG index, ≥5 vertebral segments involvement on MRI are associated with a severe relapsing NMOSD. Therefore, this group of patients should be identified and treated with more aggressively with therapies that have been newly approved.

Biography

Tang Jingliang Tommy is a member of Royal College of Physician (UK) and has completed his neurology training in Hong Kong in 2023. He expertise in autoimmune neurology and stroke medicine. He participates in research on autoimmune neurology, especially NMOSD.

INVESTIGATING URB597 ANTIDEPRESSANT ANXIOLYTIC AND ANTI-AVERSIVE PROPERTIES AS A POTENTIAL THERAPEUTIC TOOL

Weverton Castro Coelho-Silva, João William Almeida and Norberto Cysne Coimbra

University of São Paulo, Brazil

Abstract

Background: Cannabinoid type 1 receptors (CB1) play a crucial role in regulating mood, emotions, aversive fear responses, and panic in brain regions such as the rostral part of the neocortex of the frontal lobe, the basal ganglia, the substantia nigra, the periaqueductal gray matter, and the deep layers of the superior colliculus (cpCS). The globus pallidus (GP) has a high density of cannabinoid type 1 (CB1) receptors and type TRPV1 endovaniloids. Pharmacological tools have been essential in studying behavioral responses modulated by endocannabinoids. FAAH inhibitors have been shown to produce anxiolytic, antidepressant, and antinociceptive effects in rodents.

Objective: This study aimed to investigate the effect of physiological increase in anandamide and the role of presynaptic CB1 receptors in the GP in male mice subjected to two models of chronic anxiety and depression and confronted with a predator in a risk assessment (RA) model.

Methods: Initially, depressive-like behavior was induced using the restraint stress test (RST) and chronic social defeat stress (CSDS), and depressive-like behavior was subsequently tested using the splash test (ST) and forced swim test (FST). Naïve mice and those considered depressed were treated with microinjections of URB597 into the GP and then subjected to the RA model with either a fake (control) or real snake, with the recording of defense behavior in the risk assessment test.

Results: Mice subjected to 16 days of chronic stress tests developed anhedonia (****$p>0.0001$, $t=4.980$, $df=18$, N:10) and a significant increase in immobility time in the forced swim test compared to controls (**$p<0.005$, $t=3.380$, $df=18$, N=10). Treatment of the GP with URB597 (an FAAH inhibitor) at a dose of 1 nmol caused a significant decrease in anxiety-like behaviors: defensive alertness (U = 18; *$p < 0.05$), flat back approach (U = 0; ****$p < 0.001$), stretch attend posture (U = 0; ****$p < 0.001$), and panic-like behaviors (escape) (U = 11; **$p < 0.001$), highlighting a decrease in preference for the home cage in the RA when exposed to a real or fake snake.

Conclusion: These data suggest an anti-aversive effect of endogenous anandamide increase in the GP in an experimental model of mixed depression and anxiety disorder and point to the therapeutic potential of URB597 in modulating stress and anxiety-related behavior in animal models of depression, underscoring its relevance for future investigations in the field of endocannabinoid psychopharmacology.

Biography

Weverton Castro holds a bachelor's degree in Nursing from the Federal University of Mato Grosso (UFMT), with a major in Public and Mental Health, where he studied clinical pharmacology applied to sedative drugs in intensive care. He earned a Master's degree in Pharmacology from the University of Campinas (Unicamp) and completed a sandwich master's program at Carleton University in Canada, where he specialized in Neuroscience and Mental Health, studying ketamine as an antidepressant treatment in a mouse model. Currently, he is a Ph.D. candidate in Neuroscience at the Ribeirão Preto Medical School. He is conducting research at the Laboratory of Neuroanatomy and Neuropsychobiology, focusing on the endocannabinoid system during depression, anxiety, and panic disorder (mixed disorder) in animal models. This project involves collaboration with the Neuroscience Institute of Sorbonne University in Paris. He is a member of the Brazilian Society of Pharmacology and Experimental Therapeutics (SBFTE), where he serves as the Coordinator of the SBFTE Young Committee.

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ASTRAGALOSIDE IV ALLEVIATES CEREBRAL ISCHEMIA-REPERFUSION INJURY BY INHIBITING THE PROCESS OF NEURONAL FERROPTOSIS

Min Wei

Yangzhou University, China

Abstract

Background: As research progresses, there is increasing evidence that AS-IV has therapeutic effects in multiple systemic diseases. The aim of this study was to investigate the potential role of AS-IV in cerebral ischemia-reperfusion injury(CIRI) through ferroptosis.

Methods: In this study, the rat brain I/R injury model (tMCAO), rat adrenal pheochromocytoma cells (PC12) undergoing glyoxylation deprivation/reperfusion (OGD/R), and ACSL4 overexpression vector were used for the study. The corresponding kits were used to detect ferroptosis-related indexes, immunofluorescence and flow cytometry to detect reactive oxygen species (ROS) levels, qPCR, Western blot to detect the expression of key proteins and to explore the role of astragaloside in CIRI.

Results: AS-IV significantly improved the neurological function score, rat brain infarct volume, blood-brain barrier disruption, brain water content, and neuronal cell viability in tMCAO rats, while the results of subsequent ferroptosis-related indexes (e.g. Fe^{2+}, ROS, MDA, SOD) also indicated that AS-IV had an ameliorating effect on ferroptosis oxidative damage in tMCAO rats, OGD/R cells. Meanwhile, Western blot results showed that AS-IV inhibited ferroptosis by regulating the expression levels of Acyl-CoA synthetase long-chain family member 4 (ACSL4), glutathione peroxidase 4 (GPX4), ferritin heavy chain 1 (FTH1) and anti-transferrin receptor 1 (TfR1) in tMCAO rats, OGD/R cells. overexpression of ACSL 4 decreased the neuroprotective effect of AS-IV on OGD/R cells. Molecular docking analysis showed that AS-IV bound to ACSL4 through GLU107, GLN109, ASN111 and LYS357 sites.

Discussion: AS-IV can exert anti-oxidative stress effects and promote neurological recovery after stroke by inhibiting the expression of ACSL4 during ferroptosis, and is a promising drug that may be used to treat CIRI.

Biography

Wei Min, attending neurosurgeon. He serves as a youth committee member of the Neurosurgery Branch of the Jiangsu Integrated Traditional Chinese and Western Medicine Association, a member of the Cranial Trauma Committee of the Neurosurgery Branch of the Jiangsu Medical Association, and a member of the Photodynamic Therapy Committee of the Research Hospital Association of Jiangsu Province. He is also the secretary of the Youth Committee of the Neurosurgery Branch of the Yangzhou Medical Association. Currently, he is leading one hospital-level youth cultivation fund and one project on integrated Chinese and Western medicine research, while participating in several provincial and municipal-level projects. As the first or co-first author, he has published 7 SCI papers and 2 core papers in the Chinese Medical Journal series. He has received the Second Prize for Medical New Technology Introduction in Jiangsu Province, the Second Prize and Third Prize for Jiangsu Oncology Medical Science and Technology, the First Prize for Medical New Technology Introduction in Yangzhou City, and two Second Prizes for Medical New Technology Introduction in Yangzhou City. He also won the Third Prize in the Jiangsu Province Neurosurgery Young Physician English Speech Competition and the Excellence Award in the Neurosurgery Case Presentation Competition in the East China Division. Additionally, he holds two patents.

SPEECH EMBOLI IN THE CLINIC OF POST-STROKE SPEECH DISORDERS

Rasulova DK and Rasulova MB

Tashkent Medical Academy, Uzbekistan

Abstract

Background and Aims: In oral speech, one-quarter of stroke patients may experience speech emboli. Embolism (embolophrasia), being a speech stereotype, is usually observed in patients with severe Brocco afferent aphasia.

Aim: To determine embolophrasia in the clinic of speech disorders after a stroke.

Methods: In 2017-2022, more than 300 stroke patients were treated at the Neurology Department of the Tashkent Medical Academy. We selected 23 patients (13 men and 10 women) with motor aphasia, whose speech in the recovery period had the form of embolophrasia.

Results: In all patients, the stroke occurred in the basin of the middle cerebral artery on the left. Embolic words consisted of different words. For example, in our patients in the form of "bopti-bopti", "kal-kul", "da-dada" and other similar words. All patients had mild or moderate hemiparesis. After 3 months, positive changes were noted in the motor sphere of patients: many patients could walk even with a semi-paralyzed body, but no dynamics of embolophrasia was observed.

For example: one patient with speech embolophrasia understood everything (walked, ate on her own), but all speech skills changed to the phrase "kalk-kul". Speech embolisms were expressed violently, and the patient was not able to "suppress" them on her own.

Conclusion: Despite the nature of involuntary and uncontrolled origin, embolophrasias have important communicative functions, and patients cannot get rid of themselves. In order to prevent speech emboli, basic speech therapy sessions with a speech therapist should be started in the acute period of a brain catastrophe.

Biography

Rasulova Dilbar Kamalitdinovna is a Doctor of the highest category, has a Ph.D. in Medical Science in Neurology department at Tashkent medical academy. Her main area of practical experience in the treatment and rehabilitation of stroke patients.

ABNORMALITIES OF BRAIN STRUCTURE AND FUNCTION IN CERVICAL SPONDYLOSIS: A MULTI-MODAL VOXEL-BASED META-ANALYSIS

Jianxin Zhang and Lulu Cheng

China University of Petroleum (East China), China

Abstract

Background: Previous neuroimaging studies have revealed structural and functional brain abnormalities in patients with cervical spondylosis (CS). However, the results are divergent and inconsistent.

Objective: To investigate the consistent structural and functional brain alterations in CS patients.

Methods: A comprehensive literature search was conducted in five databases to retrieve relevant resting-state functional magnetic resonance imaging (rs-fMRI), structural MRI and diffusion tensor imaging (DTI) studies that measured brain functional and structural differences between CS patients and healthy controls (HCs). Separate and multimodal meta-analyses were implemented, respectively, by employing Anisotropic Effect-size Signed Differential Mapping software.

