11th World Congress on

Neurology and Therapeutics

March 27-29, 2017 Madrid, Spain

Special Session
(Day 1)

Neurology 2017

Jyri Kuusela et al., J Neurol Neurophysiol 2017, 8:2 (Suppl)
http://dx.doi.org/10.4172/2155-9562.C1.046

Jyri Kuusela and Pilar Vecina

Clinical Hospital San Carlos, Spain

Neurofeedback: An alternative vision in the treatment of neurological and neuropsychiatric disorders

Electroencephalographic (EEG) biofeedback or often referred as Neurofeedback (NFB) was discovered about 40 years ago. Over a long period, the technique remained unpopular, which is investigated by few enthusiasts. In the late 90s and in early 2000s, there started a new era of the Neurofeedback. The technological advances helped faster development and quicker testing of new protocols and methods. During the last years, close to 200 publications are made every year about NFB and thousands of clinicians are applying the technique in daily basis in their practices. One of the most investigated topics has been ADD/ADHD and in 2012, American Academy of Pediatrics placed EEG biofeedback as a level-1 "Best Supported" intervention to ADHD. The Institute of Social Research and Development of Uncommon Diseases together with NeuroVitalia is treating patients with NFB in Clinical Hospital San Carlos. We apply the technique to wide variety of patients. We treat, for example, tics, Tourette's syndrome, and epilepsy, where NFB is known to provide help, but we have also started applying it to patients with leucodystrophy, neuromuscular diseases and brain injuries. In the clinics of NeuroVitalia, we usually treat ADHD, autism, migraine, anxiety and depression. We also have many peak performance clients.

Biography

Jyri Kuusela is the founder of NeuroVitalia and Ataman Science. He is also Neurofeedback lecturer of EEG Info-Europe and qEEG/ERP lecturer of HBImed.

jyri@atamanscience.com

Notes:

11th World Congress on

Neurology and Therapeutics

March 27-29, 2017 Madrid, Spain

Scientific Tracks & Abstracts
Day 1

Neurology 2017

Corina O Bondi, J Neurol Neurophysiol 2017, 8:2 (Suppl)
http://dx.doi.org/10.4172/2155-9562.C1.046

Effects of chronic unpredictable stress on cognitive and depressive-like behaviors following experimental brain trauma

Corina O Bondi
University of Pittsburgh, USA

Traumatic brain injury (TBI) affects 2 million individuals in the United States each year, and many survivors endure cognitive impairments, while also being vulnerable to neuropsychiatric disorders. Clinical and preclinical research has highlighted the importance of chronic stress as a major risk factor for many psychopathological conditions. In the current study, we are assessing clinically-relevant cognitive-behavioral and anxiety-like dimensions sensitive to both TBI and chronic unpredictable stress (CUS). We hypothesized that moderate TBI produced by controlled cortical impact (CCI) injury, as well as CUS exposure will render cognitive impairments in male rats in an attentional set-shifting test (AST), reduced sucrose preference and open field exploration, blunted weight gain, elevated stress hormones and inflammatory markers. Anesthetized adult male rats were subjected to a CCI (2.8 mm cortical tissue deformation) or sham injury over the right parietal cortex. Rats were then randomly assigned to receive CUS (21 days) or 30 sec of handling (CTRL). Upon cessation of stress, rats were tested for perceived state of anxiety (open field test) and anhedonia (preference of 1% sucrose-water versus regular water). At 4 weeks post-surgery, rats were then tested on the AST, which involves a series of increasingly difficult discriminative tasks to obtain food reward. While TBI and CUS alone impaired behavioral flexibility on AST, as expected, the combination group (TBI+CUS) does not seem to negatively impact exploration in the open field, sucrose preference or AST performance (n=8-12/group). Moreover, serum levels of corticosterone (CORT), and inflammatory markers (IL-1β and TNFα) were paradoxically reduced in the TBI+CUS rats compared to controls, suggesting a putative enhanced resilience in this group. This ongoing project will provide novel outcomes pertaining to cognitive capability, as well as anxiety- and depressive-like symptoms following overlapping chronic stress exposure and the recovery phase of TBI.

Biography

Corina Bondi, PhD, is an Assistant Professor in the Department of Physical Medicine and Rehabilitation and at the Safar Center for Resuscitation Research at the University of Pittsburgh. Her research interests focus on characterizing therapeutic strategies after experimental traumatic brain injury, such as pharmacotherapies and environmental enrichment, for complex cognitive processing deficits and distinct neurobehavioral and neurochemical alterations relevant to psychiatric disorders.

bondico@upmc.edu

Notes:

David E Vance, J Neurol Neurophysiol 2017, 8:2 (Suppl)
http://dx.doi.org/10.4172/2155-9562.C1.046

The think fast study – A randomized controlled study to improve speed of processing in adults with HIV-associated neurocognitive disorder

David E Vance
University of Alabama at Birmingham, USA

Between 52-59% of adults with HIV experience HIV-Associated Neurocognitive Disorder (HAND), and both the frequency and severity of such disorders may increase with advancing age. Unfortunately, few pharmacological or behavioral interventions have been shown to be effective. This presentation reviews the overall rationale and development of speed of processing training, a computerized cognitive training program, to improve this specific cognitive ability as well as everyday functioning and quality of life in adults aging with HIV. Although this protocol has been shown to improve speed of processing, everyday functioning, and quality of life in normal, community-dwelling older adults in the Advanced Cognitive Training In Vital Elderly (ACTIVE) study, its efficacy in adults aging with HIV has not been established. Based on our prior work, this current study consists of a pre-post two-year longitudinal experimental design whereby 264 adults with HAND are randomly assigned to one of three training conditions: 1) 10 hours of laboratory-based Speed of Processing Training, 2) 20 hours of laboratory-based Speed of Processing Training, or 3) 10 hours of a standardized computer-contact control (sham) condition. Thus, the description of this randomized, longitudinal clinical trial covers the following: 1) rationale for speed of processing training in those with aging with HIV; 2) overview of overall study design; 3) inclusion/exclusion criteria and diagnosing HAND; 4) cognitive/functional assessment battery; and 5) examination of biomarkers (e.g., IL-6, BDNF). In conclusion, related cognitive interventions are suggested as they may utilize similar features of this current RCT protocol to examine their efficacy.

Biography

David E Vance is a Psychologist at the University of Alabama at Birmingham and is studying Cognitive Remediation and Aging with HIV. He has +180 peer-reviewed publications. He received a White House invitation to attend the first forum on aging with HIV and has participated as an invited member of the USA National Institutes of Health Think Tank – Working Group on HIV and Aging. Recently, he was awarded a 2.8 million dollar grant from the USA National Institute of Mental Health titled, "An RCT of speed of processing training in middle-aged and older adults with HIV."

devance@uab.edu

Notes:

Isabel Lastres-Becker, J Neurol Neurophysiol 2017, 8:2 (Suppl)
http://dx.doi.org/10.4172/2155-9562.C1.046

Repurposing the NRF2 activator dimethyl fumarate as therapy against synucleinopathy in Parkinson's disease

Isabel Lastres-Becker
Autonomous University of Madrid, Spain

This preclinical study was aimed at determining if pharmacological targeting of transcription factor NRF2 might provide a disease modifying therapy in the animal model of Parkinson's disease (PD) that best reproduces the main hallmark of this pathology, i.e. α-synucleinopathy, and associated events including nigral dopaminergic cell death, oxidative stress and neuroinflammation. Pharmacological activation of NRF2 was at the basal ganglia by repurposing dimethyl fumarate (DMF), a drug already in use for the treatment of multiple sclerosis, leading to up-regulation of a battery of cytoprotective genes. Daily oral gavage of DMF protected nigral dopaminergic neurons against α-SYN toxicity and decreased astrocytosis and microgliosis after 1, 3 and 8 weeks from stereotaxic delivery to the ventral midbrain of recombinant adeno-associated viral vector expressing human α-synuclein. This protective effect was not observed in *Nrf2*-knockout mice. *In vitro* studies indicated that this neuroprotective effect was correlated with altered regulation of autophagy markers p62, LC3 and LAMP2 in MN9D, BV2 and IMA 2.1 and with a shift in microglial dynamics towards a less pro-inflammatory and more wound-healing phenotype. In postmortem samples of PD patients, the cytoprotective proteins associated with NRF2 expression, NQO1 and SQSTM1/p62, were partly sequestered in Lewy bodies, suggesting impaired neuroprotective capacity of the NRF2 signature. These experiments provide a compelling rationale for targeting NRF2 with DMF as a therapeutic strategy to reinforce endogenous brain defense mechanisms against PD-associated synucleinopathy.