Results: 13 rs-fMRI studies that used regional homogeneity, amplitude of low-frequency fluctuations (ALFF) and fractional ALFF, seven voxel-based morphometry (VBM) studies and one DTI study were finally included in the present research. However, no studies on surface-based morphometry (SBM) analysis were included in this research. Due to the insufficient number of SBM and DTI studies, only rs-fMRI and VBM meta-analyses were conducted. Rs-fMRI meta-analysis showed that compared to HCs, CS patients demonstrated decreased regional spontaneous brain activities in the right lingual gyrus, right middle temporal gyrus (MTG), left inferior parietal gyrus and right postcentral gyrus (PoCG), while increased activities in the right medial superior frontal gyrus, bilateral middle frontal gyrus and right precuneus. VBM meta-analysis detected increased GMV in the right superior temporal gyrus (STG) and right paracentral lobule (PCL), while decreased GMV in the left supplementary motor area and left MTG in CS patients. The multi-modal meta-analysis revealed increased GMV together with decreased regional spontaneous brain activity in the left PoCG, right STG and PCL among CS patients

Conclusion: This meta-analysis revealed that compared to HCs, CS patients had significant alterations in GMV and regional spontaneous brain activity. The altered brain regions mainly included the primary visual cortex, the default mode network and the sensorimotor area, which may be associated with CS patients' symptoms of sensory deficits, blurred vision, cognitive impairment and motor dysfunction. The findings may contribute to understanding the underlying pathophysiology of brain dysfunction and provide references for early diagnosis and treatment of CS.

Biography

Jianxin Zhang, a Ph.D student at China University of Petroleum (East China), majored in language service engineering and management, and is mainly engaged in research of pragmatics and language pathology. She has conducted and participated in the research of brain activation patterns of rhetorical comprehension in individuals with autism spectrum disorders, abnormalities of brain structure and function in cervical spondylosis, and neural mechanisms of memory consolidation in patients with anxiety disorders.

ALTERATIONS IN DEGREE CENTRALITY AND FUNCTIONAL CONNECTIVITY IN TENSION-TYPE HEADACHE: A RESTING-STATE FMRI STUDY

Xiaomeng Xue and Lulu Cheng

China University of Petroleum (East China), China

Abstract

Background: Tension-type headache (TTH), also known as tension headache, muscle contraction headache, psychogenic headache, or pressure headache, is the most prevalent type of headache in all age groups worldwide. Previous studies have provided evidence of structural and functional changes in the brains of patients with tension-type headache (TTH).

Objective: The present study aimed to investigate abnormal intrinsic functional connectivity patterns in patients with TTH through the voxel-wise degree centrality (DC) method as well as functional connectivity (FC) analysis.

Methods: A total of 33 patients with TTH and 30 healthy controls (HCs) underwent resting-state functional magnetic resonance imaging (rs-fMRI) scanning and were enrolled in the final study. The voxel-wise DC method was performed to quantify abnormalities in the local functional connectivity hubs. Nodes with abnormal DC were used as seeds for further FC analysis to evaluate alterations in functional connectivity patterns. In addition, correlational analyses were performed between abnormal DC and FC values and clinical features.

Results: Compared with HCs, patients with TTH had higher DC values in the left middle temporal gyrus (MTG.L) and lower DC values in the left anterior cingulate and paracingulate gyri (ACG.L) (GRF, voxel-wise $p<0.05$, cluster-wise $p<0.05$, two-tailed). Seed-based FC analyses revealed that patients with TTH showed greater connections between ACG.L and the right cerebellum lobule IX (CR-IX.R), and smaller connections between ACG.L and ACG.L. The MTG.L showed increased FC with the ACG.L, and decreased FC with the right caudate nucleus (CAU.R) and left precuneus (PCUN.L) (GRF, voxel-wise $p<0.05$, cluster-wise $p<0.05$, two-tailed). Additionally, the DC value of the MTG.L was negatively correlated with the DASS-depression score ($p=0.046$, $r=-0.350$).

Conclusion: This preliminary study provides important insights into the pathophysiological mechanisms of TTH, which enhancing the understanding of neuroimaging in patients with TTH.

Biography

Xiaomeng Xue, a PhD student at China University of Petroleum (East China), has her expertise in speech pathology. She has explored the neural mechanisms of different diseases in the brain by using fMRI and ERP technology. She has investigated abnormal intrinsic functional connectivity patterns in patients with tension-type headache (TTH) through the voxelwise degree centrality (DC) method as well as functional connectivity (FC) analysis. This research laid the foundation for her involvement in the study of the neural mechanisms of children with autism spectrum disorder. These preliminary studies provide important insights into the pathophysiological mechanisms of tension-type headache patients and autistic children.

DIGITAL INTERVENTIONS IN NEURO-REHABILITATION: GOTCHA! TRIAL OF AN APP-BASED THERAPY FOR PROPER NAME ANOMIA IN PEOPLE WITH DEMENTIA

Aygun Badalova[1], Catherine Doogan[3], George O'Neill[1], Josh Stott[4] and Alex Leff[1,2]

[1]University College London, UK
[2]University College London Hospitals NHS Trust, UK
[3]St George's, University of London, UK
[4]ADAPT Lab, UK

Abstract

Background: Proper name anomia is a common experience that can become unpleasantly amplified in people with dementia (PWD). The Gotcha! app aims to provide practice-based therapy for PWD enabling them to spontaneously retrieve the names of key people in their lives. It has been developed using the principles of errorless learning and spaced retrieval pioneered by Clare et al, (2000, 2003), but packaged in an app to support self-management.

Methods: Gotcha! is a digital confrontation naming therapy app. PWD supply images and names of the people they want to be able to name and train on one face per day for six weeks. We employed a single-case experimental design with weekly testing of free-naming in both six-week blocks (pre therapy and during therapy). A novel speech verifier was used to provide real-time feedback (Barbera et al. 2020). PWD also had an MEG scan before and after the therapy block where they attempt to name pictures of familiar (trained) and famous (untrained) faces. We interrogated the behavioural data in two ways: 1) a within-subject non-parametric analysis using Tau-U metric (Parker et al. 2011); 2) a parametric group analysis using an ANOVA. MEG data were analysed in SPM. We measured source localised gamma-band (30-80 Hz) power 0-1000 ms after the onset of a face. We ran a group-based 2x2 factorial analysis on the resultant images (familiar vs. famous; pre- vs. post-therapy) using a repeated-measures ANOVA to look for changes in power.

Results: The trial is ongoing (target = 45 PWD). Results from the first 20 PWD to complete the trial demonstrate:

1. Tau-U. 80% showed a positive trend with better naming during the training phase with 8/20 reaching statistical significance.

2. ANOVA showed a significant effect at the group level of training>baseline phase, $F_{(1,19)}=13.18$, $p=0.01$

Results from the MEG analysis of 14 PWD: We identified a large cluster of 813 voxels situated in the left ventral temporal lobe (MNI: -50 -28 -26, F=9.19, $p=0.004$) where gamma reduction was associated with training (pre-post) of familiar faces, but not (untrained) famous faces.

Conclusion: Gotcha! app-based therapy for proper name anomia works for the majority of PWD in our trial thus far. This is the first study to demonstrate that the left ventral temporal lobe region supports practice-based retrieval of familiar face-name associations in PWD. Being able to freely produce the name of a relative or loved one has a big impact on people's lives.

Biography

Aygun Badalova is a PhD candidate at the UCL Queen Square Institute of Neurology, researching Dementia and Alzheimer's within the Brain Repair and Rehabilitation department. My focus is on the Digital interventions in neuro-rehabilitation: neurorehabilitation of people with dementia experiencing difficulty recalling familiar people's names, a specific symptom known as proper name anomia. We are working with people with mild/moderate dementia, including AD/vascular and mixed, primary progressive aphasia, and dementia with Lewy bodies. My research investigating the efficacy of proper name anomia therapy has found evidence that intervention is effective and that behavioural improvements match with changes in the functional language and cognitive networks.

Day-1
Poster Presentations

EVOLUTION OF MEDICAL CARE ABOVE PATIENTS WITH MENTAL DISEASE FOR EXAMPLE THE OLDEST MENTAL HOSPITAL IN POLAND

Sonia Lazarz[1,2], Bartosz Nadolski[1,2], Slawomir and C Biedrzycki[1,2]

[1]*Regional Psychiatric Hospital for Neurologically and Mentally Ill Patients in Swiecie, Poland*
[2]*University of Science and Technology (Politechnika Bydgoska), Poland*

Abstract

The Psychiatric Hospital in Swiecie is Poland's oldest, still functioning hospital. On 1st of April 1855, after seven years of construction, originally named Westpreussischen Provinzial- Irren–Heil Und Pflege–Anstalt Schwetz, the neuropsychiatry centre with four buildings became available to treat 200 patients. They were mostly diagnosed with maniac-depression psychosis and dementia praecox.

The first psychiatric drugs administered to treat mentally ill patients were: morphine (till 1914), bromine salts (from 1857), chloral hydrate (from 1869) and scopolamine (from1880). The best "tranquilizing cocktail" was called "Hyoscine Co A" – it consisted of atropine, morphine and scopolamine. Before the First World War the hospital's school had provided educational classes for intellectually disabled patients.
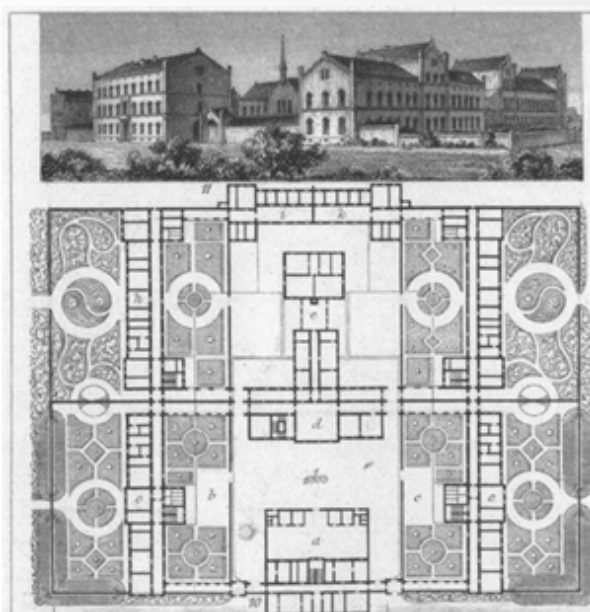
Apart from the pharmacological treatment - music

therapy, integration events and work placement therapies in bakeries, butcher's, tailor's, blacksmith, locksmith shops or farming were offered to patients. From 1928 commonly used types of remedy were malaria fever treatment, isolation and extended baths.