Biography

Isabel Lastres-Becker is Associate Professor at the Autonomous University of Madrid, Spain. Her main focus is to uncover the molecular basis of neurodegenerative disorders like Parkinson and Alzheimer's disease, to try to find a therapeutic target to develop a cure

ilbecker@iib.uam.es

Notes:

Jose Ramon Ara et al., J Neurol Neurophysiol 2017, 8:2 (Suppl)
http://dx.doi.org/10.4172/2155-9562.C1.046

Effectiveness of fingolimod in patients with relapsing-remitting multiple sclerosis in daily clinical practice in Spain: Results from a multivariate pool analysis called Fingoview

Jose Meca-Lallana[2], Guillermo Izquierdo[3], Celia Oreja[4], Lucia Forero[5], Teresa Ayuso[6], Angel Perez Sempere[7], Nicolas Herrera[8], Javier Ricart[9], Eli Garcia[9] and Irene Sanchez-Vera[9] on behalf of the investigators of the MS NEXT and **MS SECOND LINE GATE studies**

[1]Servicio de Neurologia. Hospital Universitario Miguel Servet. Zaragoza.
[2]Servicio de Neurologia. Hospital de Virgen de la Arrixaca. Murcia.
[3]Servicio de Neurologia. Hospital Virgen Macarena, Sevilla.
[4]Servicio de Neurologia. Hospital Clinico San Carlos. Madrid.
[5]Servicio de Neurologia. Hospital Universitario Puerta del Mar. Cadiz.
[6]Servicio de Neurologia, Hospital de Navarra. Pamplona
[7]Servicio de Neurologia, Hospital General de Alicante. Alicante
[8]Servicio de Neurologia, Hospital de Burgos. Burgos
[9]Novartis Farmaceutica S.A., Spain

Introduction: Once-daily Fingolimod (Gilenya®, Novartis Pharma AG) is a sphingosine 1-phosphate receptor modulator approved for relapsing MS treatment. Continuous collection and analysis of real world effectiveness and safety data is the key to making accurate treatment decisions. The objective is to describe basal characteristics and effectiveness of fingolimod in patients with relapsing-remitting multiple sclerosis (RRMS) followed for ≥12 months in routine clinical practice in Spain.

Methods: Fingoview is a multivariate pool analysis of two observational, retrospective chart reviews, multicenter studies MS Second Line Gate and MS Next, conducted in specialized MS centers in Spain, between November 2014 and December 2015. Pool analysis was prospectively planned. Both studies included patients of both sexes, ≥18 years, diagnosed with RRMS, treated with fingolimod according to SmPC and followed up for ≥12 months after treatment initiation.

Results: Fingoview included 988 patients (70 naïve, 252 post-natalizumab, 666 post first-line injectable DMTs), 68.9% female, mean (SD) age: 40.44 (9.1) years. After 1, 2, 3 years of treatment, mean annual relapse rate decreased by 76.5% (mean: 1.19 to 0.28), 82.4% (0.21) and 86.3% (0.16) compared to the year prior to fingolimod (all p<0.0001). At 12 months, 89.6% of patients had stable or improved EDSS which was maintained in 84.4% of patients at 24 months. New/enlarged T2 lesions, gadolinium-enhancing lesions on T1 or radiologically disease free will be discussed.

Conclusion: After switching to fingolimod, RRMS had significantly suppressed clinical disease activity and most of the patients have a stable EDSS after one year of treatment.

Biography

Irene Sanchez-Vera completed her PhD in Neuropharmacology from Carlos Haya University Hospital (Malaga, Spain) and has been working as a Postdoctoral Researcher at Carlos Haya University Hospital (Malaga, Spain), Principe Felipe Research Centre (Valencia, Spain), Andalusian Centre of Molecular Biology and Regenerative Medicine (CABIMER, Seville, Spain), Institute de la Vision (Paris, France), University of Valencia (Spain), and Genetic Medicine Institute (Newcastle upon Tyne, UK). Nowadays, she is a Medical Scientific Liaison at Novartis Farmaceutica (Spain). She has publications in reputed international journals in Neuroscience field, and has been serving as Invited Referee in international journals

irene.sanchez_vera@novartis.com

Notes:

11th World Congress on

Neurology and Therapeutics

March 27-29, 2017 Madrid, Spain

Workshop
Day 1

Vahe Poghosyan, J Neurol Neurophysiol 2017, 8:2 (Suppl)
http://dx.doi.org/10.4172/2155-9562.C1.046

Vahe Poghosyan

King Fahad Medical City, Saudi Arabia

Functional neuroimaging of language and memory using magnetoencephalography (MEG)

Functional localization of eloquent cortices, covering or adjoining the pathological brain regions, is needed during many neurosurgical interventions. In particular, the hemispheric lateralization of language and memory functions as well as localization of cortical regions involved in language processing are often essential, especially in cases of epilepsy surgery. Currently, such localization is performed predominantly through invasive methods: The Wada test (intracarotid sodium amobarbital procedure) is most commonly used to assess the hemispheric dominance of language and memory during the pre-surgical evaluation of patients and, electrocortical stimulation is routinely used intra- or extra-operatively to localize cortical regions underlying receptive and expressive language processing. Although both of these procedures are well-established means for the functional evaluation of eloquent cortex, they have also some important limitations, such as risk of morbidity due to their invasive nature, variability in responses to barbiturate agents and arterial anatomy, limited spatial extent of electrocortical stimulation, which is confined to small area of craniotomy, etc. Magnetoencephalography (MEG) is the most novel, completely non-invasive functional neuroimaging technique capable of generating activation maps for the entire brain in real-time. The evidence from research suggests that MEG can be used effectively to assess the hemispheric dominance of language and memory, and to map the cortical regions supporting the linguistic functions of speech production (Broca's area) and comprehension (Wernicke's area), in individual patients. Non-invasive mapping of language-specific cortical zones, during routine pre-surgical evaluation of patients, can significantly facilitate surgical planning and reduce morbidity associated with resection of eloquent cortex. In this presentation, I will describe recently developed activation protocols and methodologies for identifying the hemispheric lateralization of language and memory, and mapping of the language-related eloquent cortex. I will highlight the potential of MEG in the pre-surgical evaluation, and will argue for widening the scope of MEG applications in clinical practice.

Biography

Vahe Poghosyan completed his MSc in Mathematics from Yerevan State University and PhD in Neurophysiology from National Academy of Sciences of Armenia. He held positions of Research Scientist in RIKEN Brain Science Institute in Japan, Senior Scientist and Director of Research Training Program at AAI Scientific Cultural Services Ltd. in Cyprus. Currently, he is the Head of MEG Laboratory and Consultant of Neuronavigation at King Fahad Medical City in Riyadh, KSA. He has published more than 20 research papers in high-impact journals in the field of Neuroscience.

vpoghosyan@kfmc.med.sa

Notes:

Lahbib Soualmi, J Neurol Neurophysiol 2017, 8:2 (Suppl)
http://dx.doi.org/10.4172/2155-9562.C1.046

Lahbib Soualmi

King Fahad Medical City, Saudi Arabia

Impact of neuronavigation on neurosurgical practice

Neurological surgery has always been a highly technological profession. Neuronavigation is this surgical technology that continues to transform neurosurgical interventions into safer and less-invasive procedures. Among other medical technologies, neuronavigation has pushed the limits of conventional neurosurgery, helping in re-defining new and more precise approaches. Its power lies in the ability to virtually combine imaging data to extract comprehensive information that is used to strategize and guide the neurosurgical interventions. What was once a simple localization tool is today a surgical reality tool and an essential piece of technology in the operating theaters (OT). It is used as an information center for providing surgical crew with the right information when it is needed the most. During the surgery, an interactive real-time display can demonstrate the otherwise hidden information that has been generated from multi-modal volumetric images. The information defined during the preoperative plan of the surgical approach can be deployed in the surgical field, enabling selection of the appropriate scalp incision, minimizing the extent of the craniotomy, and thus decreasing considerably the potential risks to the patient. Also during surgery, the navigation accuracy decreases because of the brainshift and tissue removal. The use of intraoperative imaging will redress for these inaccuracies by refreshing the imaging data used by the neuronavigation. Furthermore, intraoperative imaging is allowing the assessment of surgery's objectives (i.e. amount of tumor removal), within the OT itself, while the patient still on the surgical table and before skin closure. Understanding the association between anatomy and imaging for surgical purposes remains a challenge and neuronavigation, when appropriately used, can bridge the gap between them and assist in performing surgery more dexterously and safely. Available new technologies bring a promise of a better and safer tomorrow for neurosurgical interventions. Having these great technological tools should indeed help us in delivering great care

Biography

Lahbib Soualmi is an expert in Image Guided Neurosurgical Navigation. He has been, from 1998 until 2008, Director of Neuronavigation Unit, in Montreal Neurological Institute and Hospital, McGill University Health Center (MUHC) and Assistant Professor in the Department of Neurology and Neurosurgery, McGill University, Montreal, Canada. He holds an MS and a PhD in Biomedical Engineering from Ecole Polytechnique of Montreal. In 2008, he relocated to the National Neuroscience Institute at King Fahad Medical City in Riyadh, Saudi Arabia, where he is currently, Consultant of Image Guided Neurosurical Navigation and the Head of Neuronavigation Unit and Intraoperative Surgical Imaging. Furthermore, he has been a Consultant Faculty in the Biomedical Technology Department, King Saud University, Riyadh, Saudi Arabia from 2008 to 2013.