After the outbreak of World War II electroshocks, cardiazole shocks and inducing insulin comas were recommended for treatment. During the war the Psychiatric Hospital was closed, most of the patients were killed by nazi soldiers. Hospital buildings were used as Nursing Homes for Seniors.

On 1th of May 1945 the Hospital reopened. At that time the most common treatment was insulin-therapy The first neuroleptic drugs - chlorpromazine and reserpine – have been used since 1956. Fotostymulation has become popular since 1984. "New" antidepressant drugs were first administered in 1992 and "new" antipsychotic drugs (clopenthixol, stelazine, sulpiride, levomepromazine) were in use from 1991.

Regional Psychiatric Hospital for Neurologically and Mentally Ill Patients celebrates its 169th founding anniversary this year. Each year thousands of patients are being treated there according to the latest psychiatric recommendations.

Biography

Sonia Lazarz graduated in 2014 form the Collegium Medicum University of Nicolaus Copernicus in Torun. a She is working at Regional Psychiatric Hospital for Neurologically and Mentally Ill Patients in Swiecie, Poland. She is working in the forensic psychiatry ward.

ASSOCIATION BETWEEN BELIEFS ABOUT DEMENTIA PREVENTION AND SELF-EFFICACY WITH COGNITIVE DECLINE: A 24-WEEK MULTIDOMAIN INTERVENTION STUDY

Joung Hwan Back[1] Gaeun Kim[1], Chae Won Lee[1], Cho Yong Hyuk[2], Chang Hyung Hong[2] and Yo-Chan Ahn[1]

[1]Daejeon University, Republic of South Korea
[2]Ajou University School of Medicine, Republic of South Korea

Abstract

Background: Cognitive decline in older adults includes declines in memory, attention, visuospatial function, and executive function, as well as metacognition, which is an objective measure of one's performance. Older adults with reduced metacognition may be overconfident in their abilities, which requires attention from clinicians who rely heavily on patient reports to decide treatment strategies. However, few studies have looked at false self-efficacy in older adults with reduced metacognition.

Objective: To examine the association between beliefs about dementia prevention and Self-efficacy on cognitive function, following the 24-week implementation of a multidomain intervention program.

Methods: Data from the SUPERBRAIN study, comprising 96 subjects (71.9% women), 50–80 (71.1 ± 4.9) years old in 2019, were used. Beliefs about dementia prevention encompass the perceived effective of the SUPERBRAIN Program in reducing the risk of dementia, with self-efficacy evaluated based on four criteria: consistent exercise habits, adherence to a balanced diet, engagement in lifelong learning, and proactive management of chronic conditions, with cognitive function assessments at baseline and 24 weeks later. Data were analysed using a Multiple logistic regression analyses

Results: Only adherence to a balanced diet among the beliefs about dementia prevention and Self-efficacy was consistently associated with incident cognitive impairment after the logistic regression adjustments for sociodemographic factors, family history of dementia, health behaviors, depressive symptoms, and daily activities.

Conclusion: This is the first study to examine the relationship between subjective self-efficacy and changes in cognitive functioning in older adults who participated in a 24-week cognitive intervention. The study may suggest clinical implications that subjective reports of self-efficacy, including performance, are insufficient when clinically assessing older adults with cognitive decline. Future research should attempt to include more explicit links between self-efficacy and metacognition, and imaging variables of cognitive processes.

Biography

Joung Hwan Back is working as a assistant professor at Daejeon University, Republic of South Korea

NEUROIMAGING ASSESSMENT OF THE THERAPEUTIC MECHANISM OF ACUPUNCTURE AND BEE VENOM ACUPUNCTURE IN PATIENTS WITH IDIOPATHIC PARKINSON'S DISEASE: A DOUBLE-BLIND RANDOMIZED CONTROLLED TRIAL

Seong-Uk Park, Seung-Yeon Cho, Jung-Mi Park and Chang-Nam Ko

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Abstract

Objective: The purpose of this study was to explore the therapeutic mechanism of acupuncture and bee venom acupuncture (BVA) in patients with idiopathic Parkinson's disease (IPD) using positron emission tomography (PET) and arterial spin labeling (ASL).

Methods: Patients with IPD who received a stable dose of anti-parkinsonian medication for at least 4 weeks were recruited and randomly divided into one of two groups: treatment and control. The treatment group (11 subjects) received acupuncture and BVA at acupoints, and the control group (9 subjects) received sham acupuncture and normal saline injections at non-acupoints, twice per week for 12 weeks. The patients were examined using PET and ASL at baseline and after the 12-week treatment. In addition, age- and sex-matched healthy subjects without neurological symptoms and history were recruited to compare ASL data of patients with IPD.

Results: PET results revealed that striatal dopamine transporter binding increased in each group after 12 weeks. Although the change was larger in the treatment group, the difference was not statistically significant. In ASL results, the treatment group exhibited hyperperfusion in specific regions compared with the healthy control group. After 12 weeks' intervention, hyperperfusion regions were recovered only in the treatment group. In contrast, significant changes were not found in hyperperfusion regions in the control group after 12 weeks.

Conclusion: Our findings suggest that the therapeutic mechanisms of acupuncture and BVA in IPD are different from placebo and operate by altering dopamine availability and recovering hyperactivity in cerebral blood flow.

CLOZAPINE - IS IT A BAD CHOICE? - SAFETY OF USAGE OF CLOZAPINE IN POLAND

Sonia Lazarz[1,2] and Bartosz Nadolski[1,2]

[1]*Regional Psychiatric Hospital for Neurologically and Mentally Ill Patients in Swiecie, Poland*
[2]*University of Science and Technology (Politechnika Bydgoska), Poland*

Abstract

Clozapine is a psychiatric medication called the first atypical antipsychotic drug. In the beginning it was used to treat patients with schizophrenia, schizoaffective disorder or psychosis due to brain damage and dysfunction.

In Poland clozapine is recommended for drug-resistant disease (over 1/3 of patients diagnosed with schizophrenia) - for patients that had not responded to at least two other antipsychotics or do not tolerate other drugs for example because of their extrapyramidal side effects.

The most common and life-threatening adverse effects of clozapine are: pneumonia, sudden cardiac arrest, agranulocytosis, myocarditis, constipation, cardiac arrhythmia, epileptic seizures and fainting.

The optimal serum concentration of clozapine is between 350 and 600 ng/ml.

Clozapine dose escalation regimen for patients in Europe and West Asia:

1st week - 25 mg of clozapine at night. Monitoring of blood pressure and heart rate is advised. If the drug tolerance is good - increase the dose to 100 mg before the end of the first week. Remember that two-thirds of the dose should be given at night.

2nd week - increase the dose twice within a week of 50 mg. At the end of the second week the dose of clozapine should be 200 mg.

3rd week - if the further tolerance of treatment is good, continue the dose increase two times per week of 25 mg till the dose 250 mg (for no-smoking women) and 300 mg other patients.

4th week and next – add 25 mg per week if necessary.

Monitoring and managing the clozapine treatment:

1. While initiating the treatment, the morphology test with a blood smear once a week for 18 weeks is recommended and later once a month. Clozapine should not be administered if the patient's white blood cell count (WBC) is under 3500 mm^3.

2. If the WBC is under 3000 mm^3 and the number of granulocytes is less than 1500 m^3 the therapy with clozapine is not advised.

3. The haematology consultation is required if the WBC is under 2000 mm^3 and the number of granulocytes is less than 1000 m^3.

4. Patients with heart disease should be consulted with an internist or a cardiologist before starting the treatment.

Biography

Sonia Lazarz graduated in 2014 form the Collegium Medicum University of Nicolaus Copernicus in Torun. a She is working at Regional Psychiatric Hospital for Neurologically and Mentally Ill Patients in Swiecie, Poland. She is working in the forensic psychiatry ward. She is working with the patients with treatment perspectives for paitients.

NEUROLEPTIC MALIGNANT SYNDROME IN ANTI-N-METHYL-D-ASPARTATE RECEPTOR ENCEPHALITIS – A CASE REPORT

P Thineshan, JAA Jayakody, DN Weerathunga and A Fernando

National Hospital of Sri Lanka, Sri Lanka

Abstract

Background: Anti-N-methyl-D-aspartate receptor (anti-NMDAR) encephalitis is a difficult diagnosis presenting with neuropsychiatric manifestations. Neuroleptic malignant syndrome (NMS) not only share most of the features with anti NMDAR encephalitis but also it can develop as a consequence of antipsychotic use in these patients.

Case Presentation (Report): We describe a 30 year old male with no previous psychiatric history, initially presented to psychiatry unit (PU) with aggressive behaviour and altered level of consciousness (LOC) and was given antipsychotics. He developed one generalised tonic-clonic seizure and reduced LOC and was transferred to our neurology unit. High serum creatinine phosphokinase (CPK) and creatinine were detected at PU before the seizure. On admission, he had high fever, generalised muscle rigidity and hyper-reflexia. He was managed at intensive care unit with respiratory support, intravenous meropenam, aciclovir and treated as for NMS with hydration and bromocriptine. Further history revealed that he initially had low-grade fever and headache with behavioural abnormalities. Despite the initial management, he had persistent fever with reduced LOC and developed orofacial dyskinesia. There was an ill defined T2 hyperintensity in left insular cortex and external capsule with no contrast enhancement or diffusion restriction in his initial magnetic resonance imaging (MRI) of the brain which was reduced in size and hyperintensity in the repeat MRI. His cerebrospinal fluid anti-NMDAR antibodies became positive. He had a marked improvement following initial immunotherapy and currently doing well.

Discussion: As patients with autoimmune encephalitis with psychiatric symptoms initially been managed with antipsychotics they have a high chance of developing NMS. This further complicates the disease process leading to diagnostic difficulty and treatment delay. Timely identification and immunotherapy lead to better outcome. More studies are warranted to differentiate whether NMS is caused by the antipsychotics given or it could be a feature of anti NMDAR encephalitis.

Biography

Pavithra Thineshan is a trainee in Neurology, currently attached to Institute of Neurology at National Hospital of Sri Lanka. She is interested in all neurological disorders especially immune mediated disorders. She is interested in doing research in this topic and keen to explore more treatment options as immune mediated neurological disorders affect more young adults resulting in morbidity and mortality. More research is needed in this entity at the local setting. She is very eager to study more in this topic from the experts all over the world. This way she wants to serve her country and the patients.

Coalesce Research Group

8th International Conference on
Neurology and Brain Disorders
October 21-22, 2024 | ANA Crowne Plaza Narita, Tokyo, Japan

EUTERPE MUSIC THERAPY METHOD FOR CHILDREN WITH CEREBRAL PALSY

Tommaso Liuzzi[1,2], Fiammetta D'Arienzo[1], Sarah Bompard[1], Massimiliano Raponi[1], Susanna Staccioli[1], Eleonora Napoli[1], Martina Frascari Diotallevi[1], Simone Piga[5], Roberto Giuliani[2] and Enrico Castelli[1]

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[2]*Santa Cecilia Conservatory of Music, Italy*

Abstract

Introduction: The main purpose of our study was to evaluate whether involvement in a personalized music therapy program (Euterpe method), could improve the condition of children with cerebral palsy and their parents, compared to a control group. It investigated whether it could positively affect children's sleep quality, temperament and quality of life, quality of family life, and parental stress.

Methods: A prospective single-center experimental study was conducted at "Bambino Gesù" Children's Hospital (Rome, Italy). All subjects involved attended an intensive rehabilitation program in the Neurorehabilitation Unit. In a group of patients ($n = 25$), a music therapy treatment was applied to evaluate the effect before and after the intervention. This group was also compared with a control group ($n = 10$) undergoing a standard protocol without music therapy.

Results: In the experimental group, the analysis shows statistically significant effects in the Disorders of initiating and maintaining sleep ($p = 0.050$) and the Sleep wake transition disorders ($p=0.026$) factors, and the total score ($p=0.031$) of Sleep Disturbances Scale for Children; the Positive emotionality scale ($p = 0.013$) of Italian Questionnaires of Temperament (QUIT); the Emotional Functioning ($p=0.029$), Social Functioning ($p=0.012$), Worry ($p=0.032$), Daily Activities ($p=0.032$), Total Score ($p=0.039$) and Parent HRQL Summary Score ($p=0.035$) dimensions of Pediatric Quality of Life for family. While in the control group, only the Attention scale of QUIT ($p = 0.003$) reaches statistical significance.

Discussion: Our study indicates that music therapy using the Euterpe Method, through personalized therapeutic compositions, positively impacts important aspects of the lives of children and their parents. Notable improvements were observed in sleep patterns, emotional regulation, and overall family quality of life.

Biography

Tommaso Liuzzi is a distinguished expert in music therapy with advanced training from prestigious Italian institutions. He holds postgraduate Master's degrees in Music Therapy and Autism Spectrum Disorder, along with Master's degrees in Orchestral Conducting, Clarinet, and Management in Educational Services. Liuzzi is the creator of the Euterpe Method, an innovative approach for treating and rehabilitating individuals with specific needs through music therapy. He received a high distinction from UNESCO at the Invention Fair in Kuwait City. As a researcher, he collaborates with the Pediatric Hospital Bambino Gesù and the Santa Cecilia Conservatory in Rome, conducting advanced neurorehabilitation studies. He also partners with numerous Italian and Lebanese institutions, including Guglielmo Marconi University of Rome, Université Saint-Esprit de Kaslik USEK, Notre Dame de Secours University Hospital, and Saint George in Beirut, promoting the Euterpe Method and training professionals. He has authored scientific publications in international journals

Coalesce Research Group

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PREDICTION OF THE REHABILITATION POTENTIAL OF STROKE PATIENTS ACCORDING TO COMORBIDITY INDICATORS AND THE NIHSS SCALE

Rasulova DK, Rasulova MB and Yusupova IA

Tashkent Medical Academy, Uzbekistan

Abstract

Stroke is the culmination of concomitant diseases. In acute cerebrovascular circulatory disorders, co-morbidity of stage II-III hypertension and coronary heart disease were most often observed in 86% and 100% of cases, respectively.

The purpose of the study: Prediction of rehabilitation potential (RP) according to comorbidity indicators and the NIHSS scale.

Research materials and methods: We examined 214 patients with hemispheric strokes. Left-hemisphere-123 (57.4%), right-hemisphere-91(42.5%) patients. Patients aged 60-69 years prevailed. According to the severity of neurological deficit, patients were divided into 4 groups: 1 gy-66 patients with mild paresis (NIHSS-5-6 points); 2 gy-48 with moderate paresis (NIHSS-7-8 points); 3 gy-49 of moderate severity (NIHSS-8-9 points); and 4 gy-51 patients with severe paresis-plegia (NIHSS-more than 10 points).

The results and their discussion: The examined patients were more likely to have: GB in 209 (98%), DM in 77 (60%). Indicators of the severity of comorbid conditions were assessed by the Charlson index-CCI. It varied from 2 to 7 points, but more with a score of 3 in patients with 1 gy 27(36.5%); in patients with 2 gy-5 CCI 16 (33.3%), 3 gy - in 15(36.6%), in patients with 4 gy - 18 (35.3%). But high CCI indices of 6-7 points prevailed in patients with 4 gy with plegia. Right hemisphere localization of stroke also prevailed in group 4. As a result, the lower the score on the CCI scale (2-3 points) and the lower the scores on the NIHSS scale -5-6 points -patients had a good RP. That is, young patients with mild paresis have a higher chance of recovery by age. And in patients of group 4 with severe neurological deficiency-plegia and high CCI scores from 7-8 points-RP was low or poor.

Conclusion: The severity of comorbid conditions in stroke patients was assessed. CCI and NIHSS scores increase proportionally as the age of patients increases and the severity of neurological deficits increases. The combined use of these scales is effective in predicting patients' RP.

Biography

Rasulova Dilbar Kamalitdinovna is a Doctor of the highest category, has a Ph.D. in Medical Science in Neurology department at Tashkent medical academy. Her main area of practical experience in the treatment and rehabilitation of stroke patients.

PRELIMINARY PHARMACODYNAMIC MECHANISM ANALYSIS AND CLINICAL EFFICACY VALIDATION OF TOUTONGTING DECOCTION IN MIGRAINE: FROM ANIMAL EXPERIMENT TO CLINICAL TRIAL

Shaojie Duan[1], Ziyao Wang[2], Hui Xia[3], Zhiying Ren[2], Wenyan Ding[1], Zaixiang Shi[4], Tao Zheng[2], Guanglu Li[2] and Zunjing Liu[5]

[1]*Taizhou Central Hospital, China*
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[3]*Guangzhou University of Chinese Medicine, China*
[4]*China-Japan Friendship Hospital, China*
[5]*Peking University People's Hospital, Beijing, China*

Abstract

Background: Migraine is a highly prevalent and disabling disease. Toutongting decoction (TTTD) is a famous nationally patented herbal formula for treating migraine in China, and its urgently to elucidate its efficacy and mechanisms.

Objective: This study aimed to elucidate the main pharmacochemical components of TTTD, to preliminarily investigate its pharmacodynamic mechanism, and to verify its clinical efficacy.

Methods: The ultra-high performance liquid chromatography coupled with mass spectrometry (UHPLC- MS/MS) method was used to determine the pharmacochemical components of TTTD. In animal experiments, nitroglycerin-induced migraine rat model was used to evaluate the Pharmacodynamic effects of TTTD and investigate its potential mechanisms. In the clinical study, a total of 66 migraine patients were enrolled in a prospective, randomized, controlled trial to evaluate the clinical efficacy of TTTD for migraine patients.
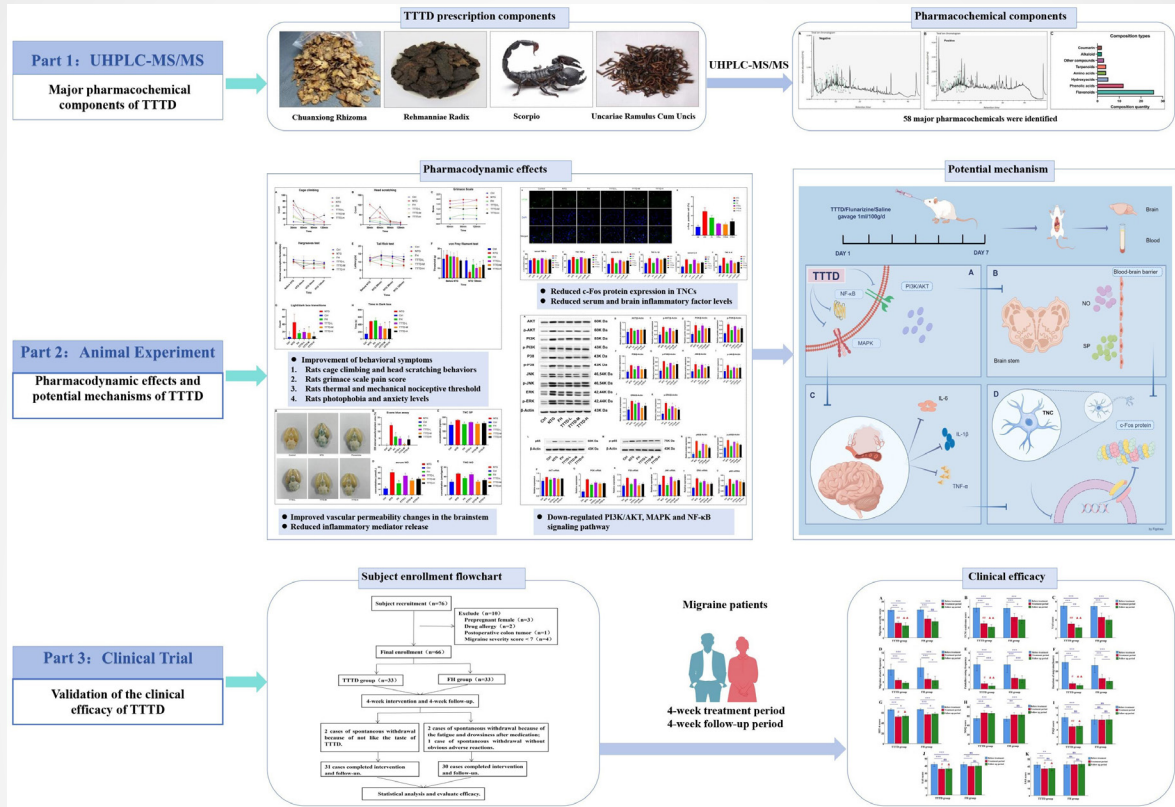
Results: The major pharmacochemicals of TTTD include flavonoids, phenolic acids, hydroxy acids, amino acids, terpenoids, alkaloids, coumarins, etc. The animal studies showed that TTTD significantly improved migraine-like behaviors and symptoms, including cage climbing and head scratching behaviors, grimace scale pain score, thermal and mechanical nociceptive threshold, photophobia and anxiety levels in migraine model rats. Meanwhile, TTTD down-regulated the expression levels of key proteins and mRNAs of PI3K/AKT, MAPK and NF-κB signaling pathways, decreased the levels of c-Fos protein in the trigeminal caudate nucleus cells, lowered the levels of pro-inflammatory cytokines in the brain tissues and serum, improved vascular permeability changes in the brainstem and reduced the release of inflammatory mediators such as neuropeptide substance P and nitric oxide. Clinical trials illustrated that the overall clinical effectiveness of TTTD on migraine patients was 87.10% and 90.32% at post-treatment and follow-up, respectively, which not only significantly reduced the severity of migraine, the frequency of attacks, the duration of each attack, and the frequency of painkiller use, but also effectively improved the anxiety, depression, and sleep quality of migraine patients.