lsoualmi@kfmc.med.sa

Notes:

Elamir Elsherif, J Neurol Neurophysiol 2017, 8:2 (Suppl)
http://dx.doi.org/10.4172/2155-9562.C1.046

Elamir Elsherif

King Fahd Medical City, Saudi Arabia

Intra-operative neurophysiologic monitoring: Current advance and future potential

Intraoperative Neurophysiologic Monitoring (IONM) has been a very dynamic and evolving field in the last few decades, surgeries that were considered inoperable before, due to its consequences of neurological deficits, become more operable. Subtle and safe excision of many brain and spinal cord tumors became routine due to multiple advances including intraoperative neurophysiological monitoring and mapping. Surgeons' decisions become more enlightened and informed due to multimodalities that give a complete set of information about the function of the sensory, motor and even the autonomic nervous system during surgery. Vigorous wake up test during scoliosis became almost obsolete due to IONM, clipping versus coiling, shunting versus non-shunting and many other neurovascular intraoperative decisions become more informed due to the presence of that amount of information from IONM. Functional mapping can be done pre and intra operative as well, giving more confidence to surgeon with every scalpel move that he is working on the right direction, ensuring safety and integrity of the neural tracts and functions under monitoring. The future of integrating more modalities is unfolding rapidly; integrating Transcranial Doppler with EEG, SSEPs and even functional reserve testing is being developed, giving clearer picture of the dynamic changes in neurovasculature in addition to the electrophysiological changes. The development of dry electrodes and caps can give the neurophysiologist enormous channels and contacts with brain in a shorter and more efficient time during surgeries. The future of neurophysiology can change and change the future of humanity with advancing in Brain Computer Interfaces (BCIs), where the boundaries between neural cells and computer circuits slowly disappear.

Biography

Elamir Elsherif is a Neurophysiologist Physician. He has completed his MD from Ain Shams University in Cairo. He did his training in Neurophysiology in Kings County Hospital in Brooklyn, New York. He completed the American Board of Neurophysiologic Monitoring program in Chicago. Currently, he is a Consultant of Intra-operative Neuro-monitoring and the Director of Neurosonology Lab at King Fahd Medical City. He is interested in Cortical Mapping, Neuromodulation and Brain Computer Interfaces.

dramir317@gmail.com

Notes:

Sajjad Ali, J Neurol Neurophysiol 2017, 8:2 (Suppl)
http://dx.doi.org/10.4172/2155-9562.C1.046

Sajjad Ali

King Fahad Medical City, Saudi Arabia

Electrodiagnosis of the peripheral nerve

In the quest of "Chasing the Neuron", localization of the peripheral nerve lesion is the primary goal of any neurophysiological study. Electrodiagnosis is an extension of the clinical neurological examination, without which one may find oneself lost in maze of peripheral neural axis. An array of different electrodiagnostic modalities are used to trace the neuron from the level of anterior horn cell in the spinal cord, to its end target organ, the post synaptic muscle. Nerve conduction studies are simple tests used to assess and localize the sensory and the motor nerves, with sparing of the sensory fibers in lesions that are pre-ganglionic, due to the residing of the posterior root ganglion away from the spinal foramina. However, in post-ganglionic lesions, both sensory and motor function is impaired, enabling to localize the lesion all along the plexus or the relevant peripheral nerve. Electromyography or needle EMG further helps in pinpointing the lesion, by mapping the presence of active denervating potentials in the muscles supplied by the affected nerve, assess for re-innervation as well as prognosticate recovery. By fatiguing the neuromuscular junction, in repetitive nerve stimulation, one can assess abnormalities of neuromuscular transmission and acquire information regarding a pre-synaptic or post-synaptic defect. Further specialized single-fiber electromyography studies enable to perform meticulous assessment of the jitter from single muscle fiber action potentials. Needle EMG is also the essence of differentiating a primary muscle origin disorder from an underlying neurogenic process. We summarize the use of electrodiagnostic modalities in the assessment of peripheral nerve disorders.

Biography

Sajjad Ali completed his training in Clinical Neurophysiology from the West Midlands Denary, UK and then worked as a Physician Consultant at the Queen Elizabeth Hospital Birmingham (QEHB), where he gained experience in the clinical and electrodiagnostic evaluation of peripheral nerve disorders and developed his special interest in single-fiber electromyography, under the mentorship of Professor Erik Stalberg (Uppsala, Sweden). Currently, he works in one of the largest healthcare organizations in KSA, the National Neurosciences Institute, King Fahad Medical City, Riyadh. Other research and special interests of his include EMG-guided Botox injections for spasticity, neuro-intraoperative monitoring and sleep studies.

drsajali@gmail.com

Notes:

11th World Congress on

Neurology and Therapeutics

March 27-29, 2017 Madrid, Spain

Scientific Tracks & Abstracts
Day 2

Neurology 2017

Evelyn M Garcia, J Neurol Neurophysiol 2017, 8:2 (Suppl)
http://dx.doi.org/10.4172/2155-9562.C1.046

Structural heart disease, minimally invasive procedures and the relationship to thromboembolic cerebral disease

Evelyn M Garcia
Carilion Clinic, USA

Statement of the Problem: The graying of populations across the globe is associated with increasing rates of structural heart disease and cardioembolic stroke. Aortic stenosis is the most prevalent cardiac valvular disease in the Western world. Thirty percent of aortic stenosis patients are not surgical candidates. Stroke is the 4th leading cause of death in the Unites States and 2nd leading cause of death in the EU and Europe. Twenty percent of patients have cardiogenic sources of emboli with 50% of those related to non-valvular atrial fibrillation with greater than 90% of thrombi originating in the left atrial appendage. Greater than 55% of patients with first time stroke and known non-valvular atrial fibrillation were on anticoagulation therapy, 68% found to be subclinical. Percutaneous procedures have been developed for each of these conditions with multiple device options and variable routes of deployment. However, the major complication associated with these procedures is embolic stroke.

Data to be Presented: Review of incidence of clinical vs non-clinical cerebral events associated with left atrial appendage closure and transcatheter aortic valve replacement procedures, structural risk factors, and imaging for procedure planning will be presented. Current data of cerebral protective devices will be reviewed.

Conclusion & Significance: Percutaneous procedures for treatment of atrial fibrillation and aortic stenosis are non-inferior to medical therapy and surgical therapy, respectively. Cardioembolic complications remain the major complication associated with these procedures. Embolic protection devices are promising for mitigation of embolic cerebral events in these two patient populations.

Biography

Evelyn Garcia completed her M.D. at the University of New Mexico School of Medicine, Diagnostic Radiology residency at the University of New Mexico Medical Center, and Body Imaging fellowship at the University of Utah Medical Center. She is board certifi ed in Diagnostic Radiology and Cardiovascular Computed Tomography. She is the Chairman and Medical Director of Radiology at Virginia Tech Carilion School of Medicine and of Carilion Clinic, a six hospital system with 800 bed fl agship Level I Trauma and Stroke certifi ed center. She is imager for the structural heart valve team of Carilion Clinic.

emgarcia@carilionclinic.org

Notes:

Anthony E Kline, J Neurol Neurophysiol 2017, 8:2 (Suppl)
http://dx.doi.org/10.4172/2155-9562.C1.046

Aripiprazole does not attenuate the benefits of environmental enrichment after experimental brain trauma

Anthony E Kline
University of Pittsburgh, USA

Introduction: The typical antipsychotic drug (APD) haloperidol (HAL), a D2 receptor antagonist, has been shown to impede functional outcome after experimental traumatic brain injury (TBI). Furthermore, the deleterious effects persist for up to 3 months after drug withdrawal. Moreover, a recent study showed that HAL reduced the effectiveness of environmental enrichment (EE), a preclinical model of neurorehabilitation. Because agitation is common after TBI, patients are provided APDs so that they can be safely managed. However, many patients in rehabilitation will only experience agitation occasionally and thus will receive APDs intermittently.

Hypotheses: Aripiprazole (ARIP), a partial D2 receptor agonist, will not impair recovery or reduce the effectiveness of EE regardless of whether administered once every day (i.e., chronic agitation) or once every other day (occasional agitation).

Methods: Anesthetized adult male rats received a cortical impact of moderate severity or sham injury and were then randomly assigned to EE or standard (STD) housing. Treatments with ARIP (0.1 mg/kg; i.p.) or vehicle (VEH; 1.0 mL/kg; i.p.) began 24 hr after injury and continued once daily for 19 days, or once every other day for the same period. Motor and cognitive outcome were assessed on post-operative days 1-5 and 14-19, respectively.

Results: Motor and cognitive function was significantly improved in the TBI+EE+VEH vs. TBI+STD+VEH group ($p<0.05$). Moreover, the TBI+EE+ARIP groups, regardless of dosing regimen, performed significantly better on all endpoints relative to the TBI+STD+VEH controls ($p<0.05$), but did not differ from one another or from TBI+EE+VEH ($p>0.05$).

Conclusions: ARIP, unlike HAL, did not impair recovery or reduce the efficacy of EE, which supports the hypothesis.

Significance: ARIP is beneficial on its own and does not negate the benefits of rehabilitation (i.e., EE) and thus may be used to control TBI-induced agitation and aggression without compromising recovery.

Biography

Anthony E Kline, PhD, is a Professor in the Departments of Physical Medicine and Rehabilitation, Critical Care Medicine, and the Safar Center for Resuscitation Research at the University of Pittsburgh. His research includes neurobehavioral recovery and learning after Traumatic Brain Injury (TBI). Therapeutic strategies that include pharmacotherapy and environmental enrichment are utilized alone or in combination in an attempt to restore function and/or attenuate TBI-induced deficits. Another interest is the evaluation of pharmacological agents that may alter TBI and to elucidate potential mechanisms for the observed effects.

klineae@upmc.edu

Notes:

Zoi A Giavri, J Neurol Neurophysiol 2017, 8:2 (Suppl)
http://dx.doi.org/10.4172/2155-9562.C1.046

Diffusion tensor tractography of memory-related white matter tracts in amyotrophic lateral sclerosis

Zoi A Giavri
Advantis Medical Imaging, Greece

Neuropathological studies support the presence of hippocampal alterations in patients with Amyotrophic Lateral Sclerosis (ALS), even when frank dementia is not present. These changes also involve Perforant Pathway Zone (PPZ), are more pronounced in later disease neuropathological stages and may partially explain the heterogeneity of patients' memory profile (traditionally related to frontal-related dysfunction). We aimed to investigate structural changes in vivo in memory-related white matter (WM) tracts [i.e. perforant pathway zone (PPZ); uncinate fasciculus (UF); fornix (Fx)] using diffusion tensor tractography (DTT) in non-demented patients with amyotrophic lateral sclerosis (ALS). Forty-two ALS patients and 25 healthy controls (HC) underwent a 30-directional diffusion-weighted imaging on a 3T MR scanner, followed by tractography of PPZ, UF and Fx and analysis of fractional anisotropy (FA), axial and radial diffusivity (Da, Dr). After correcting for multiple comparisons, DTT statistical analyses revealed significant between-group differences on Dr for left PPZ (p=0.002). Differences corresponding to medium effect sizes (and of nominal, Bonferroni-unadjusted significance) were detected on FA and Da for left PPZ, Da and Dr for left UF, Da for right UF and all Fx DTT metrics. Advanced neuroimaging techniques verified in this study previously reported neuropathological findings regarding PPZ degeneration in ALS.

Biography

Zoi A Giavri studied Electrical & Computer Engineering with an expertise in Computational Neuroscience at National Technical University of Athens and Neurobiology at Medical School of Athens. She is the CEO and one of the Founders of Advantis Medical Imaging, a Dutch company that develops highly advanced web-based software for the post-processing of brain MRI diffusion, perfusion and functional MRI exams

zoi@advantis.io

Notes:

Saba Nia, J Neurol Neurophysiol 2017, 8:2 (Suppl)
http://dx.doi.org/10.4172/2155-9562.C1.046

Neuropsychiatric signs and symptoms in treatable inborn errors of metabolism

Saba Nia
Kaiser-Franz-Josef-Spital, Austria

Possible underlying organic causes of psychiatric symptoms can be overlooked in the clinical setting. It is important to increase awareness amongst psychiatric and neurological professionals with regard to certain inborn errors of metabolism as, in some cases, disease-specific therapies are available that can, for instance, treat underlying metabolic causes. The following talk describes the basic pathophysiology, clinical and neurological features, and available diagnostic procedures of six treatable metabolic diseases that are associated with neuropsychiatric symptoms: Wilson's disease, cerebrotendinous xanthomatosis, porphyrias, homocysteinemia, urea cycle disorders, and Niemann-Pick disease type C (NP-C). NP-C is taken as a particularly relevant example because, while it is traditionally considered to be a condition that presents with severe neurological and systemic manifestations in children, an increasing number of patients are being detected who have the adolescent- or adult-onset form, which is frequently associated with neuropsychiatric signs. A notable proportion of adult-onset cases have been reported where NP-C has mistakenly been diagnosed and treated as a psychiatric condition usually based on patients' initial presentation with psychotic or schizophrenia-like symptoms. Underlying organic causes of psychiatric disorders such as psychosis should be considered among patients with atypical symptoms and/or resistance to standard therapy. Alongside improved frameworks for additional multidisciplinary diagnostic work in patients with suspected organic disease, the development of convenient and affordable biochemical screening and/or diagnostic methods has enabled new ways to narrow down differential diagnoses

Biography

Saba Nia received her Medical Degree in 2005 from the Medical University in Vienna, Austria. She began her Clinical career in the field of Psychiatry in Austria and Germany. After receiving her board certification in Psychiatry in 2011, she continued her training in the field of Neurology in Vienna, which she concluded in 2014. She is specialized in Rare Metabolic Diseases in the Neuropsychiatric field and has organized several congresses featuring neuropsychiatric symptoms in treatable inborn errors of metabolism. Her interests include movement disorders, organic psychosis and dementia in young adults.

Saba.nia@wienkav.at

Notes:

Joaquin Carneado-Ruiz, J Neurol Neurophysiol 2017, 8:2 (Suppl)
http://dx.doi.org/10.4172/2155-9562.C1.046

Stroke endovascular treatment: Efficacy and security analysis with the time of development

Joaquin Carneado-Ruiz
Hospital Universitario Puerta de Hierro, Spain

Objective: To analyze the ischemic stroke endovascular treatment efficacy and security with its time of development.

Patients/Methods: It is an observational study with a transversal design. The endovascular treatment for the embolic ischemic stroke in Madrid Community is coordinated by six Stroke Centers. These results are related to the University Hospital Puerta de Hierro (HUPH) treated patients. Inclusion and exclusion criteria are those recommended in international clinical guides, approved too by the Madrid`s Stroke working group. We describe results of patients treated between October 2013 and February 2016. We analyze the efficacy and security variables along different periods of time during the treatment development.

Results: Total number of patients taken for the study is 90. We divided the study population into three similar groups (tertiles) according to the treatment date. The following outcomes were observed: Age (mean): 64.78, Standard deviation (SD): 14.48. Female gender: 35 (38.90%). NIHSS median (IQ 1-3): 18(16-22); Time from onset to angiography (arterial puncture): 270 min (200-330 min); Arterial Recanalization TICI 2b/3 63(70%); Rankin 0-2; 7 day: 41(45.60%); Mortality 7 day: 13(14.44%) Hemorrhagic transformation: PH2 5 (5.6%). We found significant statistically difference for the recanalization grade (TICI), considering five grades (p=0.003), or between two categories (2b/3) (p=0.041).

Conclusions: We demonstrate efficacy and security for the endovascular ischemic stroke treatment. We demonstrate an improvement in the arterial recanalization grade with the time of treatment development.

Biography

Joaquin Carneado-Ruiz is currently working at Hospital Universitario Puerta de Hierro Madrid as a Neurologist/Medical Doctor, (Spain). He is the Director of Stroke Unit and Coordinator of Neurosonology Laboratory and Acute Stroke treatment. Education and Training: Neurologist Medical Doctor HU Puerta de Hierro. . Fellowship in Cerebrovascular Disease and Neurosonology., (Spain) StrokeUnit. HU Clínico San Carlos. Madrid. 1999-2000. University of California Los Angeles Medical Center. NeurologyDepartment. StrokeUnit. , (UnitedStates) visitingStrokeFellowship. Feb-2000 to Jun-2000. Doctoral Thesis. 2002-2004Universidad Autonoma de Madrid. He has published more than 25 papers in reputed journals and has been serving as an Editorial Board Member of repute.

jcarnead@gmail.com

Notes:

Ana Frances, J Neurol Neurophysiol 2017, 8:2 (Suppl)
http://dx.doi.org/10.4172/2155-9562.C1.046

Pro-inflammatory cytokine IL-1 in central nervous and reproductive systems in multiple sclerosis female patients: Communication between nervous, endocrine and immune systems

Ana Frances
Institut d'Investigació Sanitària Pere Virgili (IISPV), Spain

Multiple Sclerosis (MS) is a complex disorder of the central nervous system (CNS) characterized by inflammation, demyelination, and axonal degeneration. The concept that sex hormones may play a role in MS pathogenesis and disease activity is based on two well-established clinical observations: a higher prevalence of MS in females compared to males and a decrease in disease activity during pregnancy, in particular, in the third trimester. In the literature, studies demonstrate significant differences between female and male brain, at molecular and cellular levels as well as its structure. All these features have been called Dimorphism (two forms in the same specie). The *Sry* gene (sex determining region of the Y chromosome) is responsible of sexual differentiation of the brain and is originated from work on the hypothalamus once the fetal testes have been formed, releasing 17 β-estradiol. IL-1 gene family has been implicated in the pathophysiology of multiple sclerosis (MS), where IL-1α and IL-1β has been found in MS lesions, as well as increased serum interleukin-1 receptor antagonist (IL-1ra). Estrogens act as protective hormones in neurons, in several models of neurodegeneration, including disorders caused by excitotoxicity and oxidative stress. It is relevant to notice the communication between nervous, endocrine and immune systems. The principal link between the endocrine system and CNS is the hypothalamic–pituitary–adrenal gland (HPA) axis.