Conclusion: TTTD has good efficacy in the treatment of migraine, and its potential pharmacodynamic mechanism may be closely related to the regulation of PI3K/AKT, MAPK, and NF-κB signaling pathways to improve neurogenic inflammation.

Graphical Abstract:

Biography

Shaojie Duan was born in a family of Chinese medicine practitioners, studied Chinese medicine since childhood and graduated from the China-Japan Friendship Clinical School of Medicine of Beijing University of Traditional Chinese Medicine. Dr. Duan has long been committed to clinical and basic research on migraine, and he has rich experience in the combination of Chinese and Western medicine in the diagnosis and treatment of migraine.

CHARACTERISTICS OF DEMENTIA PATIENTS ACCORDING TO GENERAL ANESTHESIA EXPERIENCE AFTER AGE 50

Kayoung Song

Veteran Health Service Medical Center, South Korea

Abstract

Background: Neurocognitive decline is a common occurrence among the elderly following surgery, yet evidence linking anesthesia as an independent risk factor for dementia remains limited.

Objective: This study investigates whether a history of anesthesia after age 50 contributes to the risk of mild cognitive impairment (MCI) and dementia, and examines differences in cognitive outcomes between elderly individuals with and without such a history.

Methods: Data were obtained from the Trial Ready Registry and Dementia Platform Korea, which elicited information on demographic and health indicators, standardizing the dementia dataset in Korea. The data for this study was collected from January 2021 to June 2023, of which a total of 762 were selected. Analysis was conducted using independent T-Tests and Chi-square tests for continuous and categorical variables, respectively, via the statistical package IBM SPSS.

Results: Among the 762 participants, 261 were normal, 291 had MCI, 210 had dementia. There were 209 individuals with anesthesia history post-50 (ANS+), and 553 without such experience (ANS-). In overall and normal groups, ANS+ group was older, less educated, had higher ApoE4 carrier% and standardized uptake value ratio(SUVR) than ANS-. Significant cognitive and functional differences favoring the ANS+ group were noted only in the dementia subgroup, with no significant differences in ApoE4 carrier status, SUVR, or amyloid PET positivity; MMSE z-score -3.04 ± 2.49 in ANS+ vs -4.58 ± 2.84 in ANS-(p=0.038), CDR sum of box 4.67 ± 2.90 in ANS+ vs 5.77±3.14 in ANS-(p=0.019), and GDS 4.07 ± 0.86 in ANS+ vs 4.39 ± 0.88 (p=0.023).

Conclusion: In this study, dementia patients with a history of anesthesia after age 50 showed better cognitive and functional outcomes than those without. These findings may warrant further investigation into the role of anesthesia and in dementia progression.

Biography

Kayoung Song, MD graduated medical college of Chung-Ang University. Majored geriatric psychiatry at Asan Medical Center in Seoul, South Korea. Now working at Department of Psychiatry, Veteran Health Service Medical Center, Seoul, South Korea. She has her expertise in evaluation and passion in improving the mental health and wellbeing of older people.

GERSTMANN SYNDROME WITH STROKE

Rasulova DK and Rasulova MB

Tashkent Medical Academy, Uzbekistan

Abstract

Speech, reading, writing, counting are interconnected higher brain functions of higher cortical centers. As a result of the tragedy of the brain, a person loses not only the ability to speak, but also the ability to read, write, understand others, and this is called Gerstmann's syndrome.

The aim of our work was to study the prevalence of Gerstmann's syndrome in patients with stroke.

Research method: In 2021-2022, we examined 60 patients who were hospitalized with a diagnosis of stroke. The focus of cerebral infarction was localized in the left hemisphere. To assess the ability to write and read, the scale "Testing the speech of patients with a stroke" was modified. Results. The age of the examined patients was in the range of 56-78 years. Among them, 38 men, 22 women. According to the forms of aphasia, 28 patients had motor aphasia, 12 had dynamic aphasia, and 20 had total aphasia.

The new modified scale, which includes reading and writing tests, showed that 100% of patients with speech disorders also had reading disorders. In 49 patients - agraphia, and in 11 patients, although the letter was preserved, a gross change in handwriting was found.

Conclusion: In patients with post-stroke aphasia with movement impairment, Gerstmann's syndrome should also be investigated. A new modified scale for the study of speech, which includes tests of reading and writing skills, helps to better assess the lost higher brain functions in patients with aphasia.

Biography

Rasulova Dilbar Kamalitdinovna is a Doctor of the highest category, has a Ph.D. in Medical Science in Neurology department at Tashkent medical academy. Her main area of practical experience in the treatment and rehabilitation of stroke patients.

DIFFERENTIAL DIAGNOSTIC PERFORMANCE OF B-TYPE NATRIURETIC PEPTIDE AND N-TERMINAL PRO B-TYPE NATRIURETIC PEPTIDE: POTENTIAL BIOMARKERS TO DIFFERENTIATE ISCHEMIC AND HEMORRHAGIC STROKE

Hyejeong Kim and Hyojin Chae

The Catholic University of Korea, Republic of Korea

Abstract

Background: Acute stroke management is critically time-sensitive and challenging. Blood-based biomarkers that can differentiate acute ischemic stroke (IS) from hemorrhagic stroke (HS) have the potential to significantly improve triage and early treatment strategies.

Objective: This study aimed to assess the diagnostic value of brain natriuretic peptide (BNP) and N-terminal pro-brain natriuretic peptide (NT-proBNP) in distinguishing HS from IS using blood samples obtained within 6 hours of stroke symptom onset.

Methods: BNP and NT-proBNP levels were measured using 165 patient samples, within 6 hours of stroke symptom onset, using chemiluminescence assay (CLIA) analyzers. Plasma BNP levels were measured using the Atellica IM B-Type Natriuretic Peptide (BNP) assay (Siemens Healthcare Diagnostics Inc., New York, USA) and NT-proBNP levels were assessed with the Elecsys proBNP II assay. BNP and NT-proBNP measurements were performed using the Atellica system (Siemens Healthcare Diagnostics Inc., New York, USA) and the Cobas e 801 module (Roche Diagnostics GmbH, Mannheim, Germany), respectively. Statistical analyses, including comparisons of ROC curves, were performed using MedCalc® Statistical Software (version 23.02; MedCalc Software Ltd, Ostend, Belgium).

Results: BNP levels ≤15.36 pg/mL showed a sensitivity of 75% and a specificity of 71.3%, while NT-proBNP levels ≤112 pg/mL showed a sensitivity of 68.2% and a specificity of 66.1% in distinguishing HS from IS. A comparison of ROC curves revealed significant differences between BNP and NT-proBNP ($p < 0.036$), with BNP demonstrating better diagnostic accuracy (AUCs 0.744 vs. 0.671).

Conclusion: These finding suggests that BNP concentration is a more informative blood biomarker for distinguishing ischemic from hemorrhagic stroke in the acute phase of stroke compared to NT-proBNP.

Day-2
Keynote Presentations

RECENT PRE-CLİNİCAL ADVANCEMENTS ON RADİOLABELED NANOPARTİCLES İN NUCLEAR NEUROLOGY

Emre Uygur[1] and Fazilet Zumrut Biber Muftuler[2]

[1]Manisa Celal Bayar University, Türkiye
[2]Ege University, Türkiye

Abstract

Molecular imaging has witnessed remarkable growth over the past three decades, driven by significant advancements in medical physics, chemistry, and biology. This interdisciplinary field provides invaluable insights into biological processes, greatly enhancing our understanding of health and disease. Concurrently, the explosive progress in the realm of nanotechnology, specifically nanoparticles (NPs), has revolutionized various scientific domains. NPs, characterized by their nanometer-sized dimensions, exhibit unique physical, chemical, and biological properties that have found applications across diverse fields such as energy, catalysis, and electronics. In the realm of biomedicine, NPs have garnered substantial attention, given their ability to interface directly with the intricate subcellular components, including nucleic acids, membranes, and proteins.

There is a pressing need for the development of innovative tools and methodologies to enhance the visualization of the brain and to assess the permeability of drugs across the blood-brain barrier (BBB). In nuclear neurology, to design NP based radioligand is one of the most studied topics in recent years. Positron emission tomography (PET) stands out as a remarkably sensitive and non-invasive technique, offering the capability to evaluate BBB permeability in both normal and disease-afflicted states.

This review aims to delve into the synergy between radioactive imaging and NPs in nuclear neurology for PET imaging so it will include these ongoing pre-clinical studies in the field of PET imaging with radiolabeled NPs. To start, it will provide an in-depth exploration of various NP platforms. Subsequently, it will delve into the methods employed for radiolabeling NPs with positron emitting radionuclides, enabling their utilization in Positron Emission Tomography / Computed Tomography (PET/CT).

In conclusion, the integration of radioactive imaging with the rapidly evolving field of nanotechnology, particularly involving nanoparticles (NPs), is considered to represent an innovative area in the field of molecular imaging in nuclear neurology. Furthermore, this review will include recent strides in the domain of multimodal nuclear imaging involving NPs and will shed light on ongoing efforts regarding the pre-clinical studies of these advancements and the promising trials currently underway.