Biography

Ana Frances is an Associated Editor of *International Journal of Psychology and Neuroscience*. She is an Assistant Professor at Valencia University. She is a Cytokines specialist and studied about IL-1 in the reproductive system in implantation and female patients with multiple sclerosis. She did her Master's in Preimplantatory Diagnosis (PDG) from Barcelona University. She has several publications in journals such as *JCEM, Fertility and Sterility, Journal of Reproductive Immunology, Human Reproduction, and Endocrinology*. She has got three academic awards from Society for Gynecological Investigation and American Society for Reproductive Immunology. She has several chapter books in Oxford University Press and Editorial Médica Panamericana. She is the Laboratory Director of Hospital Joan XXIII - Ob/Gyn Dept.

anaf09064@gmail.com

Notes:

Xinyan Gao, J Neurol Neurophysiol 2017, 8:2 (Suppl)
http://dx.doi.org/10.4172/2155-9562.C1.046

Heterotopic and homotopic effects of acupuncture on pain modulation share different story

Xinyan Gao
China Academy of Chinese Medical Sciences, China

Mast cell-microglia crosstalk in dorsal horn, dorsal root ganglion (DRG) and peripheral and central ATP participation pain modulation. Mast cell tryptase cleavage of proteinase receptor 2 (PAR2) is activated in microglial cells during neuorpathic pain, which induces microglia P2X4 receptor up-regulation and BDNF releasing. Increasing recent evidence has revealed that spinal dorsal horn microglia has an intimate relationship with Electro Acupuncture (EA) analgesia. One of the objectives is to explore whether EA has a neuroprotective effect on microglial activation and microglia-mast cell crosstalk, induced by neuropathic pain in the dorsal horn and DRG in chronic constriction injury(CCI) rats. In addition, there were also reports on local increase of adenosine in human subjects and mice during EA analgesia, and adenosine subtype A1 receptor antagonist, reduced this effect. The other objective is to check caffeine intake, a nonselective antagonist of adenosine may reduce the EA analgesia effect. CCI neuropathic pain model were made on adult male Sprague-Dawley. Paw withdrawal threshold (PWT) was detected pre-EA and post EA. The expression of microglia receptors in spinal dorsal horn and in the DRG were measured by immunofluorescence. C fiber reflex, nociceptive stimulus evoked myoelectricity performance. PWTs in CCI rats were significantly reduced in ipsilateral paws compared to contralateral paws and were increased significantly after EA. Microglia-mast cell crosstalk related receptor expressions were up-regulated after peripheral nerve injury. The expressions of above receptors are decreased after EA intervention. Caffeine intake hinders decrease of C fiber reflex EMG induced by EA.

Biography

Xinyan Gao has completed her PhD from China Academy of Chinese Medical Sciences (CACMS), and Postdoctoral studies from Baptist University of Hongkong in 2009. She is the Director of Department of Physiology, Institute of Acupuncture. She has published more than 30 papers in reputed journals and has been serving as an Editorial Board Member for several peer reviewed journals.

gaoxy@mail.cintcm.ac.cn

Notes:

Aziza Al-Rafiah, J Neurol Neurophysiol 2017, 8:2 (Suppl)
http://dx.doi.org/10.4172/2155-9562.C1.046

Plastin3 as a therapeutic target in spinal muscular atrophy

Aziza Al-Rafiah
King Abdul Aziza University, Saudi Arabia

Spinal muscular atrophy (SMA) is a devastating childhood motor neuron disease caused by mutations in the survival motor neuron 1 gene *(SMN1). SMN1* and *SMN2* are nearly identical genes producing the survival of motor neuron (SMN) protein. SMN protein plays a crucial role in mRNA splicing and β-actin mRNA transport along the axons. In SMA, the mutation leads to the loss of *SMN1*, which cannot be fully compensated by the *SMN2* gene, which predominantly produces a truncated protein. The loss or reduction of SMN protein leads to motor axonal defects and motor neuron cell death. There are currently no treatments available but therapies have focused on increasing SMN through replacing SMN1 or increasing full length SMN from *SMN2*. The actin-binding protein Plastin 3 (*PLS3*) has been reported as a modifier for SMA, making it a potential therapeutic target. Recently, it was shown that the overexpression of the PLS3 gene improved axonal outgrowth in SMN- deficient motor neurons of SMA Zebra fish and cultured motor neurons from mouse embryos. Gene therapy using viral vectors was carried out *in vitro* and *in vivo* to assess whether the overexpression of *PLS3* could rescue neuronal loss in SMA and be developed as a therapy. The SMN□7 mouse model produces low levels of SMN, modelling severe SMA disease with an average lifespan of 12 days and loss of motor neurons. This study has established that the SMNΔ7 mice have little or no detectable *PLS3* from birth, making it a good model for developing PLS3 gene therapy. Lentiviral vectors were able to upregulate PLS3 expression in different cell lines. Transduction of NSC34 cells with LV-PLS3 vector led to a five-fold increase in expression of PLS3 compared to controls. In smn-deficient MNs, expression of *PLS3* restored axonal length and showed a strong neuroprotective effect. Pre-clinical in vivo proof-of-concept studies using adeno-associated virus serotype 9 (AAV9) encoding PLS3 in SMNΔ7 mice showed high transduction efficiency and overexpression of *PLS3* specifically targeted to neurons in the central nervous system (CNS). This led to a small but significant increase of lifespan by 54%. However, *PLS3* was not able to prevent disease onset. Although there was no improvement of phenotype, this study has demonstrated the potential use of *PLS3* as a target for gene therapy, possibly in conjunction with other modulators of disease.

aalrafiah@kau.edu.sa

Notes:

Jalellah B Noor et al., J Neurol Neurophysiol 2017, 8:2 (Suppl)
http://dx.doi.org/10.4172/2155-9562.C1.046

Locked in syndrome: A case report

Jalellah B Noor, MD, Marietta Olaiver, MD, FPCP, FPNA, Alexander Abe MD, FPNA, Jonathan James G. Bernardo, MD, FPCP, FPCC
Ospital ng Makati
Philippines

Synopsis: We report a case of a 53-year-old male, newly diagnosed with hypertension, presented with left-sided body weakness and numbness and decreased verbal output. Over 10 days, patient had been experiencing intermittent rotatory dizziness, no history of trauma nor loss of consciousness. After presentation, patient became quadriplegic, anarthric and presented an initial period of coma, requiring intubation and ventilatory assistance. He was started on a neuroprotectant, low molecular weight heparin, antiplatelet, antidyslipidemiac agent, oral antihypertensive agent on day of admission. Early intensive rehabilitation and family counselling were done. While admitted, patient developed ventilator acquired pneumonia and eventually expired on his 30th day of hospitalization.

Clinical Presentation: Patient is M.B. 53 year old male, Filipino, right handed, presented with left-sided body weakness and numbness. 10 days prior to admission, patient experienced intermittent rotatory dizziness with slurring of speech relieved by rest. One day prior to admission, with recurrence of dizziness, still with slurred speech, he sought consult in a private Clinic with BP of 190/100, diagnosed with BPPV and Hypertension Stage II, given medications. 5 hours prior to admission, patient complained of left-sided body numbness with weakness and was noted to have decreased verbal output but can comprehend and follow some commands. He sought consult and subsequently admitted. Patient is recently diagnosed with Hypertension Stage II, prostatic enlargement on Tamsulosin 200mcg, 1 tab OD. Patient's father has hypertension, siblings has Type 2 DM and heart disease on maternal side. He was nonsmoker, occasional alcoholic beverage drinker, denies illicit drug use. He was a retired seaman residing in USA, and a volunteer employee at Home of Aged in USA.

Physical Findings: At time of examination, patient was awake, conscious, coherent , not in distress with vital signs as follows: BP 170/90 (MAP 117 mmHg), HR 62 beats per minute, RR 20 cycles per minute, afebrile at 37degrees with 02 saturation of 98%. He was average built male, weigh 75kg, BMI 27.5 kg/m2. On neurological examination, GCS 11 (E4V2M5), NIHS Score of 19, 2-3 mm pupils sluggishly reactive to light, AVR ratio 2:3, no signs of hypertensive retinopathy, preferential gaze to right with full extraocular muscle movement, left central facial palsy, bilateral weak gag reflex, cannot shrug left shoulder because of left sided weakness, left hemiplegia of 2/5 upper and 1/5 lower extrimities. With the same degree of painful stimulation, there is a delay in the response over the left upper and lower extemities.

Laboratory Work-up: CBC, electrolytes, kidney and liver functions tests, chest xray, urinalysis and KUB with Prostate Ultrasounds were normal. Plain Cranial CT showed chronic infarct, right subinsular region with mild microvascular ischemic disease and atherosclerotic intracranial vessel disease. Cranial MRI showed acute to subacute infarct at anterior two-thirds of the pons, chronic infarct at periphery of the left pons and right lentiform nucleus; atherosclerrotic internal carotid arteries; occlusion or very slow flow in the distal vertebral arteries and proximal basilar artery. Transcranial doppler ultrasound was normal. Carotid Duplex Scan showed <50% stenosis at right common carotid artery, 50-59% stenosis right internal carotid artery, <50% (1-15%) stenosis left internal carotid artery, indicative of a more distal occlusive in the posterior circulation. Echocardiography showed mild to moderate aortic regurgitation and Grade 1 left ventricular diastolic dysfunction.

Diagnosis:Locked-In Syndrome; Hypertension Stage II; Ventilator Acquired Pneumonia

Treatment:Medical management started on neuroprotection, antiplatelet, low molecular weight heparin, maintaining an airway and adequate oxygenation via mechanical ventilator, tracheostomy and gastrostomy were done, early intensive rehabilitation, and family counselling.

Outcome :While admitted, patient developed ventilatory acquired pneumonia as caused of demise of patient.

Significance: Locked In Syndrome (LIS) is a rare neurological condition characterized by complete paralysis of voluntary muscles in all parts of the body except control of eye movement, preserved cognitive functioning and a primary code of communication that uses vertical eye movements or blinking. This condition leaves the individual completely mute and paralyzed. Prevalence is unknown. Their only means of communication is by blinking or vertical eye movements because of sparing of the midbrain tectum, which allows communication.

Recommendations:Locked-in syndrome present as a great challenge to internists, hence, thorough investigation is needed in arriving at diagnosis. Internists should do the complete neurological examination and assessment. To our knowledge, there is no known documented incidence in the local setting of Makati. It can be difficult to diagnose and it can be missed if voluntary vertical eye movement is not assessed. With the various new modalities to diagnose LIS, there now exists the possibility to unlock sufferers from this devastating neurological condition.

Biography

Jalellah B Noor has completed her Doctor of Medicine at Far Eastern University - Nicanor Reyes Medical Foundation, Philippines. She has completed her Internal Medicine training at Ospital ng Makati, Makati City, Philippines.

aalrafiah@kau.edu.sa

Aimsamrarn P et al., J Neurol Neurophysiol 2017, 8:2 (Suppl)
http://dx.doi.org/10.4172/2155-9562.C1.046

Reliability and validity of the Alberta infant motor scale Thai version

Aimsamrarn P[1], **Siritaratiwat W**[1] and **Emasithi A**[2]
[1]Khon Kaen University, Thailand
[2]Ramathibodi Hospital, Thailand

Introduction: Delayed motor development affects the quality of life of both children and their family members. An early detection allows a rehabilitation program to start sooner. The Alberta Infant Motor Scale (AIMS) is an observational assessment tool for measuring gross motor maturation. This scale is reliable and widely-used for clinical and research purposes in various countries.

Aim: This study aimed to translate the AIMS into Thai language and examine its reliability and validity.

Methodology: The cross-cultural translation and adaptation process were proceeded to obtain the AIMS Thai version. Three physical therapists were asked to participate. Two physical therapists evaluated the video recordings of 30 full-term Thai infants aged from birth to 18 months using the AIMS Thai version, and one physical therapist used the Bayley Scales of Infant and Toddler Development®, Third Edition (Bayley-III® Screening Test). The Cronbach's alpha was used to estimate the internal consistency. The Intra-class correlation coefficient (ICC (3,1)) was used to assess the inter-rater reliability with a 95% confidence interval. The correlations between the AIMS Thai version and Bayley-III® Screening Test were examined by the Spearman's rank correlation coefficient.

Findings: The AIMS Thai version has high internal consistency with the Cronbach's alpha of 0.994. The inter-rater reliability was satisfactory with the ICC of 0.989 (95% CI 0.977-0.955). The Spearman's rank correlation was 0.986.

Conclusion: The AIMS Thai version demonstrated satisfactory psychometric properties to assess the gross motor skills for Thai infants and toddlers

Biography

Aimsamrarn P is a PhD candidate in Rehabilitation Science Program at the Khon Kaen University. He is working as a Pediatric Physical Therapist, and believes that using good assessment tools help him develop proper rehabilitation plan.

nui.manobu@gmail.com

Notes:

11th World Congress on

Neurology and Therapeutics

March 27-29, 2017 Madrid, Spain

Scientific Tracks & Abstracts
Day 3

Neurology 2017

Khin Bo, J Neurol Neurophysiol 2017, 8:2 (Suppl)
http://dx.doi.org/10.4172/2155-9562.C1.046

Multiple sclerosis, corpus callosum and bedside test

Khin Bo
Northern Lincolnshire and Goole Hospitals NHS Foundation Trust, UK

Statement of the Problem: Demyelination affects highly myelinated structures like Corpus Callosum (CC). CC is unique in function that it connects right and left hemisphere. It synchronises bimanual or bipedal activities. Affecting CC can disturb synchrony between the two hemispheres.

Methodology: Seventy multiple sclerosis patients from outpatient clinics and home visits were tested for bimanual hand function. Comparison of speed between rapid supination/pronation of left and right hand separately and then clapping of both hands supination/pronation of each hands alternatively has been done. Patients have to do as fast as they could. Noticeable slowing of clapping was taken as a sign of slowing down of conduction through CC. Exclusion criteria are upper limb power <3/5 MRC scale, pain, visual impairment, intentional tremors, stroke or cognitive impairment. Study period started from 01/09/2016.

Findings: 31 patients were excluded, 34 patients showed no noticeable difference, 2 patients were difficult to make conclusions and 3 patients showed definite slowing down in clapping.

Conclusion & Significance: It is possible to detect CC involvement by doing bedside test. Positive patients will have difficulties in doing bimanual activities like mobility using two sticks, typing using keyboard, pushing wheel chair bimanually, etc. The magnitude of slowing down can be used as an indicator of the reference day (a good or a bad day). Clapping can also be used as an exercise for CC. It is difficult to test CC conduction speed electro physiologically. The sample size taken is not large enough and larger studies need to be performed to validate the findings.

Biography

Khin Bo is a Lecturer (Hon.) in Hull York Medical School. He is a Specialist in Spasticity Management and Functional Electrical Stimulation. He has been involved in the management of long term neurological patients in MDM setting for over 10 years.

bokhinmaung@yahoo.co.uk

Notes:

Judit Subirana-Mirete, J Neurol Neurophysiol 2017, 8:2 (Suppl)
http://dx.doi.org/10.4172/2155-9562.C1.046

The meaningfulness of cognitive processing speed in the assessment of cognitive impairment

Judit Subirana-Mirete
Ramon Llull University, Spain

The aim of this communication is to introduce the importance of the inclusion of Cognitive Processing Speed (CPS) in neuropsychological assessments for MCI & AD as the slowdown of the CPS is present in multiple diseases of the CNS among which we can include cognitive impairments of diverse aetheologies. Relation between CPS not only with white matter but also with grey matter gives us some clues about its importance in cognitive neurodegenerative processes. The separation between CPS and other cognitive processes is important to be considered and, although it has been shown possible, its everyday clinical assessment still presents many knots which are not easy to cope with. When assessing other cognitive domains, we usually use time-controlled neuropsychological tasks. These timings are often considered for the final conclusions of the overall cognitive status of the patients. However, we do not take into consideration that maybe only the CPS is slowed and there's no affect in the other cognitive domains but only slowed capacity of the system. For enhancing the assessment of CPS, some tests are being developed and adapted in order to be able to differentiate among the cognitive difficulties presented over evaluation on everyday clinical practice. We will be presenting new outcomes on CPS construct and its assessment as well as several studies that have been conducted in order to quantitatively evaluate the slowing of CPS in different stages of aging and cognitive impairment, including MCI and early stages of AD.

Biography

Judit Subirana-Mirete completed her PhD in 2016 at Ramon Llull University in the field of the assessment of cognitive impairment focusing on the importance of cognitive processing speed. She has focused her formation in Neuropsychology and Neurosciences accomplishing her specialization in Neuropsychology in 2010 at Universitat Autonoma de Barcelona. Her research spans different areas including the early detection and evaluation of cognitive impairments and dementia. She has published, in this field, many articles as well as four book chapters. She received a grant from the Catalan Government to span her knowledge abroad, and to take up a position in the Oliver Zangwill Center (UK). She is currently on daily private practice as well as at the Ramon Llull University where she complements her clinical profile with national and international research projects in the field of Neuropsychology.

juditsm@blanquerna.edu

Notes:

Maia Machvariani-Tsereteli et al., J Neurol Neurophysiol 2017, 8:2 (Suppl)
http://dx.doi.org/10.4172/2155-9562.C1.046

Psychological and emotional problems in adolescents with Epilepsy

Maia Machvariani-Tsereteli and **T Gagoshidze**
Ivane Javakhisvili Tbilisi State University, Georgia

Background: Psychological, social and emotional outcomes of epilepsy are not always obvious. Very often epilepsy-related psychological and emotional problems remain undetected and therefore ignored. As being one of the most stigmatized diseases, epilepsy causes many hidden and apparent problems like stigma and depression seem to be the most prevalent of them.