Biography

Emre Uygur is a nuclear chemist currently affiliated with Manisa Celal Bayar University. He holds a Ph.D. in Nuclear Sciences from Ege University and has been involved in successful research projects supported by TÜBİTAK (The Scientific and Technological Research Council of Turkey). In addition to his TÜBİTAK-funded work, he has also served as a project coordinator and researcher in projects funded by the European Union and the United States. Dr. Uygur's research primarily revolves around the development of radiopharmaceuticals, with a specific focus on utilizing them for imaging neurodegenerative diseases, particularly Parkinson's disease. His studies contribute to the advancement of diagnostic approaches for neurodegenerative diseases as well as various types of cancer using radiopharmaceuticals.

Day-2
Oral Presentations

TOWARDS THE ASSESSMENT OF PATIENTS WITH DISORDERS OF CONSCIOUSNESS UNDER MORE NATURALISTIC CONDITIONS

Pazart Lionel, Aubry Regis, Moulin Thierry, Chabin Thibault, Haffen Emmanuel and Gabriel Damien

Centre Hospitalier Universitaire, France

Abstract

Background: Following severe head injury, recovery may be incomplete, leading to disorders of consciousness (DOC). Assessment of consciousness is an increasingly important issue in rehabilitation.

Aims: To assess the level of consciousness under more naturalistic conditions.

Methods: We have carried out several studies over the last decade to assess consciousness in a more 'natural' environment: (i) a qualitative study using photo-elicitation on representations of close relatives, (ii) reproduction and adaptation to HD-EEG of the Owen & Monti paradigm and the musical thrill paradigm using fMRI, (iii) exploration of brain regions involved in processing musical information, and (iv) a behavioural and EEG study using hyperscanning analysis of the sharing of musical emotion experienced by a group of individuals under naturalistic conditions.

Results: The interviews revealed the great suffering of the relatives and their fundamental questioning about the presence of 'consciousness' in an inert body. When we reproduced Monti's paradigm using fMRI and EEG on a sample of 32 healthy volunteers, almost a quarter of the subjects were unable to complete the task. The use of more personalised stimulation during brain imaging then became obvious. Many relatives had reported that the patient sometimes seemed present and sensitive to their voice or to familiar music. We have shown that in healthy volunteers, brain activity recorded in the regions involved in processing musical information remains significant when listening to familiar music is sporadically interrupted. We also reproduced the musical thrill paradigm from the fMRI studies and adapted it to the EEG. Finally, we showed that when individuals in a group (n=15) simultaneously reported high or low pleasure, their brain activity was closer together than when they simultaneously reported 'neutral' pleasure.

Conclusion: These different results now suggest the interest of a protocol using wireless EEG to study emotional sharing in relatives and DOC patients when they listen together to a familiar 'shivering' song.

Biography

Lionel Henri PAZART is a doctor of medicine, with a master's degree in public health and a doctorate in therapeutics. He is currently medical coordinator of the Inserm Clinical Investigation Center on Innovative Technologies at the Besançon University Hospital (Inserm CIC1431) and associate professor at the Faculty of Medicine and Pharmacy of the University of Franche-Comté, France. He led the Tech4Health network, which is a component of the French national clinical research infrastructure (F-CRIN), dedicated to the investigation of medical devices. He is a researcher in the Laboratory for Integrative Neuroscience and Cognitive Psychology (Inserm unit 1322 LINC).

Coalesce Research Group

8th International Conference on
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HARNESSING NEUROSCIENCE-INFORMED TEACHING STRATEGIES TO SUPPORT LANGUAGE DEVELOPMENT IN AN INCLUSIVE PRE-K CLASSROOM

Joy L Hernandez

Old Dominion University, USA

Abstract

Background: This study explored the implementation of neuroscience-informed teaching practices to enhance language development in a diverse Pre-K classroom of 20 children, including those with language delays, bilingual learners, and a child with autism spectrum disorder (ASD). The focus was on applying neuroscientific insights to promote language growth within an inclusive educational setting.

Objectives:

- Assess the impact of neuroscience-informed practices on language acquisition.
- Adapt strategies to support children with language delays, bilingual learners, and ASD.
- Enhance language development through structured social interactions.
- Evaluate the effectiveness of assistive technology, such as AAC devices.

Methods: The study was conducted in a language-rich classroom equipped with visual aids, bilingual books, and differentiated instruction. Over eight weeks, systematic observations and semi-structured interviews with educators were conducted to gather data. Language skills were assessed pre-and post-intervention, with qualitative data analyzed thematically.

Results: The findings indicate that all students demonstrated improvements in language skills, particularly those receiving early interventions during critical developmental periods. Bilingual learners showed increased cognitive flexibility and language growth in both languages. Children with language delays and ASD benefited from differentiated instruction and the use of AAC devices, which effectively supported communication and engagement. Additionally, structured peer interactions and teacher-led activities significantly enhanced language development by stimulating neural connections.

Conclusion: Neuroscience-informed practices significantly enhance language development in inclusive early childhood settings. Early intervention, differentiated instruction, and assistive technology are crucial in supporting diverse learners, while structured social interactions foster neural plasticity, promoting language growth and equity in education. This approach underscores the importance of applying neuroscientific principles to create supportive and inclusive learning environments.

Biography

With over 30 years in Early Childhood Education, I currently serve as the director of Hampton University Child Development Center (HUCDC), where I lead a program focused on play-based learning and kindergarten readiness, aligned with Virginia's Early Learning Standards. I also co-chair the Hampton Roads Community Action Program and serve on military childcare committees. I hold a Master's in Early Childhood Education from Old Dominion University (ODU), am a PhD candidate in Curriculum and Instruction at ODU, and have authored seven publications on education. My work has earned recognition, including the Best of Hampton Childcare Category (2016-2021) and the 2017 Darden Fellow Award. Additionally, I am the President of the ODU Alumni Latinos Chapter and a member of the American Educational Research Association.

BRAIN ACTIVATION PATTERNS OF RHETORICAL COMPREHENSION IN INDIVIDUALS WITH AUTISM SPECTRUM DISORDERS: AN ACTIVATION LIKELIHOOD ESTIMATION META-ANALYSIS

Jianxin Zhang, Lulu Cheng, Na Hou, Xiaoxiao Wang, Xue Xiaomeng and Yanqin Liu

China University of Petroleum (East China), China

Abstract

Background: Previous neuroimaging studies on rhetorical comprehension in individuals with autism spectrum disorders (ASD) have consistently found differences in brain activation patterns between ASD and typically developing (TD) controls, but no consensus exists on the specific differences in brain activation patterns.

Objective: The present study aimed to investigate the consistent neural activation patterns during the processing of rhetorical comprehension in ASD individuals.

Methods: A systematic and comprehensive search of functional magnetic resonance imaging (fMRI) studies on rhetorical comprehension in ASD and TD participants published before December 31, 2023 was conducted in 5 databases: Pubmed, Embase, Web of Science, Chinese National Knowledge Infrastructure (CNKI), and Wanfang Database. Then, an activation likelihood estimation (ALE) meta-analysis was performed based on the extracted foci reported in the included studies.

Results: 6 fMRI studies with 95 ASD and 98 TD participants were included in this meta-analysis. The ALE results revealed that during the processing of rhetorical comprehension tasks, the typical brain regions of language processing such as the bilateral superior temporal gyrus (STG), transverse temporal gyrus and right insula were steadily activated in individuals with ASD. However, in comparison to the TD group, there are persistent abnormal patterns of brain activation. These are characterized by reduced activity in the left STG and the middle temporal gyrus.

Conclusion: The findings of this study provide objective evidence for understanding the neural mechanism of rhetorical comprehension in ASD individuals and also provide references for early clinical diagnosis, intervention and education of rhetorical comprehension in ASD individuals.

Biography

Jianxin Zhang, a Ph.D student at China University of Petroleum (East China), majored in language service engineering and management, and is mainly engaged in research of pragmatics and language pathology. She has conducted and participated in the research of brain activation patterns of rhetorical comprehension in individuals with autism spectrum disorders, abnormalities of brain structure and function in cervical spondylosis, and neural mechanisms of memory consolidation in patients with anxiety disorders.

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PRELIMINARY PHARMACODYNAMIC MECHANISM ANALYSIS AND CLINICAL EFFICACY VALIDATION OF TOUTONGTING DECOCTION IN MIGRAINE: FROM ANIMAL EXPERIMENT TO CLINICAL TRIAL

Shaojie Duan[1], Ziyao Wang[2], Hui Xia[3], Zhiying Ren[2], Wenyan Ding[1], Zaixiang Shi[4], Tao Zheng[2], Guanglu Li[2] and Zunjing Liu[5]

[1]Taizhou Central Hospital, China
[2]Graduate School of Beijing University of Chinese Medicine, China
[3]Guangzhou University of Chinese Medicine, China
[4]China-Japan Friendship Hospital, China
[5]Peking University People's Hospital, Beijing, China

Abstract

Background: Migraine is a highly prevalent and disabling disease. Toutongting decoction (TTTD) is a famous nationally patented herbal formula for treating migraine in China, and its urgently to elucidate its efficacy and mechanisms.

Objective: This study aimed to elucidate the main pharmacochemical components of TTTD, to preliminarily investigate its pharmacodynamic mechanism, and to verify its clinical efficacy.

Methods: The ultra-high performance liquid chromatography coupled with mass spectrometry (UHPLC- MS/MS) method was used to determine the pharmacochemical components of TTTD. In animal experiments, nitroglycerin-induced migraine rat model was used to evaluate the Pharmacodynamic effects of TTTD and investigate its potential mechanisms. In the clinical study, a total of 66 migraine patients were enrolled in a prospective, randomized, controlled trial to evaluate the clinical efficacy of TTTD for migraine patients.
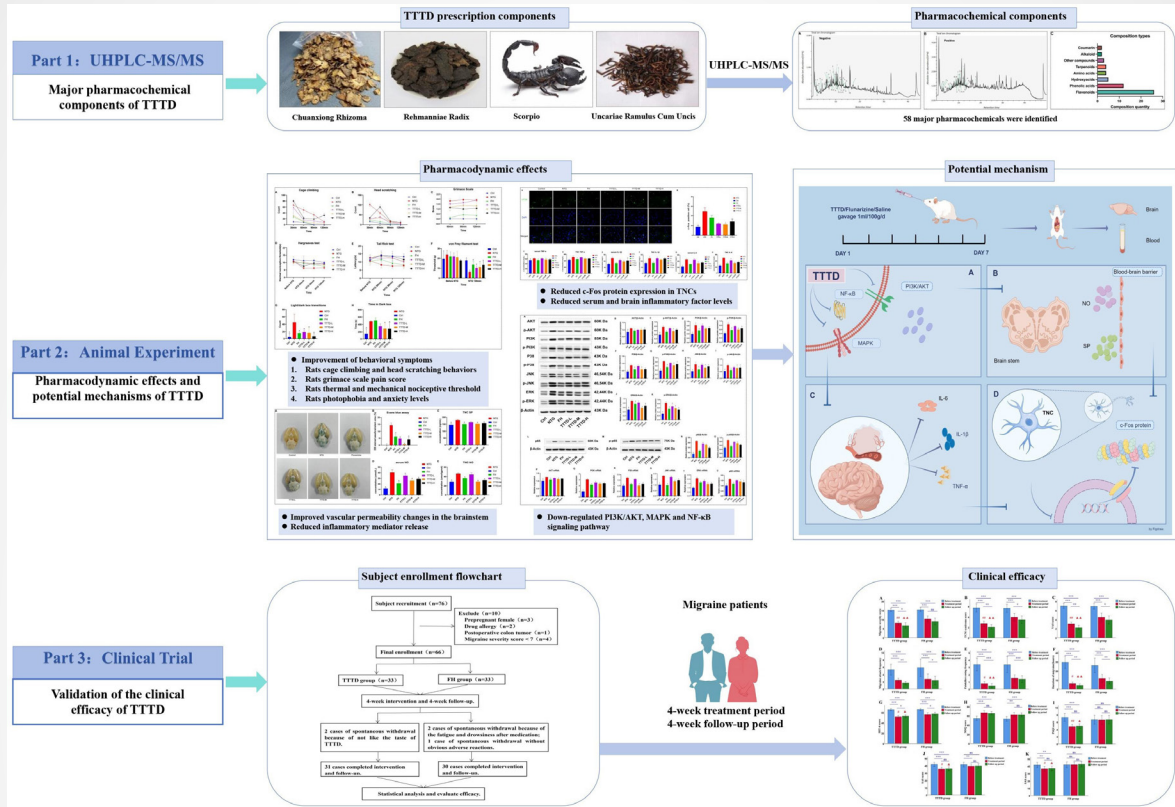
Results: The major pharmacochemicals of TTTD include flavonoids, phenolic acids, hydroxy acids, amino acids, terpenoids, alkaloids, coumarins, etc. The animal studies showed that TTTD significantly improved migraine-like behaviors and symptoms, including cage climbing and head scratching behaviors, grimace scale pain score, thermal and mechanical nociceptive threshold, photophobia and anxiety levels in migraine model rats. Meanwhile, TTTD down-regulated the expression levels of key proteins and mRNAs of PI3K/AKT, MAPK and NF-κB signaling pathways, decreased the levels of c-Fos protein in the trigeminal caudate nucleus cells, lowered the levels of pro-inflammatory cytokines in the brain tissues and serum, improved vascular permeability changes in the brainstem and reduced the release of inflammatory mediators such as neuropeptide substance P and nitric oxide. Clinical trials illustrated that the overall clinical effectiveness of TTTD on migraine patients was 87.10% and 90.32% at post-treatment and follow-up, respectively, which not only significantly reduced the severity of migraine, the frequency of attacks, the duration of each attack, and the frequency of painkiller use, but also effectively improved the anxiety, depression, and sleep quality of migraine patients.

Conclusion: TTTD has good efficacy in the treatment of migraine, and its potential pharmacodynamic mechanism may be closely related to the regulation of PI3K/AKT, MAPK, and NF-κB signaling pathways to improve neurogenic inflammation.

Graphical Abstract:

Biography

Shaojie Duan was born in a family of Chinese medicine practitioners, studied Chinese medicine since childhood and graduated from the China-Japan Friendship Clinical School of Medicine of Beijing University of Traditional Chinese Medicine. Dr. Duan has long been committed to clinical and basic research on migraine, and he has rich experience in the combination of Chinese and Western medicine in the diagnosis and treatment of migraine.

ANTI AMPA ENCEPHALITIS

Nabeel Ahmad

Ibn-e-siena Hospital Multan, Pakistan

Abstract

A case of acute onset confusion and rapidly progressive dementia in a 58-year-old male from Lahore, culminating in the first confirmed diagnosis of Anti-AMPA receptor encephalitis (AMPA) in Pakistan. The case initially presented with suspicion of viral encephalitis, and the patient underwent a week of treatment without response. Subsequently, the attendants transferred the patient to CMH Lahore, where a workup and initial treatment for autoimmune encephalitis were initiated. During his stay, the patient's condition deteriorated; he developed bilateral ptosis, dysphagia, and further neurological decline. Treatment with plasmapheresis and corticosteroids was administered. Suspecting a paraneoplastic cause, a chest CT was performed, revealing an incidental thymoma. An autoimmune panel for encephalitic antibodies showed positivity for the GluA1 and GluA2 subunits, confirming AMPA encephalitis. Treatment included immunotherapy with rituximab, plasmapheresis, and corticosteroids, leading to minimal initial improvement. This case highlights the complexity of diagnosing AMPA and underscores the importance of considering autoimmune and paraneoplastic etiologies in similar presentations.

ROLE OF MICROGLIA-ASTROCYTE-NEURON AXIS IN NEURODEGENERATION IN α-SYNUCLEINOPATHY DEMENTIA

Tae-In Kam[1,2], Jae-Jin Song[1], Hyejin Park[2], YuRee Choi[1], Justin Wang[1], Jisu Shin[1], Shih-Ching Chou[1], Aanishaa Jhaldiyal[1], Sijeong Lee[2], Minseo Woo[2], Valina Dawson[1] and Ted Dawson[1]

[1]*Johns Hopkins University School of Medicine, USA*
[2]*Korea Advanced Institute of Science & Technology (KAIST), South Korea*

Abstract

Background: We recently identified that activation of microglia can lead to the conversion of astrocytes to neurotoxic species of reactive astrocyte that are observed in post-mortem tissues of various neurodegenerative diseases including Parkinson's disease (PD) and Alzheimer's disease (AD). However, it is not clear whether and how reactive astrocytes contribute to neurodegeneration of α-synucleinopathy dementia such as Lewy Body Dementia (LBD).

Objective: To examine the novel role of microglia-reactive astrocyte-neuron axis in neurodegeneration of α-synucleinopathy dementia models

Methods: We have recently developed a mouse model of sporadic α-synucleinopathy in which α-synuclein (α-syn) preformed fibrils (PFFs) were injected into the duodenum and the pylorus muscularis layer in the stomach that are innervated by the vagal nerve. In this gut-brain α-syn model, the α-syn pathology spreads in the brains and the mice exhibit a non-motor behavior including cognitive deficits as well as motor deficits. Using this valuable α-synucleinopathy mouse model, we determined whether and how microglia-mediated activation of reactive astrocytes contribute to neurodegeneration. Using secretome analysis, we isolated the neurotoxins that are secreted from the α-synuclein-induced reactive astrocytes and induce the neurotoxicity and validated its therapeutic potential for treatment of α-synucleinopathy in a mouse model.

Results: We showed genetic depletion of neurotoxic reactive astrocytes in the gut-brain α-syn mouse prevented the loss of neurons and behavioral deficits, suggesting that neurotoxic reactive astrocytes play an important role in neurodegeneration induced by pathologic α-synuclein. Using secretome analysis, we isolated the neurotoxins that are secreted from the α-synuclein-induced reactive astrocytes and induce the neurotoxicity. Inhibition of secretion of neurotoxins in astrocytes or its receptor in neurons suppressed the reactive astrocyte-mediated neurotoxicity in cultures. Moreover, pharmacological inhibition or genetic depletion of neurotoxin receptor prevented pathologic α-synuclein-induced neurodegeneration and movement and cognitive deficits in the gut-brain α-syn mouse

Conclusion: The strategies aimed at inhibiting reactive astrocyte-derived neurotoxins and its neuronal receptor could hold promise as a disease-modifying therapy to prevent the loss of neurons in α-synucleinopathies.

Biography

Tae-In Kam is a molecular neuroscientist who studies the causes and treatment methods of neurodegenerative diseases. He focuses on the research of neuronal and non-neuronal mechanisms of the pathogenesis of neurological disorders. He attempts to understand events in the brains of those with neurodegenerative diseases such as Alzheimer's and Parkinson's disease using a variety of research techniques, including high-throughput screening, human stem cell studies, and preclinical animal models. The overarching goal of the research is to understand death and survival mechanisms in order to identify novel targets that are essential for the pathogenesis of neurodegenerative diseases and for developing disease-modifying therapies.

DECIPHERING THE INTERPLAY OF PARP-1 AND MIF NUCLEASE ACTIVITY IN A-SYNUCLEIN-DRIVEN NEURODEGENERATION

Hyejin Park, Tae-In Kam, Ted M. Dawson and Valina L. Dawson

Korea Advanced Institute of Science and Technology (KAIST), South Korea

Abstract

Background: Parkinson's disease (PD) is characterized by the progressive loss of dopamine neurons in the substantia nigra pars compacta (SNpc), leading to movement disorders. The accumulation and aggregation of α-synuclein (α-syn) are implicated in the loss of these neurons. Despite this understanding, the factors driving abnormal α-syn assembly and the downstream death mechanisms activated by pathologic α-syn remain unknown.

Objective: The research aims to elucidate the molecular mechanisms underlying PD, with a specific focus on the role of poly (ADP-ribose) polymerase 1 (PARP1) activation and its interaction with α-syn in the pathogenesis of the disease.

Methods: We conducted experiments to analyze the activation of PARP-1 and the generation of PAR in the context of pathogenic α-synuclein transmission. We also investigated the role of MIF in PD by studying its translocation to the nucleus after interacting with AIF and its nuclease activity causing DNA fragmentation. Genetic deletion or mutation experiments were performed to assess the impact of eliminating MIF's nuclease activity on α-synuclein-induced pathology in murine PD models. Compound screening led to the identification of PAANIB-1, a brain-penetrant MIF nuclease inhibitor, and its effects were evaluated in various in vivo models of PD.

Results: The findings highlight the central role of PARP-1 activation in pathologic α-synuclein neurodegeneration and reveal the involvement of MIF as a downstream player in parthanatos. PAANIB-1, as a novel MIF nuclease inhibitor, showed promise in preventing neurodegeneration in various PD models.

Conclusion: This research not only contributes mechanistic insights into the progression of PD but also presents a potential therapeutic approach. Targeting PARP-1 activation and MIF nuclease activity, particularly with compounds like PAANIB-1, holds promise for clinical translation, offering a glimpse of hope for patients with PD.

Biography

Park embarked on her research journey with a focus on the tau protein, a key player in Alzheimer's disease. Pioneering the development of a screening system and animal models, she demonstrated a unique capability to modulate tau protein. Upon earning her doctoral degree, Dr. Park extended her exploration into the realm of neurodegenerative brain disorders. Immersing herself in the intricacies of the alpha-synuclein protein associated with Parkinson's disease, she unraveled its cellular toxicity mechanisms and unearthed potential therapeutic compounds. Her groundbreaking contributions found their way into esteemed journals like Science and Cell, solidifying her distinguished academic standing in the field of neurodegenerative brain disorders.

Day-2
Video Presentations

ENHANCING MENTAL WELLNESS THROUGH THE INTEGRATION OF ZEN MEDITATION AND MUSIC THERAPY

Mi hyang Hwang

Dongguk University, South Korea

Abstract

Background: The significance of mental wellness is paramount in promoting healthier lifestyles, enhancing learning processes, and improving working environments, especially within the healthcare sector. Various mental wellness programs have been explored to ensure individuals lead fulfilling and enjoyable lives.

Objective: This study aims to investigate the combined effects of Zen meditation and music therapy on mental health, with a focus on their potential to manage conditions such as stress, anxiety, depression, and sleep disorders.

Methods: A qualitative methodology was employed, utilizing surveys to collect data. Thematic analysis was used to investigate various aspects of the data concerning the role of a Zen Meditation Music (MM) programme in enhancing mental wellness.

Results: The study's findings indicate that the combination of Zen meditation and music therapy significantly benefits mental health. Participants reported noticeable enhancements in addressing stress, anxiety, depression, and sleep disturbances.

Conclusion: The results of this study underscore the significant benefits of merging Zen meditation and music therapy to bolster mental well-being. By employing this holistic approach, individuals may develop more effective coping mechanisms and experience enhanced mental health support. Furthermore, the integration of music and meditation practices offers promising potential for application across diverse healthcare settings, indicating a versatile tool for mental wellness enhancement.

Biography

I am a dedicated professional in the intersection of Zen meditation and music therapy, holding a Ph.D. in Philosophy from the University of the West of England (UWE), UK. My qualifications include certification as a British Certified Music Therapist by the Health and Care Professions Council (HCPC, UK), as well as being a certified Music Psychotherapist and Fellow of the American Music Therapy Association (AMI). Currently, I serve as a Lecturer in the Department of Seon Studies at Dongguk University, Seoul, where I teach the integration of Zen meditation and music therapy. My experience as a Postdoctoral Researcher at UWE, Bristol (2020-2021), has enriched my academic journey and reinforced my dedication to the field of mental wellness. Since joining Dongguk University in 2021, my primary research involves developing and evaluating Zen Meditation and Mindfulness-Based Music program. This initiative is designed to improve mental health and well-being, aiming to positively impact individual wellness and contribute to a comprehensive mental health framework. I am committed to contributing to the advancement of music therapy and Zen meditation practices, aiming to influence mental health care focus on holistic well-being.

AN UPDATED META-ANALYSIS OF RANDOMIZED CONTROLLED TRIALS OF DUAL ANTIPLATELET THERAPY VERSUS ASPIRIN IN PATIENTS WITH STROKE OR TRANSIENT ISCHEMIC ATTACK.

Muhammad Basil Raza[1], Ali Akhtar[2] and Maham Khan[3]

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[2]*Cambridge University Hospitals NHS Foundation Trust, United Kingdom*
[3]*Armed Forces Institute of Radiology and Imaging, Pakistan*

Abstract

Background & Rationale: In this updated meta-analysis, we explore the efficacy and safety of Dual Antiplatelet Therapy (DAPT) for individuals diagnosed with stroke or Transient Ischemic Attack (TIA), incorporating the latest insights from randomized controlled trials (RCTs). The emerging evidence surrounding dual antiplatelet therapy in stroke and TIA plays a pivotal role in guiding clinical decisions.

Methods: Our study included all RCTs featuring patients who received antiplatelet treatment (aspirin+P2Y12 inhibitor) within 72 hours of acute stroke or TIA. This meta-analysis included data from five major randomized controlled trials: INSPIRES, THALES, POINT, CHANCE, and FASTER which investigated the use of dual antiplatelet therapy (DAPT) for varying durations of 21 days, 30 days, 90 days, 21 days, and 90 days, respectively. The primary focus was on efficacy outcomes, specifically the occurrence of new strokes, and safety outcomes, particularly the incidence of major bleeding. Secondary outcomes included the risk of cardiovascular events, recurrent ischemic, and haemorrhagic strokes. The pooled odds ratio was computed using a random effects analysis model.

Results: Our analysis involved five randomized clinical trials with 27,559 patients. In comparison to Aspirin alone, DAPT demonstrated a significant reduction in stroke recurrence (OR,0.75; 95% CI, 0.68–0.82; P<0.001; I2=0%). However, the dual therapy was associated with a higher risk of major bleeding events (OR, 2.20 [95% CI, 1.38–3.51], P=0.0009, I2=30%). Patients receiving DAPT experienced a significantly decreased risk of major adverse cardiovascular events (OR, 0.76; 95% CI, 0.67–0.85; P<0.001, I2=5%) and a lower risk of recurrent ischemic events (OR, 0.73 [95% CI, 0.66–0.80], P<0.001, I2=0%). However, DAPT was associated with a notable risk of haemorrhagic stroke (OR, 2.09 [95% CI, 1.14–3.84], P=0.02, I2 =8%).

Conclusion: In conclusion, initiating DAPT, combining aspirin with either ticagrelor or clopidogrel, within 72 hours of a high-risk TIA or mild-moderate ischemic stroke, proved superior to aspirin alone in reducing the risk of recurrent stroke. Nonetheless, this approach also comes with a higher risk of major bleeding.

CHRONIC MUSCLE SPASM INDUCED CHRONIC PAIN TREATED WITH THE CMECD® PROCEDURE

Roger H Coletti

Interventional Health, USA

Abstract

This article was not intended to be a complete report of a standard clinical trial. It is a report of the outcomes of preliminary data for validation of the CMECD® procedure (Coletti Method of EMG Chemo-Denervation) protocol for the treatment of chronic pain resulting from chronic muscle spasm. Methods are here detailed on how to approach the patient with chronic pain, identify the presence of chronic muscle spasm and undertake the treatment protocol and how to perform the follow up process to confirm that chronic pain secondary to chronic muscle spasm was the accurate diagnosis. Furthermore, the results from a survey of a cohort of more than 90 patients treated by the CMECD® procedure are presented. This information regards the location and duration of prior pain, prior treatment strategies, degree of success in resolving pain and duration of relief. Outcome data consisting of patient and staff reporting of specific situations in which the chronic pain treatment was successful has been included to help establish the "believability" of outcome successes and to elucidate the potential life altering effects of successful treatment of chronic pain secondary to chronic muscle spasm. This article will hopefully enhance the interest in this treatment protocol and increase the chance that a classical international clinical trial will be undertaken.

EFFICACY AND SAFETY OF EDARAVONE DEXBORNEOL COMBINED WITH ENDOVASCULAR TREATMENT IN ACUTE ISCHEMIC STROKE DUE TO LARGE VESSEL OCCLUSION

Wei Li, Wenhua Liu, Yunyun Xiong, Kangmeng Wang, Tan Wang, Xiangliang Chen and Zhenqiang Zhao

Hainan Medical University, China

Abstract

Background: Edaravone dexborneol (ED) is a novel cytoprotective drug for treating acute ischemic stroke (AIS) and demonstrated with synergistic effects of antioxidant and anti-inflammatory. Objective: To evaluate whether ED combined with endovascular treatment (EVT) can improve the clinical outcome and safety in patients with AIS due to large vessel occlusion (LVO).

Methods: Data were pooled from three comprehensive stroke centers of patients treated with EVT for AIS due to LVO were combined in this study. Patients were divided into ED and non-ED groups. The primary efficacy outcome was the shift of the modified Rankin Scale (mRS) score at 90 days. The secondary efficacy outcome included functional independence and excellent outcome (defined as an mRS score of 2 or less) at 90 days. Safety outcomes included mortality within 90 days and symptomatic intracranial hemorrhage (sICH) within 48 h.

Results: Of 285 patients, 54 were excluded. A total of 231 (81.1%) patients with successful reperfusion (modified Thrombolysis in Cerebral Infarction, mTICI ≥2b) after EVT were included in the analysis, of whom 84 (36.4%) were in the ED group and 147 (63.6%) were in the non-ED group. After adjustment for the potential confounders, ED was associated with a favorable shift in 90-day mRS scores (adjusted common odds ratio, 2.09; 95% confidence interval [CI], 1.05-4.14; P=0.035) despite no significant differences in the odds of symptomatic intracranial hemorrhage (aOR, 0.44; 95%CI [0.10-2.02]; P=0.29) or 90-day mortality (aOR, 0.37; 95%CI [0.06-2.31]; P=0.28).

Conclusion: Among patients with AIS due to LVO, edaravone dexborneol combined with EVT may lead to improved functional outcome without increasing the risk of sICH and mortality.

Biography

Wei Li I have been engaged in clinical, teaching, and research work in neurology for over ten years. He have a deep understanding of the prevention and treatment of neurological diseases. Specializing in the diagnosis and treatment of cerebral infarction, cerebral hemorrhage, dizziness, headache and dementia. Especially skilled in the neurointerventional treatment of cerebrovascular diseases.

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