Aim: Aim of the study was to reveal stigma-related attitudes and relation between stigma and depression level in adolescents with epilepsy.

Methods & Materials: 48 patients and 48 controls aged 13-18 years participated in the research. Card sorting task was used to reveal stigma-related attitudes: Participants were given a stack of cards and were asked to group them together as it makes sense to them (no right or wrong answers). The results of categorization were fixed in protocol. To assess the level of depression we used Beck Depression Inventory (BDI).

Results: For qualitative data, cluster analysis has been used. Results of the analysis revealed that social functioning and relationships appear to be the most important for adolescents suffering from epilepsy; positive emotional and social relationships are mediated by maintaining successive relationships with other members of the society; family seems to be considered by adolescents as a stable source of social respect. Safety and regime compliance are perceived as guaranteed success and luck. According to BDI completion results, 5.5% of patients have severe to extreme depression level, 18.2% have severe-moderate level, 27.3% have mild-moderate level, 49.1% had no depression. Gender differences: Girls with epilepsy, as well as healthy ones were more depressed than boys. Seizure control appeared to be a significant factor for depression level. In patients with well-controlled seizures, 60% reported no depression. Whilst in patients with uncontrolled seizures, only 37.9% reported no depression. Surprisingly, control group data have shown only slight difference: Only 54.2% of healthy adolescents' data revealed no depression.

Conclusions: Social issues appear to be of biggest importance for adolescents with epilepsy. Evaluation of emotional state revealed that severe and extreme depression level is observed only in female adolescents with epilepsy. In both, control and patients groups, girls appeared to be more depressive than boys. As was expected, seizure control factor had significant influence on depression level. Surprisingly in control group healthy adolescents, mild-moderate depression rates appeared even higher than in patients with good seizure control. Generally speaking, depression rates in healthy merit attention, 48.8% of reported depression of different levels is too high a percentage for control group. For future, we are considering to conduct deeper and more complete research of depression level in healthy adolescents.

Biography

Maia Machavariani-Tsereteli completed her MSc in Clinical Neuropsychology from Ivane Javakhishvili Tbilisi State University. Currently, she is pursuing PhD in the same university. She is also working as Neuropsychologist (National programs on prevention and early diagnosis of epilepsy in children and adults) at the Institute of Neurology and Neuropsychology and delivers lectures and seminars as Assistant Professor at Ivane Javakhishvili Tbilisi State University. She conducted researches on naming development neuropsychological and neurolinguistic analysis, the research of creativity in Georgian population-Torrans Creativity Test adaptation, neuropsychological analysis of human executive and other cognitive functions during natural aging, stigma and self-stigma in adolescents with epilepsy.

mai.machavariani@gmail.com

Notes:

Parreira M et al., J Neurol Neurophysiol 2017, 8:2 (Suppl)
http://dx.doi.org/10.4172/2155-9562.C1.046

Efficacy of a fatigue management intervention in multiple sclerosis patients

Parreira M[1], **Silva A**[2] and **Sampaio A**[1]
[1]University of Minho, Portugal
[2]Senhora da Oliveira Hospital, Portugal

In Multiple Sclerosis (MS), fatigue is a troublesome and common symptom that contributes to disability. Fatigue Management Intervention (FMI) is an approach that seeks to manage fatigue, based on energy conservation principles that work as guidelines for performing tasks conserving energy, following behavioural strategies. The main purpose of this research is to establish the efficacy of a FMI on physical and mental fatigue (Multidimensional Assessment of Fatigue Scale- MAF), quality of life (World Health Organization Quality of Life – Bref- WHOQoL-Bref), self-efficacy (Multiple Sclerosis Self-Efficacy- MSSE), MS impact (Modified Fatigue Impact Scale-MFIS) and social participation (Impact on Participation and Autonomy-IPA) in MS patients who are prescribed with injectable First-Generation Disease Modifying Therapies (FDMT). Fifty participants suffering from MS-related fatigue were recruited and twenty-five completed the FMI during 8 sessions, 1 hour/week, conducted by a psychologist in an individual-format protocol, a modified version of the Packer's course (1995), the only standardized and published programme to date. 25 patients integrated the control group (allocated to current practice, also taking FDMT). Self-report measures and neuropsychological assessments were used to access fatigue before and after the experimental period and to compare with the control group. After the participation on MFI, participants reported a statistically significant decrease (MD=-3.1) in fatigue and MS impact, improved self-efficacy and quality of life. Moreover, they reported lower overall fatigue when compared to the control group. There was no improvement in social participation. All behavioural strategies were used by 55% of the participants and 72% were rated as effective. Despite the sample size, our findings highlight that this FMI can be a beneficial non-pharmacological intervention for MS participants and show that they implemented new energy conservation principles and also perceived them as effective.

Biography

Parreira M completed her Master's Degree in Clinical Psychology at University of Minho (Braga, Portugal) in 2012 and later performed Postgraduate studies in Neuropsychology of Intervention. She has worked in hospitals as a Neuropsychologist, and actively collaborates with a Multiple Sclerosis Association and is currently conducting research in a clinical trial related to the Alzheimer's disease and a study in Multiple Sclerosis at Alto Ave Hospital Centre, in association with University of Minho. She has published papers and presented oral and poster presentations, and she is an Editor of the *International Journal of Psychology and Neuroscience*.

martafgparreira@gmail.com

Notes:

Ann Marie Gillie, J Neurol Neurophysiol 2017, 8:2 (Suppl)
http://dx.doi.org/10.4172/2155-9562.C1.046

A voice for epilepsy

Ann Marie Gillie
Epilepsy Advocate, Canada

Being diagnosed with epilepsy at the age of two and half years definitely created several obstacles for myself and my family, but being stubborn as well as positive individual that I am, I was able to get through it. I actually beat Epilepsy. On December 03, 2002 my life was changed forever when I underwent neurosurgery at University of Alberta Hospital in Edmonton, Alberta, Canada. My surgery was called Left Selective Amygdalohippocampectomy and the procedure was a 100% success. I had six grand mal seizures two days before my surgery and never imagined that those would be my last. I have been off all medications now for over 11 years and that too is an amazing accomplishment and feeling. My history with Epilepsy was like a roller coaster, on meds, off meds, side effects, seizures, no seizures; it was a never ending series of hurtles, but I stayed focused and survived it. I was never in special need classes, I played sports and told that I have an infectious personality, so I am regularly told. Since my surgery in 2002, I have accomplished some amazing tasks and ones I thought would never have been possible. I have published two books have had several articles published in papers and magazines, as well as international medical sites like SNI (Surgical Neurology International) and CURE. My number one goal is to educate others around the world, but not from a professional side of things but from someone that has lived it and that understands the obstacles others go through that live with Epilepsy. From my understanding, there are not a lot of individuals that speak on the topic of Epilepsy, locally or internationally and I want to change that. I have been a people's person for my whole life and I feel that there was a reason I am here today speaking about my story. Epilepsy needs to be talked about and I am the one to do that. I want to be that Voice for Epilepsy.

Biography

Ann Marie Gillie works as an Education Assistant for Parkland County School Division in Alberta, Canada, where her role is working primarily with students who suffer from ADHD/ADD/ ODD and other behavioral disorders. She was asked in 2012 to be a Canadian Advocate for Epilepsy and with her passion and drive for motivating others; she has taken the role to speak internationally. She is also a Published Author (If Walls Could Talk and Let's Talk about Epilepsy) and has had several articles published in regards to her personal experience with Epilepsy and Surgery. Her topics of discussion at conferences and seminars are: Left Selective Amygdalhippocampectomy, Women and Epilepsy, Sex & Seizures. She is passionate about helping those that struggle with the disorder and her goal is to help others internationally, both professionals in the field and those living with the disorder.

pace_ann@yahoo.ca

Notes:

Selma Pelaez, J Neurol Neurophysiol 2017, 8:2 (Suppl)
http://dx.doi.org/10.4172/2155-9562.C1.046

Innovation in the physiotherapy treatment of Parkinson's disease

Selma Pelaez
UManresa-FUB, Spain

Parkinson is a disease characterized by four cardinal signs: Bradykinesia, rigidity, tremor and postural instability. The traditional treatment was based on gait re-education due to the slow movement pattern and short steps that increases the risk of falling and this fact leads to work the balance and compensatory strategies to prevent it. Commonly, referral to physiotherapy is done once the disease has progressed enough to lead the patient to fall. Nevertheless, innovations in physiotherapy are among others related to the new evidence-based PD warrior developed by Melissa MacConaghy for stages I/II in Parkinson's disease (PD). The core principles of this recent physiotherapy treatment define how the exercises to-do have to be tailored; thus, the main characteristics are amplitude/power, fun, specific, high effort, frequency and meaningfulness. Amplitude works as an effective element to reduce bradykinesia and also drives patients to perform activities symmetrically. Another intrinsic element of the different exercises is the required high effort throughout the session. The physiotherapist has the responsibility to encourage patients to get the maximum energy in each exercise because this fact alters cortical hyper-excitability what may help to push the disease back. The frequency of attending the sessions enhances the skill acquisition and improves the cognitive state of the patient as well as making the exercises fun, dynamic and attractive motivates the patients to perform and follow-up the treatment. Finally, meaningful activities empower the linkage of the patients to the treatment because they would see improvements in functional tasks of their daily life; thus, a relevant goal setting is crucial in the design of the session along with increasing the complexity of the tasks with the objective of driving neuroplasticity, assisting with retention, skill acquisition and other characteristics. Therefore, physiotherapy can contribute to diminish or hopefully, stop the progression of this disease by fighting against the symptoms of PD through an exercise program, education of the patients, behavior change towards the disease and peer support. Similarly, LSVT BIG and John Argue Method are recent techniques which can be taken into account because they may share common aims in PD's therapy.

Biography

Selma Pelaez has completed her Msc in Neurorehabilitation from the University of Nottingham, UK. She is working in a unit where patients are mainly affected by dementia, Alzheimer and ictus. Additionally, she is one of the members of a project called "Theraschool" in which therapy for children is performed at the school. Her main aims are to explore the areas and environments, in which a neurophysiotherapist can work, and to nourish her knowledge in different settings and to be involved in research in Neurorehabilitation.

selmapelaez@hotmail.com

Notes:

11th World Congress on

Neurology and Therapeutics

March 27-29, 2017 Madrid, Spain

Young Researchers Forum Day 3

Neurology 2017

Linda Rosalina et al., J Neurol Neurophysiol 2017, 8:2 (Suppl)
http://dx.doi.org/10.4172/2155-9562.C1.046

Neuroprotective effect of catechins gambier on beta amyloid plasma and cognitive in Dawley-Sprague as model of Alzheimer

Linda Rosalina, Indrawati Lipoeto, Amir Darwin and **Ellyza Nasrul**
Padang State University, Indonesia

Objectives: Alzeimer's disease (AD) is an important social and economic issue for our societies. Patient with AD progress from stage of mild memory impairment to complete dementia. The development of therapeutics against this severe dementia requires assessing the effects of new drugs in animal model. An increasing body of evidence implicates both brain inflammation and oxidative stress in pathogenesis of AD. A variety of studies have demonstrated that herbal extract and active compound of *Uncaria* are effective on the in vitro and in vivo neurodegenerative models. Cathecin from *Uncaria gambier* Indonesian traditional herbs have been found to possess anti inflamatory and antioxidative effect. There was no report about neuro protective effect of cathechins gambier in Dawley-Sprague as model of Alzheimer. In the present study, we investigated the neuroprotective effect of cathechin gambier on beta amyloid-42 plasma (Aβ-42) and cognitive function of the Dawley-Sprague as animal model for Alzheimer's.

Methods: Five groups of each 7 female, 12 weeks, Dawley Sprague, based on negative control, positive control, catechins dose 1, 2, 3. Four groups with ovarectomy and D-galactose 500 mg/weight for 4 weeks. Four animals of each group underwent necropsy to collect the blood for blood evaluation on the second weeks after treatment of cathechins. Terminal sacrified all groups in the 4th week after the treatment.

Results: Rats treated Alzheimer showed shift to the light arms and spent long time compared with controls. It shows that the Alzheimer's rat did not fear or panic, which is one of the characteristics amygdala damage. Since the amygdala also affect hypocampus memory's performance.They showed decreased the ability of spatial memory from the 2nd week of giving D-galactose and ovarectomy, but then they showed visible improvement of spatial memory in the 4th weeks. Trends of increasing in movement of group treated with high cathechins dose showed an improvement of locomotion. At the end of study, cathechins reduced the level of soluble beta amyloid 42 plasma. Low level of Aβ is required to set up and maintain the plasticity of sinaps and to improve cognitive function.

Conclusions: The result of the present study supports the concept of neuroprotective effect of cathechin gambier on beta amyloid plasma and cognitive function.

roselind_sweety@yahoo.com

Notes:

Vivian Hsu, J Neurol Neurophysiol 2017, 8:2 (Suppl)
http://dx.doi.org/10.4172/2155-9562.C1.046

Blockage of system xc- improves cocaine addiction in cocaine-dependence mice

Vivian Hsu
China Medical University, Taiwan

The cystine-glutamate antiporter or system x_c^- is a membrane-bound Na+-independent amino acid transporter which exchanges intracellular glutamate for extracellular cysteine. Previous studies have shown that activation of system x_c^- by its activator N-acetylcysteine (NAC) inhibits reinstated cocaine or nicotine seeking behaviors. In addition, the expression of system x_c^- subunit xCT in brain was up-regulated in cocaine dependence mice, but down-regulated in cocaine withdrawal mice, suggesting a dynamic change in xCT expression and its activity during addiction. Unfortunately, system x_c^- is not the only target for NAC and all pharmacological inhibitors commonly used to study system x_c^- activity have off-target effects. These issues raise the uncertain role of system x_c^- in addiction. In this study, we tested xCT knockout (xCT-/-) mice for dependence-induced drinking using the chronic intermittent cocaine-two bottle choice drinking protocol. There was significant inhibition in daily cocaine consumption in xCT-/- mice during free-choice drinking as compared to wild type (WT) mice, indicating genetic deficiency of system x_c^- blocked cocaine dependence. Moreover, sulfasalazine (SAS), the US Food and Drug Administration (FDA) that blocks system x_c^-, significantly attenuated the daily cocaine consumption during free-choice drinking in cocaine-dependence mice as compared to control vehicle (DMSO). Taken together, these findings show blockage of system x_c^- improves cocaine addiction in cocaine dependence-mice. Inhibition of system x_c^- represents a new class of therapeutics against cocaine addiction.

Biography

Vivian Hsu is currently obtaining her Master's Degree at China Medical University. She opts to apply for Doctorate studies in the future. She is a student of Professor Chia-Hung Hsieh who has published more than 10 research papers in notable journals. He is currently researching on therapeutics for cocaine addictions with a plan to go into clinical trials.

vivianhsuhw@gmail.com

Notes:

Zia-Uddin Ahmed, J Neurol Neurophysiol 2017, 8:2 (Suppl)
http://dx.doi.org/10.4172/2155-9562.C1.046

Novel Psychoactive Substance (NPS): Effects of the 5-IT and D2PM on the Dopamine System and 5-HTA, 5-HTC receptors site

Zia-Uddin Ahmed
University of Roehampton, UK

The use of Novel Psychoactive Substances (NPS) has grown rapidly in recent years. NPS, formerly known as "legal highs" are man-made substances which are used like the illegal drugs. 5-(2-Aminopropyl)indole is an indole and phenethylamine derivative with empathogenic effects. Diphenylprolinol (D2PM) is another novel stimulant psychoactive drug, which is an inhibitor of norepinephrine-dopamine reuptake. Their effects can be powerful and they have long lasting psychostimulant properties. The aim of study was to investigate the potential addictive and hallucinogenic properties of two novel psychoactive substances 5-IT and D2PM, through testing their effects at the dopamine transporter (DAT) and on serotine 5HTA and 5HTC receptors site in rat brain in vitro. Cocaine was used as reference substance in considering DAT effects. It was hypothesised that 5-IT, D2PM and cocaine would compete with [^{125}I] RTI-121 at DAT in a concentrations-dependent manner and with [^{125}I]-DOI at 5-HT_A, C systems which may trigger its effect of putative stimulant and hallucinogenic. Quantitative Autoradiography was employed and results revealed that there are concentration-dependent effects of 5-IT, D2PM and Cocaine on the intensity of iodine-125 signal in brain tissue while competed with [^{125}I] RTI121. Whereas both 5-IT and D2PM showed that no significant effects at 5-HT_A and 5-HT_C receptors while competed with [^{125}I] DOI. The present study established that 5-IT and D2PM are both more effective and potent than cocaine in stimulating dopamine release. These data suggests that 5-IT and D2PM are dopaminergic rather than serotonergic. Therefore, 5-IT and D2PM may pose significant adverse effects in human users.

Biography

Zia Uddin Ahmed recently graduated from the University of Roehampton with a merit in MSc Clinical Neuroscience. Zia is working as a private tutor at a weekend education service since 2012, tutoring Key stages 3, 4, Btec and A-level pupils. He is currently looking for Research Assistant position. His ambition to become a neuroscientist as he believes neuroscientist is a noble profession, and not one to be taken lightly.

lightzia@hotmail.com

Notes: