



International Conference on
NEUROSCIENCE AND PSYCHIATRY

November 08-09, 2021 | Vienna, Austria

SCIENTEX CONFERENCES

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International Conference on
Neuroscience and Psychiatry

Nov 08-09, 2021 | Vienna, Austria

Theme: Discovering novel technologies to boost treatment of neurological disorders

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A special thanks to

OCM

Ruth Helena Lueg
Clinical psychotherapist
Germany

Session Chair

Angelo Lavano
University "Magna Graecia" of Catanzaro
Italy

Co-Chair

Ashis Pathak
Fortis Hospital
India

Carla A Giambrone
University of NY at Buffalo
USA

Moderator

Maithrayie Kumaresan
University Hospital Lewisham
United Kingdom

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Scientex conferences hosts a plethora of conferences in various fields but not limited to Medicine, Pharma, Health Science, Life Science, Engineering and Technology. All our events are organized with utmost care and diligence in providing the greatest of facilities and infrastructure that one could possibly provide for the smooth and successful transmission of knowledge transfer that takes place between the attendees of our conference for mutual beneficiary purposes that would eventually push to attain the prosperity of solving the modern scientific problems for the betterment of our lives.

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**International Conference on Neuroscience and Psychiatry
November 08-09, 2021 | Vienna, Austria**

Day 01 (November 08, 2021)

| | |
|--|---|
| 08:55–09:00 | Introduction |
| Keynote Forum | |
| 09:00–09:35 | Title: “The Bignetti Model” is a cognitive model that paves the way from brain to mind |
| | Enrico Bignetti , Parma University, Italy |
| 09:35–10:10 | Title: Physiological and cellular targets of neurotrophic anxiolytic phytochemicals in food and dietary supplements |
| | Benjamin S Weeks , Adelphi University, USA |
| 10:10–10:30 | Break and Refreshment |
| Sessions: Neurology Neuroscience Brain and Neurological Disorders Mood Disorders Mental health and Psychology Psychiatry Neurosurgery | |
| 10:30–10:55 | Title: Circuit formation and synaptic plasticity in the mouse olfactory system |
| | Hitoshi Sakano , University of Fukui, Japan |
| 10:55–11:20 | Title: A case control study of cognitive distortions and quality of sleep in COVID-19 in-patients who are admitted in a tertiary care hospital |
| | Siva Anoop Yella , Telangana Institute of Medical Sciences, India |
| 11:20–11:45 | Title: Neuropathology in the visual analyzer in hypertensive glaucoma: Review |
| | Hana Chylova , Czech Technical University, Czech Republic |
| 11:45–12:10 | Title: Endoscopic excision of parenchymal brain tumour – The future option |
| | Ashis Pathak , Fortis Hospital, India |
| 12:10–12:35 | Title: Determination of the intramuscular motor endpoints for effective administration of botulinum toxin in the treatment of spasticity |
| | Alexandr Kovalenko , Military Medical Academy, Russian Federation |
| 12:35–13:35 | Lunch |
| 13:35–14:00 | Title: Intracranial pressure waveform: History, fundamentals and applications in brain injuries |
| | Gustavo Frigieri , Brain4care, Brazil |
| 14:00–14:25 | Title: Perceived changes of specific attitudes, perceptions and behaviors during the Corona pandemic in Germany |
| | Ruth Helena Lueg , Clinical psychotherapist, Germany |

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| 14:25–14:50 | Title: Neuroprotection, photoperiod and sleep |
| | Luz Navarro , National Autonomous University of Mexico, Mexico |
| 14:50–15:15 | Title: The Real Object Approach of Language (ROAL-Hypothesis) and the schematic component of consciousness for individual |
| | Noury Bakrim , University of the People, USA |
| 15:15–15:40 | Title: Cerebrovascular disease in COVID-19: Is there a higher risk of stroke? |
| | Marcos Altable , Virgen de Africa Clinic, Spain |
| 15:40–16:00 | Break and Refreshment |
| Workshop | |
| 16:00–17:00 | Title: Neuroplasticity and its application to evidence based practices in treating patients with aphasia secondary to CVA |
| | Julianne Freiwald Gaule , Vero Beach Reading and Speech-Language Pathology, USA |
| Video Presentation | |
| 17:00–17:15 | Title: Communication of persons with cerebral palsy, hearing impairment and other associated difficulties |
| | Ana Pavlović , University of Sarajevo, Bosnia and Herzegovina |
| 17:15–17:30 | Title: Pilot test for the relationship between drivers' hazard perception ability and cognitive traits of empathizing-systemizing |
| | Mikio Danno , Oriental Consultants Global Co., Ltd, Japan |
| 17:30–17:45 | Title: "Dialogue" between the human microbiome and the brain |
| | Natalia Beloborodova, Andrey Grechko , Federal Research and Clinical Center of Intensive Care Medicine and Rehabilitology, Russian Federation |
| 17:45–18:00 | Title: NO, CO and H2S in the modulation of AVP, OT and ANP release |
| | Ricardo Coletti , University of Ribeirão Preto, Brazil |
| B2B meetings & Panel discussions | |
| Conclusion of Day 01 | |

| Day 02 (November 09, 2021) | |
|--|--|
| Keynote Forum | |
| 09:00–09:35 | Title: Deep brain stimulation in treatment-refractory addiction: New potential therapeutic option Angelo Lavano , University “Magna Graecia” of Catanzaro, Italy |
| 09:35–10:10 | Title: Multimodal neuronavigation for brain tumor surgery in pediatric patients Roberto Garcia Navarrete , Centro Médico Naval, SEMAR and the Instituto Nacional de Pediatría, Mexico |
| 10:10–10:30 | Break and Refreshment |
| Sessions: Neuropharmacology Psychology Epilepsy Psychiatric emergencies Neuroscience Transcultural Psychiatry Neuroplasticity | |
| 10:30–10:55 | Title: Cognitive screening for adult psychiatric outpatients: Comparison of the cognivue® to the montreal cognitive assessment Amanda F Rose , Cleveland Clinic Akron General, USA |
| 10:55–11:20 | Title: Let them see you sweat: Integrating yoga and well-being Carla A Giambrone , University of NY at Buffalo, USA |
| 11:20–11:45 | Title: Anti-N-methyl-D-aspartate receptor encephalitis: A detailed review of the different psychiatric presentations and red flags to look for in suspected cases Ghasaq Kareem Subeh , Al-Karama Teaching Hospital, Iraq |
| 11:45–12:10 | Title: Onset age of substance use and neuropsychological performance in hospital patients Irma Höijer , University of Turku, Finland |
| 12:10–12:35 | Title: Move over mental health, brain health has arrived Leigh E Richardson , Brain Performance Center, USA |
| 12:35–13:35 | Lunch |
| 13:35–14:00 | Title: The role of radiotherapy in the treatment of primary central nervous system lymphomas Meral Kurt , Uludag University, Turkey |
| 14:00–14:25 | Title: Perceptions of Pakistani community towards their mental health problems: A systematic review Salman Shafiq , Lancashire and South Cumbria Care NHS Trust, United Kingdom |
| 14:25–14:50 | Title: A case of rare inflammatory brainstem syndrome-CLIPPERS Yatin C Sagvekar , Reliance Hospital, India |

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| 14:50–15:15 | Title: Cross sectional study of prevalence of physical health comorbidity in a cohort of inpatients in a secure acquired brain injury mental health service |
| | Suhaib Bin Bilal Hafi , Elysium Healthcare, United Kingdom |
| 15:15–15:40 | Title: The impact of the COVID-19 pandemic on psychiatric emergencies |
| | Tânia Patrícia Vasques Alves , Médio Tejo Hospital Center (CHMT), Portugal |
| 15:40–16:00 | Break and Refreshment |
| 16:00–16:25 | Title: Development of early diagnosis of Parkinson's disease: Illusion or reality? |
| | Michael V Ugrumov , Koltzov Institute of Developmental Biology RAS, Russian Federation |
| Poster Presentation | |
| 16:25–16:45 | Title: Physiological and cellular targets of neurotrophic anxiolytic phytochemicals in food and dietary supplements |
| | Benjamin S Weeks , Adelphi University, USA; Pedro P Perez , One Innovations Labs, USA |
| 16:45–17:05 | Title: Spectrum of non-motor symptoms in Parkinsons disease |
| | Maithrayie Kumaresan , University Hospital Lewisham, United Kingdom |
| 17:05–17:25 | Title: Child development in children of mothers with and without consumption during gestational stage |
| | Estefanía Elizabeth Vargas Alulema , Instituto Tecnológico Superior "Manuel Lezaeta Acharán", Ecuador |
| E-poster | |
| SCNP-E01 | Title: Developmental Coordination Disorder (DCD) in adults: A review of neuroimaging studies |
| | Agnieszka A Reid , Independent Researcher, United Kingdom |
| SCNP-E02 | Title: Effect of an educational intervention on knowledge and perception of individuals at risk for stroke in Tabuk, Saudi Arabia |
| | Mohammed F Albalawi , Prince Sultan Medical Military City, KSA |
| SCNP-E03 | Title: Psychosocial factors associated with premature ejaculation |
| | Saifun Nahar , National Institute Of Mental Health, Bangladesh |
| SCNP-E04 | Title: Conversion Disorder in Children and Adolescents: Definition, diagnosis, treatment and clinical illustration |
| | Sevlin Boz , Université Libre De Bruxelles, Belgium |
| SCNP-E05 | Title: Craniosacral therapy use in normal pressure hydrocephalus |
| | Young Park , Touro College of Osteopathic Medicine, USA |
| B2B meetings & Panel discussions | |
| Awards and Closing Ceremony | |

International Conference on

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Day 1 **Keynote Speakers**



| KEYNOTE SPEAKERS |
|---|
| <p>Title: “The Bignetti Model” is a cognitive model that paves the way from brain to mind Enrico Bignetti, Parma University, Italy</p> |
| <p>Title: Physiological and cellular targets of neurotrophic anxiolytic phytochemicals in food and dietary supplements Benjamin S Weeks, Adelphi University, USA</p> |
| ORAL PRESENTATIONS |
| <p>Sessions: Neurology Neuroscience Brain and Neurological Disorders Mood Disorders Mental health and Psychology Psychiatry Neurosurgery</p> |
| <p>Title: Circuit formation and synaptic plasticity in the mouse olfactory system Hitoshi Sakano, University of Fukui, Japan</p> |
| <p>Title: A case control study of cognitive distortions and quality of sleep in COVID-19 in-patients who are admitted in a tertiary care hospital Siva Anoop Yella, Aster Prime Hospital, India</p> |
| <p>Title: Neuropathology in the visual analyzer in hypertensive glaucoma: Review Hana Chylova, Czech Technical University, Czech Republic</p> |
| <p>Title: Endoscopic excision of parenchymal brain tumour – The future option Ashis Pathak, Fortis Hospital, India</p> |
| <p>Title: Determination of the intramuscular motor endpoints for effective administration of botulinum toxin in the treatment of spasticity Alexandr Kovalenko, Military Medical Academy, Russian Federation</p> |
| <p>Title: Intracranial pressure waveform: History, fundamentals and applications in brain injuries Gustavo Frigieri, Brain4care, Brazil</p> |
| <p>Title: Perceived changes of specific attitudes, perceptions and behaviors during the Corona pandemic in Germany Ruth Helena Lueg, Clinical psychotherapist, Germany</p> |
| <p>Title: Neuroprotection, photoperiod and sleep Luz Navarro, National Autonomous University of Mexico, Mexico</p> |
| <p>Title: The Real Object Approach of Language (ROAL-Hypothesis) and the schematic component of consciousness for individual Noury Bakrim, University of the People, USA</p> |
| <p>Title: Cerebrovascular disease in COVID-19: Is there a higher risk of stroke? Marcos Altable, Virgen de Africa Clinic, Spain</p> |

“The Bignetti Model” is a cognitive model that paves the way from brain to mind



Enrico Bignetti

Parma University, Italy

ABSTRACT

When stimuli perturb the natural equilibrium between the individual and the surroundings, our mind reacts to restore a new equilibrium; for example, “thirst” induces us to drink so the osmotic composition in specific sensory areas of our brain is restored. Actually, the final behaviour might not be so easily predictable, since action processing might be furtherly complicated by preferences, like a beer instead of water, etc.

Anyhow, these reactions can be perceived as “voluntary” by the agent’s 1st-order perspective (1PP), i.e. by an emotional, subject that believes in the existence of a Free-Will-possessing Self. Conversely, by means of the objective, scientific, 3rd-order perspective (3PP), a detached observer would consider these so-called “voluntary” actions mostly probable and coherent with experience and computational ability of the agent’s mind (in case of no experience (Tabula-Rasa), probability would reduce to a trial-and-error processing). Strikingly, both 1PP and 3PP may coexist in our mind, although delayed one from the other. In any case, a probabilistic-deterministic computational process objectively seems to cope the action-decision making, without the need of a Soul-inhabited Self; so, the analogy of this psychic process with many natural systems when stressed by energy fields (e.g. LeChatelier’s law regulating physical-chemical equilibria) is appealing.

Now, we should pose these questions: 1) Why does 1PP believe in Free-Will, albeit the scientific 3PP considers it as an illusion? 2) Does the probabilistic-deterministic mechanism of our mind reflect an analogous underlying mechanism in brain or is mind-brain duality insurmountable? As a matter of fact, “The Bignetti Model” (TBM) is the cognitive model that reconciles both 1PP and 3PP and gives an explanation about the mechanism of cognition in a bottom-up track, from a molecular to psychological level, without the need of a Soul-inhabited self.

SPEAKER PROFILE:

Enrico Bignetti (1949) born in Brescia, Italy. (1974) graduated Doctor in Veterinary Medicine at the University of Parma, Italy. (1977) Professor of Physiology at the University of Parma. (1985) Professor of Clinical Biochemistry and Molecular Biology at the University of Parma. (1987-1998) Director of Veterinary Biochemistry Institute. (2017) retired. Main research topics: 1) vision, olfaction and taste (Guanosine-triphosphate is directly involved in light-excitation of photoreceptors; bell-pepper Odorant-binding protein from nasal mucosa was purified and characterized; the psycho-active effect of Glutamate (Umami taste) was investigated); 2) biosensor productions and the study of the psycho-active effects of food; 3) Cognition (a new human cognitive model “The Bignetti Model”, based on the role of free-will illusion in cognition was proposed). Work done abroad: Polytechnic of Zurich. University of Oregon, Yale University, Florida State University. Speaker at intl. congresses: Palermo, Italy; Jerusalem, Israel; Agra, India. (Rome, Italy, and New York, USA, will be postponed for Covid19). The last Publication: Bignetti E. (2021) The Limits of Mind and “The Bignetti Model”. *New Horizons in Education and Social Studies*. Chapter 8, Vol. 9, DOI: 10.9734/bpi/nhess/v9/7239D). Extra-academic activity: Conceptual Artist, Hatha Yoga Teacher and expert of oriental philosophies.

Physiological and cellular targets of neurotrophic anxiolytic phytochemicals in food and dietary supplements



Benjamin S Weeks

Adelphi University, USA

ABSTRACT

Nutrition effects anxiety through two main pathways. First anxiety can be caused by nutritional deficiencies in antioxidants, vitamins, amino acids, metallic cations, anabolic building blocks and even water. Second, anxiety can be modulated and measurably reduced by anxiolytic food phytochemicals that modulate or bind to molecular targets of the amygdala and the hypothalamus-pituitary-adrenal axis (HPA-axis) and other brain centers. Anxiety is a feeling of worry or fear that results from perceived threats and heightens the awareness and preparedness in response to threats and stressors. Excessive anxiety, however, is a disorder resulting in exaggerated and unhealthy responses to threats and stressors. The nucleus in the brain responsible for assigning the appropriate value to a threat or stressors is known as the amygdala. In order to support an appropriate body-wide system response to threats and stressors, the amygdala will trigger the HPA-axis and brain stem to elevate heart rate, breathing and other stress preparedness responses. In addition, the amygdala also communicates with the neuroplastic learning and memory centers of the hippocampus. Communication between the amygdala and the hippocampus serves to fix a learned value to the perceived threat and to inform memories of the value of that given stressor. Interestingly, a small set of anxiolytic nutraceuticals have been shown to also have neuroplastic properties such that while reducing anxiety, they also are able to alter the neurocircuitry associated with anxiety disorders. Here we review the anxiolytic nutraceuticals that are also neurotrophic and coin the term, “anxiolytic neurotrophoid” to refer to this set of anxiolytic food molecules that also behave like neurotrophins. The endogenous neurotrophins known to support neuroplasticity in the brain include nerve growth factor (NGF), brain derived neurotrophic factor (BDNF) and neurotrophin-3 (NT3). These neurotrophins promote neuroplasticity binding to the cell surface tyrosine receptor kinase (TRK) family of receptors known as TRKA, TRKB and TRKC. Binding to the TRK neurotrophin receptors activates the cytoplasmic ERK1/2 signal transduction pathway associated with neurite outgrowth and neuroplasticity. With regard to anxiolytic neurotrophoids, Rhodiola Rosea derived salidroside increases stem cell NT3 receptor (TRKC) expression, BDNF secretion, ERK1/2 activation and neurite formation in these stem cells, but it is not clear if the salidroside binds to the NT3 receptor or simply increases BDNF production. Further, prenylflavonoids from Hops are known to activate signaling through TRKA (the NGF receptor) and stimulate neurite formation in cultures of PC12 cells and dorsal root ganglion, but it is not clear if the prenylflavonoids directly bind to TRKA. Interestingly, cannabidiol (CBD) directly binds to the TRKA NGF receptor, activates cytoplasmic ERK1/2 and promotes neuronal survival and neurite outgrowth in cultures of PC12 neurons. Here we show the ability of various CBD preparations to activate signals through the TRKA-ERK1/2 pathway and promote survival and neurite outgrowth in PC12 cells. Further, when combined with vitamin C, CBD-lipid metabolite emulsion showed enhanced PC12 cell survival and neurite formation. We also show that Valerian root extract potentiates NGF-stimulated neurite outgrowth. Valerian root contains the anxiolytic sesquiterpene, valerenic acid. Unlike the whole valerian root extract, valerenic acid did not potentiate NGF-mediated neurite outgrowth. Taken together, the data and information from the literature presented here strongly suggest that neuroplastic anxiolytic phytochemicals, may be particularly useful when in the treatment of anxiety because the anxiolytic effects are also coupled with the neuroplasticity associated with learning and perceived threat levels.

SPEAKER PROFILE:

Benjamin S Weeks is a professor in the department of biology and the environmental science program at Adelphi University in Garden City, New York. He earned his Ph.D. in molecular cell biology from the University of Connecticut in 1988 where he identified domains on the laminin molecule associated with xenobiotic-induced autoimmunity and reproductive failure. At the National Institutes of health, he continued to identify active laminin domains, receptors, signal transduction pathways and gene expression for neuronal cells and cells of the immune system. Recently he have authored books on both HIV and AIDS and microbiology and his research focuses on xenobiotic neuro- and immuno-toxicity and nutritional approaches to mitigate these toxicities.

International Conference on

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Day 1 **Oral Presentations**



Circuit formation and synaptic plasticity in the mouse olfactory system

Hitoshi Sakano

University of Fukui, Japan

ABSTRACT

In mice, early exposure to environmental odors affects social behaviors later in life. A signaling molecule, Semaphorin 7A (Sema7A), is induced in the odor-responding olfactory sensory neurons in an activity-dependent manner. Plexin C1, a receptor for Sema7A, is expressed in second-order neurons, whose dendrite-localization is restricted to the first week after birth (1). Sema7A signaling promotes post-synaptic events and dendrite selection, resulting in glomerular enlargement that causes an increase in sensitivity to the experienced odor. Neonatal odor experience also induces positive responses to the imprinted odor, even when the odor quality is innately aversive. Knockout and rescue experiments indicate that oxytocin in neonates is responsible for imposing positive quality on imprinted memory (2). If the oxytocin or Sema7A signaling is blocked in neonates, social interactions are impaired as adults. These results give new insights into our understanding of olfactory imprinting during the neonatal critical period and will shed light on the neurodevelopmental disorders, such as autism and attachment disorders (3).

1. Inoue N, Nishizumi H, Naritsuka H, Kiyonari H, and Sakano H. Sema7A/PlxnC1 signaling triggers activity-dependent olfactory synapse formation. *Nat. Commun.* 9, 1842 (2018).

2. Inoue N, Nishizumi H, Ooyama R, Mogi K, Nishimori K, Kikusui T, and Sakano H, The olfactory critical period is determined by activity-dependent Sema7A/PlxnC1 signaling within glomeruli. *eLife* 10, e65078 (2021).

3. Mori K and Sakano H, Olfactory circuitry and behavioral decisions. *Annu. Rev. Physiol.* 83, 24.1-24.26 (2021).

This research was supported by JSPS grants (KAKENHI #24000014 and 17H06160).

SPEAKER PROFILE:

Hitoshi Sakano, who had been long engaged in research and education at the former department of biophysics and biochemistry, School of Science, and retired from The University of Tokyo in March 2012, won the medal with Purple Ribbon for spring 2014. He was honored for his neuroscience study to elucidate mammalian olfactory systems, which was initiated in 1994 when he transferred to the department. To clarify how mammals detect and recognize countless smells in nature, he first elucidated a mechanism in which each olfactory cell expresses only one olfactory receptor, and then a mechanism in which nerve fibers of the olfactory cells that express each olfactory receptor create accurate odor maps in a proper region of the brain. Different mechanisms are used for respective two-dimensional axes (the dorsal-ventral axis and the anterior-posterior axis), and the projection locations are determined by the combination of the mechanisms. He also clarified that a strong fear response due to the odor of natural enemies is regulated by a certain region of the brain. These findings were published in prestigious journals, including *Science*, *Cell*, and *Nature*. In 2013, after retiring from The University of Tokyo, he published his culmination of a series of research achievements in cell, in which he resolved all questions, i.e., that each olfactory receptor has an individual basal activity in an odorless state, which regulates how olfactory sensory neurons determine the projection locations on a two-dimensional map on the brain. His excellent results were achieved by his strenuous efforts and his constant persistence. We also extend our sincere congratulations to his laboratory members who lived up to the rigorous expectations to build groundwork for the award.

A case control study of cognitive distortions and quality of sleep in COVID-19 in-patients who are admitted in a tertiary care hospital

Siva Anoop Yella

Aster Prime Hospital, India

ABSTRACT

Cognition is a very important aspect in our daily life which moulds or modifies our behavior, emotions and social relationships. It helps in performing our daily activities which needs application of attention, concentration, memory etc. Cognitive distortions are biased perspectives that we take on ourselves and the world around us.

They are nothing but irrational thoughts and beliefs that we reinforce over time unknowingly. COVID -19 pandemic has caused many changes in one's thought process especially in those who are infected with it. These patterns and systems of thought are often difficult to recognize when they are a regular feature of your daily thoughts.

Hence they can be so damaging since it's hard to change what you don't recognize as something that is needed to change and can cause alteration in sleep. Cognitive distortions can be causative factors for many mental illnesses and can lead to Depression, OCD, Anxiety disorders, Insomnia, Personality disorders etc. It is important to find out the type of Cognitive distortion one is facing so that Cognitive behavioral therapy can be done to correct the automatic thoughts and alter the core beliefs of the person. COVID-19 has been one such pandemic where even normal people started developing different cognitive distortions thereby causing various mental illnesses.

Hence this study is done to find out how COVID-19 has caused the cognitive distortions and sleep disturbances in those patients. There haven't been any study attempted as such where cognitive distortions have been studied in COVID-19 patients, hence this study helps us find out how cognitive distortions are affecting the daily thought process in COVID patients and also how quality of sleep is altered.

SPEAKER PROFILE:

Siva Anoop Yella has completed his MD in Psychiatry from Institute of Mental health, Hyderabad, India. He always had special interest in psychiatry, very much inclined towards addiction psychiatry, sleep medicine, psychosexual medicine and also consultation liaison psychiatry. He did research papers on sleep with regards to mental illnesses, presented many papers and posters at various state and national conferences, and received awards for the same. Well trained in delivering treatment and counselling services with different forms of therapies in addiction disorders and mental illnesses. Worked with the multi-disciplinary team to provide medication assisted treatment and counseling support to residential care patients with problems largely related to mental illnesses and SUDs. Handled clients at the out-patient clinic to assess, treat and provide continuing care services for clients with SUD and other mental disorders. Managed clients with COVID at the mental health setting and general medicine wards and Intensive care units in a COVID specialty unit during the pandemic. Provided in-patient and out-patient treatment services to clients with SUD and mental disorders. Worked with out-reach units to provide mental health and SUD related services to rural populations as part of the District Mental health Program undertaken by the Govt. of India.

Neuropathology in the visual analyzer in hypertensive glaucoma: Review

*Hana Chylova**, Jan Lestak, Martin Fus

Czech Technical University, Czech Republic

ABSTRACT

The study provides an overview of the physiology and pathology of neurotransmission in the visual pathway with a focus on glaucoma. The results of positron emission tomography, functional magnetic resonance imaging, electrophysiological and functional methods demonstrate the pathogenesis of damage at the level of the retina as well as the visual cortex. Based on these conclusions, the authors also propose antiglaucoma treatment. It consists of decrease of the intraocular pressure followed by decrease of glutamate in the synaptic cleft and blockage of its binding to the NMDA receptors. Because the entire visual tract is damaged, this treatment should be systemic.

SPEAKER PROFILE:

Hana Chylova is an associate professor at the department of psychology, faculty of economics and management, Czech University of Life sciences in Prague, Czech Republic. Her research interest focuses on Psychological Assessment and Counseling.

Endoscopic excision of parenchymal brain tumour – The future option

Ashis Pathak

Fortis Hospital, India

ABSTRACT

Introduction: Neuroendoscopy is a promising and upcoming arena in minimally invasive techniques which is fast replacing open/microscopic procedures for different neurosurgical procedures. Endonasal approach to skull base lesions is now being routinely practiced for more than two decades. However the role of neuroendoscopy in excision of intraparenchymal brain lesions is a newer concept which has definite advantages over open methods.

Objective: The presentation highlights the experience of surgical excision of parenchymal brain tumours, in selected cases, using pure endoscopic approach and discusses its feasibility, technical benefits, risks and comparison with conventional microscopic excision

Method: Twenty two patients of variable age group with parenchymal brain tumours were operated upon by a single surgeon and followed up for a period varying from 6 months to 3 years. All of the tumours were resected using rigid high definition zero and 30° endoscope. Data was evaluated regarding illumination, clarity of the field, size of craniotomy, operating time, blood loss and course of recovery.

Results: Out of 22 cases, eighteen had lesions in the supratentorial and four in the infratentorial location. Near to gross total resection was achieved in all except three cases. All of the patients recovered well without any significant morbidity or mortality. Hospital stay was reduced by an average of 1.5 days.

Conclusion: Parenchymal brain tumours through pure endoscopic method is a safe and efficient procedure. Although there is an initial period of learning curve, it is not steep for those already practicing neuroendoscopy. The technique has its advantages and holds a distinct promise as a mainstay procedure for future.

SPEAKER PROFILE:

Ashis Pathak, director of neurosurgery at Fortis Hospital, Mohali, Punjab, India is one of the leading neurosurgeon in the India with 38 years of expertise in brain and spine surgery, using latest technology and minimally invasive techniques. He was former professor of neurosurgery at the prestigious Postgraduate Institute of Medical Education & Research, Chandigarh, India. Pathak rendered his expert services as a senior consultant neurosurgeon at Hull Royal Infirmary, NHS, UK for 4 years in the role of lead consultant vascular neurosurgeon and lead pituitary surgeon and was also regularly performing complex skull base surgery procedures apart from routine neurotrauma and spine surgery. Pathak was also a consultant paediatric neurosurgeon at Sheffield University Hospital, NHS Trust, UK where he was involved in managing complex paediatric neurosurgical cases including complex tumours in children. Presently he is focussed on minimally invasive neurosurgery specially neuroendoscopy. He has more than 150 publications in indexed journals and chapters in books. He has delivered in more than 250 lectures / orations / CMEs at national and international levels and has conducted several workshops.

Determination of the intramuscular motor endpoints for effective administration of botulinum toxin in the treatment of spasticity

Alexander Kovalenko

Military Medical Academy, Russian Federation

ABSTRACT

Introduction: Neuromuscular transmission occurs between the axon terminals and Intramuscular Motor Endpoints (IMEs). Accurate targeting of IMEs can improve the effectiveness of botulinum neurotoxin (BoNT) injections.

Methods: Fifty-nine healthy people were examined. Twenty-five muscles of the shoulder girdle, and the upper and low limbs were examined in full using Electromyography (EMG) and Ultrasound Scanning(US). Forty-two IMEs were identified and localized using EMG. Then patients with post-stroke spasticity (n=32) were randomized into two groups (16 people each), and they were injected with 1500 U abobotulinumtoxinA. In group 1, injection of IMEs was performed using US guidance, and in group 2, using both US and EMG guidance. Spasticity was evaluated using the Tardieu Scale (TS). Assessments were performed at baseline (Day 1), and 12, 16, 21, and 28 days post-injection.

Results: IMEs were localized on the surface of the body. The location of the IME is identical and not dependent on the gender, age, or dominant limb of the subject. Results were confirmed in all 59 patients and IME locations were mapped (**Figure**). Group 2 showed better results on the TS ($P<0.05$) 16 days after BoNT injection. At 28 days post-injection, the difference between the groups on the TS decreases ($P=0.1$).

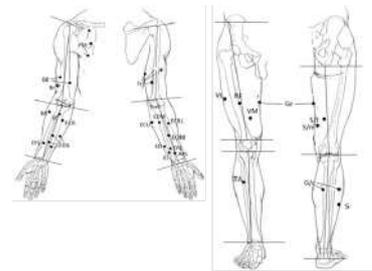


Figure: Map of the IME muscle locations for BoNT injections.

Conclusions: This study showed an approach to determination of the IME locations of the upper and low limb and shoulder girdle muscles and allowed us to create a surface map of these locations. With IME injection of BoNT, the effect develops faster than with the usual method, but was equated to Day 28 post-injection. This data might improve the clinical efficacy and the feasibility of IME targeting, when injecting BoNT in treating spasticity. Further research is required.

SPEAKER PROFILE:

Alexander Kovalenko, PhD is an associate professor in department and clinic of neurological diseases, chief neurorehabilitologist of the Medical Military Academy (MMA), head of the Center for Clinical Botulinum Therapy of the MMA. He is a member of the interregional public organization of specialists in Botulinum therapy. He is also a member of the Russian-British partnership in the field of neurorehabilitation. Member of the following societies: Russian association of neurologists, the union of rehabilitation specialists of Russia, neuromuscular diseases, international neurotoxin association.

Intracranial pressure waveform: History, fundamentals and applications in brain injuries

Gustavo Frigieri

Brain4care, Brazil

ABSTRACT

Intracranial pressure (ICP) can be analyzed for its absolute value, usually in mmHg or cmH₂O, its tendency over time and the waveform of its pulse. This presentation will focus on the waveform of the ICP pulse (ICPwf), already observed since 1881, and for a long time not understood. Studies conducted in recent decades show the correlation between the ICPwf and intracranial compliance (ICC), an important clinical parameter added to the practice in the second half of the last century. ICC allows physicians early analyzing patients' neurological conditions related to disorders resulting from variations in cerebrospinal fluid (CSF), blood and intracranial tissue volumes. We will make an invitation to dive into the history and development of ICPwf analysis, clinical uses already adopted and others still under study not completely understood.

SPEAKER PROFILE:

Gustavo Frigieri completed his undergraduate degree in pharmaceutical sciences and biochemistry in 2003, worked as a biochemist and pharmacist for 4 years, returning to the academic world in 2007. Frigieri presented his doctoral thesis in sciences at the University of São Paulo in 2010 and post-doctorate in the department of computational physics in 2012 and was elected as a young member at the Brazilian Academy of Sciences in 2014. The brain4care sensor was the result of advances in the instrument developed in his studies, in 2014 the company Braincare was founded, later renamed Brain4care, holder of the rights of the sensor and strongly supported by scientific and technological innovation.

Perceived changes of specific attitudes, perceptions and behaviors during the Corona pandemic in Germany

Ruth Helena Lueg

Clinical Psychotherapist, Germany

ABSTRACT

The German language has only one word for both “safety” and “security”. It is called “Sicherheit” and can be used either way. Germans need lots of “Sicherheit”. For that we are well known, for our perfectionism and efficiency. But, what happened when Covid-19 arrived and we lost control and nothing really helped to stop the virus? As in almost every country in the world, the severity of the COVID-19 pandemic brought Germany a complete social and economic lockdown, leading to fears, insecurity and isolation.

Stay at Home Orders, unemployment, loneliness, economic shutdown, climbing death rates, masks and social distancing were the all-day news. Did bereavement, isolation, loss of income and fear trigger mental health conditions or exacerbate existing ones? The daily structure changed dramatically, but also the mentality and our concept of the meaning of life. Resilience was a must for survival. Research shows why many emerged from this stressful experience even stronger than before.

The Corona pandemic and related social and individual restrictions may have changed our priorities. The pandemic forced a rethink; let's talk about the changes of specific attitudes, perceptions and behaviors during the Corona pandemic and their relation to wellbeing. The Covid-19 pandemic is one of the greatest challenges in the history of the Federal Republic of Germany – primarily as a health issue, but also as an economic challenge, this virus is also a great stimulus package for the future.

SPEAKER PROFILE:

Ruth Helena Lueg was graduated as a medical doctor from University of Santiago, Chile. The doctoral thesis in the field of adolescent mood disorder. From 1970-1980 specialization in internal medicine in Roy H. Glover Hospital, American Hospital from Anaconda Mines in Chuquicamata, Chile, also there worked in the desert of Atacama as scientific researcher in the WHO research for high-altitude-related illnesses (Profesor Santolaya). From 1980-1993 Specialization in Psychiatry and Psychotherapy in the “Landes Klinik Bedburg-Hau”, NRW, Germany. This was the largest psychiatric hospital and health mental center in Europe with 3,500 patients.

Neuroprotection, photoperiod and sleep

Luz Navarro

National Autonomous University of Mexico, Mexico

ABSTRACT

Research carried out in recent years on the pathological mechanisms generated by aggressive situations for the integrity of the Central Nervous System (CNS) and the possibility of a morphological and functional recovery has given rise to the concept of neuroprotection. This term refers to the use of any therapeutic modality that prevents or retards or cell death resulting from the neuronal injury. The term neuroprotection has also been used to refer to the self-protective responses that the body starts when it suffers a traumatic event and maintain the integrity and functionality of the brain. This meaning is more recent and emphasizes the balance of the body's responses to acquired brain damage such as a cerebrovascular event or a head injury (TBI).

After an acquired brain injury, responses that induce cell death are activated; however, neuroprotective mechanisms are also activated. The relation between these responses determines the destination of the damaged tissue. This relation presents variations throughout the day. For example, numerous studies have shown that the onset of a stroke occurs preferably in the morning. In the rat, ischemia causes more damage when it is induced during the night. The damage caused by a TBI in the rat varies depending on the phase of photoperiod it is induced. We have reported lesser behavioral and histological damage when the TBI occurs during the dark phase, which coincides with the rat's wakefulness. We also have been observed that sleep deprivation accelerates recovery. Our group has documented that this is due, in part, to a difference in the degree of activation of cannabinergic and glutamatergic systems and diurnal differences in the immune response.

Partially supported by PAPIIT IN228320.

SPEAKER PROFILE:

Luz Navarro has a Ph.D. in physiological sciences. She is a professor of the department of physiology of the faculty of medicine at the National Autonomous University of Mexico (UNAM) since 1997. Currently, she is responsible for the neuroendocrinology laboratory, and her line of research is about diurnal variations in neuroprotection. She has taught courses at the bachelor's, specialist, master's, and doctoral levels and has trained undergraduate, master's, and doctoral students. She has over 60 publications that have been cited over 1122 times, and her publication h-index is 25.

The Real Object Approach of Language (ROAL-Hypothesis) and the schematic component of consciousness for individual

Noury Bakrim

University of the People, USA

ABSTRACT

The ROAL-Model of language (Bakrim, 2020, 2021 a, b, c, d) hypothesizes a double propositional principle between genome and cognome information-propositional levels within event hyperbolicity and neural mapping. The second graph principle (cognome) implies memory decomposition and modularization of "Universal Grammar" including mathematical categorical diagrams of derivational, recursive and self-referring graphs (rhythmic-metric, descriptive-argumental and syntactic) along with cognitive learning-copying and deixis-intentionality/properties. Furthermore, the cognome is the site of the relation between the structure and the double articulated, cognitive types within the schematic representation of morphological patterns in which lexicon is one of the representational systems of context-based and metric segments. Therefore, the hypothesized pre-lexical level varies from biolinguistic minimalism. It is defined within biomathematical symbolic dynamics (Gromov, 2016) being a curvature-based model of language-matter and the topological relation between argument-memory and quantum valence, implies neuro-cognitive cyclic graphs with contracted/expanded negative/positive functions of inhibition/firing whose representational decomposition relies on their space-time figures for double articulation and event. Our purpose herein is to present a sequencing decomposition based on graph heredity and additivity from the rhythmic-metric universal graph (brain rhythmic dynome) and the lexical phono-morphological representation of complexity in its resolution of morphological heterogeneity (concatenation-template) within Berber in reduplicated sequences (verb-noun). Specific attention will be given to the tension with the copying mirror neurons for form-meaning symmetries (or iconicity) within the frame of our arbitrarization postulates of consciousness and the relation to Universal Grammar non-assembled graphs.

SPEAKER PROFILE:

Noury Bakrim, PhD in Language Sciences in 2006, is a professor at the University of People (USA-Pasadena). He has lectured at Colleges/Institutes, worked at research centers in France (CNRS), Morocco and Holland. Among his publications, we can mention four theoretical books and various articles on semiotics and linguistics. The actual focus of his work is the bio-linguistic empirical and experimental verifiability of the Real Object Approach Language (ROAL).

Cerebrovascular disease in COVID-19: Is there a higher risk of stroke?

Marcos Altable

Virgen de Africa Clinic, Spain

ABSTRACT

The presence of stroke has been observed in young adults (under fifty years of age) without cardiovascular risk factors who are suffering from COVID-19. It is speculated that there is really a significant increase, as a few cases have yet to be described, or that the infection favors his development. Cerebrovascular events are more common in older patients with stroke risk factors, such as hypertension and diabetes mellitus, and those who have elevated fibrin D-dimers. Multiple case reports and series about cerebrovascular disease (CVD) in COVID-19 has been informed. The mechanism that causes cerebral ischemia in COVID-19 remains undiscovered. However, progressively there is increasing evidence of hypercoagulability that can be or contribute to the cause. We review the current literature about CVD both epidemiology and etiology. More studies are needed to understand.

SPEAKER PROFILE:

M.D. Bachelor's degree in Medicine with honors (2000). Msc Pediatric Neurology and Neurodevelopment Disorders. Marcos Altable has dedicated my time to the practice of clinical neurology, to publishing in various spaces (scientific journals and congresses, newspapers, books, web pages...) and the continuous study and updating in Neurology and neurosciences. He currently resides in Ceuta (Spain) where he funded and head Neuroceuta, a project specialized in the care, diagnosis and treatment of neurological diseases in an interdisciplinary way. Immersed in various studies on ADHD, dysphasias, Parkinson, Alzheimer's disease and COVID-19. In the last year, author of 16 published scientific articles and two books about Neurology and COVID-19. Editor and reviewer of multiple international scientific journals (Nature editorial among others). Selected in World Health Organization (WHO) COVID-19 collection, research projects at World of Pandemic Research Network (WPRN), publication in Centers for Disease Control and Prevention (CDC) of USA and Europe.



International Conference on

NEUROSCIENCE AND PSYCHIATRY

Nov 08-09, 2021 | Vienna, Austria

Day 1

Workshop



WORKSHOP

Title: Neuroplasticity and its application to evidence based practices in treating patients with aphasia secondary to CVA

Julianne Freiwald Gaule, Vero Beach Reading and Speech-Language Pathology, USA

VIDEO PRESENTATION

Title: Communication of persons with cerebral palsy, hearing impairment and other associated difficulties

Ana Pavlović, University of Sarajevo, Bosnia and Herzegovina

Title: Pilot test for the relationship between drivers' hazard perception ability and cognitive traits of empathizing-systemizing

Mikio Danno, Oriental Consultants Global Co., Ltd, Japan

Title: "Dialogue" between the human microbiome and the brain

Natalia Beloborodova, Andrey Grechko, Federal Research and Clinical Center of Intensive Care Medicine and Rehabilitology, Russian Federation

Title: NO, CO and H2S in the modulation of AVP, OT and ANP release

Ricardo Coletti, University of Ribeirão Preto, Brazil

Neuroplasticity and its application to evidence based practices in treating patients with aphasia secondary to CVA

Julianne Freiwald Gaule

Vero Beach Reading and Speech-Language Pathology, USA

ABSTRACT

Statement of the problem: Are speech language pathologists using the most recent evidence based practice in the diagnosis and treatment of aphasia? What are current evidence based treatments in the field of Speech-Language Pathologist (SLP) to facilitate neuroplasticity in patients with aphasia? It is critical that SLP's stay current regarding the newest research obtained from the fields of neurology, neuroscience, aphasiology and evidence based treatment strategies for treating the loss of language (aphasia) at the cortical level due to CVA (stroke). The evaluation process at the acute stage may change overtime secondary to spontaneous recovery within the first 30 to 90 days. A problem based approach to intervention is the most recent methodology used to help determine classification of aphasia subtypes and its translation into functional measured outcomes. This particular lecture will narrow the subject by addressing neuroplasticity following treatment for aphasia without including preexisting or premorbid disorders. This topic will not specifically address dysarthria or apraxia as these can co-occur with aphasia. It is vital that SLP's do not solely rely on standardized testing as the only determination of eligibility, treatment type and duration, and/or discharge. Functional outcomes need to be addressed by direct restoration as well as the need for compensatory strategies to address activities of daily group participation is encouraged as the classification of subtypes will be easily followed using a diagram in this presentation.

SPEAKER PROFILE:

Julianne Freiwald Gaule has been practicing in the field of speech-language pathology for close to 40 years. She received her undergraduate degree in speech and hearing sciences from the University of Miami, Cum Laude in 1980. She received her masters and doctoral degrees from Nova Southeastern University in speech-language pathology. Her interest in neuroscience peaked when she completed the course, "The Neurology of Behavior" at Harvard Medical. She is certified in Neurodevelopmental Treatment (NDTA) which has its foundation from the early works of Dr Bobath. Recent awards and presentations include the following: outstanding award for speech-language pathologist in Miami FL for 2018 and The Hall of Fame Award for 2019 in Miami Florida. She has lectured for advance magazine (marion publications) for three consecutive years throughout Florida on various topics inclusive of "Chronic Neurologic Impairment".



International Conference on

NEUROSCIENCE AND PSYCHIATRY

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Day 1 Video Presentations



Communication of persons with cerebral palsy, hearing impairment and other associated difficulties

Ana Pavlović

University of Sarajevo, Bosnia and Herzegovina

ABSTRACT

Objective: The study aimed to examine the prevalence of hearing impairment and other associated difficulties and forms of communication in persons with cerebral palsy.

Method: The research was conducted on a sample of 120 respondents, persons with cerebral palsy from four cantons of FBiH, within the project of the Association of Persons with Cerebral Palsy FBiH.

The total sample of respondents (N = 120) was divided into 4 subsamples of respondents:

- The first subsample of respondents (N = 40) consists of persons with cerebral palsy, members of the association of citizens suffering from cerebral palsy in Sarajevo Canton (Sarajevo Canton).
- The second subsample of respondents (N = 41) consists of persons with cerebral palsy, members of the association of parents of children with cerebral palsy, microcephaly and hydrocephalus "Dlan" Zenica (Zenica-Doboj Canton).
- The third subsample of respondents (N = 20) consists of persons with cerebral palsy, members of the association of citizens suffering from cerebral palsy and dystrophy of Goražde (Bosnian-Podrinje Canton).
- The fourth subsample of respondents (N = 19) consists of persons with cerebral palsy, members of the association of persons with cerebral palsy Sapna (Tuzla Canton).

The research is retrospective and analytical-descriptive. Data were collected using the newly constructed defectology "questionnaire for examining the social inclusion of persons with cerebral palsy, hearing impairment and other associated difficulties." The research was conducted in the period from November 1, 2017 to February 1, 2018.

Results: Out of the total number of respondents included in this research, 64 respondents (53.3%) are male and 56 respondents (46.7%) are female.

The youngest respondent was 21 months old, and the oldest was 67 years old. Out of the all associated difficulties in persons with cerebral palsy, the most common are speech difficulties (56.60%), intellectual disabilities (34.90%), visual impairment (32.50%), epilepsy, 20.90%), hearing impairment (10.90%), behavioral disorder (7.60%), autism (2.40%), no associated difficulties (16.20%).

In persons with cerebral palsy, hearing impairment and other associated difficulties, the most common is the verbal form of communication (74.10%), the non-verbal form (18.40%), and the bilingual mode of communication (3.30%).

Conclusion: We can conclude that persons with cerebral palsy often have other associated difficulties, the most common of which are speech, hearing, vision, epilepsy, etc.

It is very important to provide a quality lifestyle to these persons and make them able to do daily activities.

SPEAKER PROFILE:

Ana Pavlović was born on February 27, 1995. She completed her master's degree in physiotherapy in 2019 at the faculty of health studies, University of Sarajevo, BiH. In 2018, she became a bachelor of physical therapy at the faculty of health studies, University of Sarajevo BiH. She has attended numerous seminars and training, such as reflexology, aromatherapy, Kinesio tape, etc.

Pilot test for the relationship between drivers' hazard perception ability and cognitive traits of empathizing-systemizing

Mikio Danno

Oriental Consultants Global Co., Ltd., Japan

ABSTRACT

The previous research [1] showed that near-miss incident experience was basically reduced by the Empathy Quotient (EQ) and was disturbed by the Systemizing Quotient (SQ) when the empathy quotient was low, based on the Empathizing and Systemizing (E-S) model using a web survey [1]. It means that drivers whose EQ was low and SQ was high had more near-miss incident experience. It suggested that drivers who have a stronger empathizing function may have stronger hazard perception ability although the systemizing function may weaken hazard perception ability when empathizing is weak. And, then, it was revealed that the D score (standard SQ (T) score minus standard EQ (T) score) had a significant effect on the near-miss incident experience. Those results implied that a D score, which is used to classify "E-S types", should have a relationship with near-miss incident experience, i.e., hazard perception ability. The EQ and SQ scores were supposed to relate to the cognitive ability to estimate other road users' mental situations and predict their behavior or to recognize stable laws in traffic situations.

The aim of this research was to investigate the relationship between a driver's visual attention ability (gaze movement) and hazard (near-miss incident) perception ability of different EQ and SQ scores. Drivers' Real-time Useful Field of View (rUFOV) [2] was measured under normal and hasty driving conditions in a driving simulator which had six scenarios of traffic situation.

The result from seven participants who had different EQ and SQ scores showed that a driver's visual attention ability (gaze movement) corresponds to their scores. This pilot test research revealed a possibility that the individual difference in cognitive trait with E-S model could be a promising tool to understand the mechanism of hazard perception since a D score is used to classify "E-S types".

[1] Danno, M. and Taniguchi, S. (2015) The Analysis of Drivers' Hazard Detecting Ability Using Empathizing-Systemizing Model. *Transportation Research Part F*, 33, 106-116. <https://doi.org/10.1016/j.trf.2015.07.003>

[2] Danno, M., Kuttila, M. and Kortelainen, J. (2011) Measurement of Driver's Visual Attention Abilities Using Real-Time UFOV Method. *International Journal of Intelligent Transportation Systems Research*, 9, 115-127.

<https://doi.org/10.1007/s13177-011-0033-1>

SPEAKER PROFILE:

Mikio Danno has graduated from doctor's course of human information science of Chiba University (Chiba, Japan), 2011. He was senior partner of social system research department of Toyota InfoTechnology Center (Japan) until 2018 (currently, merged into Toyota Motor Corp.).

“Dialogue” between the human microbiome and the brain

Natalia Beloborodova, Andrey Grechko

Federal Research and Clinical Center of Intensive Care Medicine and Rehabilitology,
Russian Federation

ABSTRACT

The human gut microbiome is a community of trillions of microorganisms which produce and use a large number of molecules of the microbial origin. Normally, the epithelial-immune-gut barrier supports homeostasis in the host body. The importance of the function of the gut microbiota for the host organism allows us to consider of it as a huge, but “invisible organ”. The results of numerous studies have been summarized in reviews and show that the gut microbiota affects the development of diseases of the central nervous system, including motor and behavioral disorders, neurodegenerative diseases, cardiovascular and neuroimmune-mediated disorders. Our study focuses on several groups of low-molecular-weight compounds that originate primarily from the gut microbiota; their involvement in the interaction of the microbiota and the brain.

SPEAKER PROFILE:

Natalia V Beloborodova was educated at the Pirogov Russian National Research Medical University, and a specialization in clinical microbiology. She has been a professor since 1996. Recently she is the head of the laboratory of metabolism in critical state in federal scientific and clinical center for intensive care and rehabilitology, Moscow, Russian Federation.

NO, CO and H₂S in the modulation of AVP, OT and ANP release

Ricardo Coletti

University of Ribeirão Preto, Brazil

ABSTRACT

Nitric oxide (NO) inhibits vasopressin (AVP), oxytocin (OT) and atrial natriuretic peptide (ANP) secretion. It is also known that carbon monoxide (CO) and hydrogen sulfide (H₂S) might act enhancing the secretion of the same hormones. In vitro interactions among NO synthase (NOS), heme oxygenase-1 (HO-1), cystathionine beta-synthase (CBS) and their gaseous products have already been described in the literature.

However, the physiological interaction of those three systems in the modulation of hypothalamic hormone release remains not much clear. Thus, through an ex vivo modeling, in which hypothalamic and neurohypophyseal explants were incubated under iso- or hyperosmolality, we evaluated how enzymatic activities (NOS, HO-1 and CBS), hormone release (AVP, OT and ANP) and transcripts expression (Nos1, Hmox1, Cbs and Mpst) acted together. We found, under hyperosmolality, an increase in hormone release, larger hypothalamic NOS, CBS and HO activities, yet no increase in transcripts relative amount.

Through LNMMA (NOS inhibitor) incubation, we also observed a modulatory effect of endogenous NO on hypothalamic CBS and HO activities; but, on the other hand, endogenous CO and H₂S modulation on NOS activity was not evidenced. The data show that, although hypothalamic AVP, OT and ANP release is increased by CO and H₂S, only NO inhibits explant hormone release and modulates directly the catalytic activity of the other two systems, acting in order to control the amount of released hormones in response to hyperosmolality.

SPEAKER PROFILE:

Ricardo Coletti has completed his Ph.D. (in Physiology) at the age of 29 years from Ribeirão Preto Medical School, University of São Paulo, Brazil. Currently, he is a 4th-year medical student at University of Ribeirão Preto, Brazil. He has been involved in studying hydromineral balance and NO since undergraduate research.



International Conference on

NEUROSCIENCE AND PSYCHIATRY

Nov 08-09, 2021 | Vienna, Austria

Day 2 Keynote Speakers



KEYNOTE SPEAKERS

Title: Deep brain stimulation in treatment-refractory addiction: New potential therapeutic option

Angelo Lavano, University "Magna Graecia" of Catanzaro, Italy

Title: Multimodal neuronavigation for brain tumor surgery in pediatric patients

Roberto Garcia Navarrete, Centro Médico Naval, SEMAR and the Instituto Nacional de Pediatría, Mexico

ORAL PRESENTATIONS

Sessions: Neuropharmacology | Psychology | Epilepsy | Psychiatric emergencies | Neuroscience | Transcultural Psychiatry | Neuroplasticity

Title: Cognitive screening for adult psychiatric outpatients: Comparison of the cognivue® to the montreal cognitive assessment

Amanda F Rose, Cleveland Clinic Akron General, USA

Title: Let them see you sweat: Integrating yoga and well-being

Carla A Giambrone, University of NY at Buffalo, USA

Title: Anti-N-methyl-D-aspartate receptor encephalitis: A detailed review of the different psychiatric presentations and red flags to look for in suspected cases

Ghasaq Kareem Subeh, Al-Karama Teaching Hospital, Iraq

Title: Onset age of substance use and neuropsychological performance in hospital patients

Irma Höijer, University of Turku, Finland

Title: Move over mental health, brain health has arrived

Leigh E Richardson, Brain Performance Center, USA

Title: The role of radiotherapy in the treatment of primary central nervous system lymphomas

Meral Kurt, Uludag University, Turkey

Title: Perceptions of Pakistani community towards their mental health problems: A systematic review

Salman Shafiq, Lancashire and South Cumbria Care NHS Trust, United Kingdom

Title: A case of rare inflammatory brainstem syndrome- CLIPPERS

Yatin C Sagvekar, Reliance Hospital, India

Title: Cross sectional study of prevalence of physical health comorbidity in a cohort of inpatients in a secure acquired brain injury mental health service

Suhaib Bin Bilal Hafi, Elysium Healthcare, United Kingdom

Title: The impact of the COVID-19 pandemic on psychiatric emergencies

Tânia Patrícia Vasques Alves, Médio Tejo Hospital Center (CHMT), Portugal

Title: Development of early diagnosis of Parkinson's disease: Illusion or reality?

Michael V Ugrumov, Koltzov Institute of Developmental Biology RAS, Russian Federation

Deep brain stimulation in treatment-refractory addiction: New potential therapeutic option



Angelo Lavano

University “Magna Graecia” of Catanzaro, Italy

ABSTRACT

For the ability to modulate the activity of dysregulated networks, Deep Brain Stimulation (DBS) of areas involved in reward system and motivational states may have potential application in addiction and its role in treatment-refractory addiction has been proposed recently. Target areas of leads implant are nucleus accumbens (NAcc), lateral hypothalamus (LH), amigdala, lateral habenula (LHb), dorsal striatum, prefrontal cortex (PFC) and subthalamic nucleus (STN). A well-documented rationale for the choice of target is required in order to investigate the effectiveness, safety and feasibility. NAcc appears to be the most effective and safe target for DBS followed by STN; PFC is another promising target. The choice may vary based also on form of addiction: NAcc in alcohol and opiate addiction and STN in cocaine addict patients. DBS is not free of risks, so every patient has to be carefully evaluated and precise ethical standards must be defined in the form of inclusion and exclusion criteria. Additional studies are still necessary to establish effectiveness.

SPEAKER PROFILE:

Angelo Lavano received his medicine and surgery graduate in 1981 and finished his neurosurgical training in 1986. He completed two years of fellowship training at department of neurosurgery, Karolinska Sjukuset, Stockholm Sweden. Actually is full professor of neurosurgery at University “Magna Graecia” of Catanzaro. From 2011 to 2015 he was president of functional and stereotactic neurosurgery section of Italian Society of Neurosurgery and from 2016 to 2019 Member of Executive Board. Main research interests are surgical treatment of movement and psychiatric disorders, brain neuromodulation for neurogenic pain, VNS in treatment of drug-resistant epilepsy.

Multimodal neuronavigation for brain tumor surgery in pediatric patients



Roberto Garcia Navarrete

Centro Médico Naval, SEMAR and the Instituto Nacional de Pediatría, Mexico

ABSTRACT

The current neuronavigation techniques increase safety and surgeon confidence during neurosurgical procedure performance.

However, its real usefulness remains in integrating multimodal information from advanced magnetic resonance imaging, as tractography (DTI), functional studies that evaluate motor and sensitive language, motor function (BOLD techniques with different paradigms), and nuclear medicine. At the operating room, the fusion of sonographic information acquired in real-time with the predefined plan increase the chance to achieve gross-total resection of primary brain tumors.

Combining these different image modalities with brain mapping and motor stimulation in selected cases is possible, increasing surgery safety. We present our experience and the benefits of multimodal neuronavigation for brain tumor surgery in pediatric patients.

SPEAKER PROFILE:

Roberto Garcia Navarrete has completed his training in pediatric neurological surgery in 2011th from Universidad Nacional Autónoma of México. Since, 2011 he is attending pediatric neurosurgeon at the Centro Médico Naval (Secretaría de Marina Armada of México), and the Instituto Nacional de Pediatría of México. He has publications that have been cited over 300 times, and his publication h-index is 6. He has been serving as an editorial board member of several reputed journals.

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Day 2 Oral Presentations



Cognitive screening for adult psychiatric outpatients: Comparison of the Cognivue® to the montreal cognitive assessment

Amanda F Rose

Cleveland Clinic Akron General, USA

ABSTRACT

In an editorial recently published in the World Journal of Psychiatry (2021) we compared the use of the Cognivue® to use of the Montreal Cognitive Assessment (MoCA) as cognitive screening tools. We focused on the importance of utilizing psychometrically valid cognitive screening tools when assessing for cognitive decline in older adults in a psychiatric outpatient setting.

A total of 58 patients aged 55 and over participated in this comparison study. Patients completed cognitive screening on Cognivue®, a new food and drug administration-cleared computer screening device, and the MoCA. The results of patient performance using these two instruments were analyzed. Sixteen (28%) patients screened negative for cognitive impairment on both assessments.

Forty-two (72%) patients screened positive on one or both of the assessments. There was 43% agreement between cognivue and the MoCA in identifying patients with cognitive impairment, and individual subtests were weakly correlated. The MoCA was determined to be the preferred instrument due to its high sensitivity and specificity (100% and 87%, respectively) when screening for cognitive impairment. We propose that the use of cognivue cognitive screening tool be closely reviewed until more research proves that the test meets the standards for reliability and validity. It is important for clinicians to remember that screeners should not be used to diagnosis patients with neurocognitive disorders; instead, they should be used to determine whether further evaluation is warranted.

Additionally, misdiagnosing of neurocognitive disorders can pose unnecessary psychological and emotional harm to patients and their families and also lead to incorrect treatment and undue healthcare costs.

SPEAKER PROFILE:

Amanda F Rose completed her Doctorate in Psychology (PsyD) at Wright State University, USA. She is currently a clinical psychologist at Cleveland Clinic Akron General, USA and a psychology consultant at Akron Children's Hospital working with adult burn patients. She is an instructor of psychiatry at Northeast Ohio Medical University. Her research has focused on neurocognitive functioning in adult psychiatric patients and improving quality of care in outpatient mental healthcare facilities. Additionally, she serves as an editorial board member for frontiers in psychiatry.

Let them see you sweat: Integrating yoga and well-being

Carla A Giambrone

University of NY at Buffalo, USA

ABSTRACT

Introduction: Using the nested model of well-being, yoga, breath, and group classes are discussed to explicate the physiological and psychological benefits that increase well-being in terms of health and social/environmental impact. Recent theoretical advances that detail the mechanisms at work in group yoga practice are explicated. Creating heat and physiological release in the body are discussed in terms of physical health and improved self-regulation and functioning.

Methods: Recent yoga research across cultures is examined.

Results: Based on theoretical and applied research, group vinyasa yoga supports increased health and better relationships with others through increased self-regulation.

Conclusions: Overall, practitioners across the developmental spectrum report benefits that span intra and interpersonal functioning. Additional research is needed to quantify students' change, and to delineate body type and physiology that best respond to the sweat response in order to inform dosage, acclimatization and increased well-being.

SPEAKER PROFILE:

Carla Giambrone's research centers on physiological integration, well-being, yoga and the impact of movement on the bodymind. She completed her PhD at the State University of NY at Buffalo, USA, and has researched across the United States, India, and Kenya. She is in private clinical psychotherapy practice with specialties in eating and developmental disorders, marriage and family relational therapy. She publishes regularly, and her book chapter on the impact of yoga on well-being was a 100 top downloaded article in 2018. She serves as an editorial board member on several reputed journals.

Anti-N-methyl-D-aspartate receptor encephalitis: A detailed review of the different psychiatric presentations and red flags to look for in suspected cases

Ghasaq Kareem Subeh

Al-Karama Teaching Hospital, Iraq

ABSTRACT

Anti-N-methyl-D-aspartate receptor encephalitis is a rare autoimmune disorder that involves N-Methyl-D-Aspartate (NMDA) receptors. It is the most common autoimmune encephalitis, and early detection and treatment are crucial for morbidity-free recovery. Distinguishing this disorder from a primary psychiatric illness is quite challenging as this disorder classically presents with psychiatric manifestations that often resemble schizophrenic psychosis. Therefore, this review intended to scope the psychiatric manifestations this disorder could present with and dissect how they differ from primary psychiatric disorders. A PubMed database search was done. The results yielded were analyzed; eventually, 50 papers were used to review the different signs and symptoms the disease can present with, including common and rare disease presentations. Diagnostic challenges and helpful clinical clues to recognize the disorder were reviewed as well.

SPEAKER PROFILE:

Ghasaq Kareem has graduated as a medical doctor with an MBChB degree from the University of Baghdad/College of Medicine in 2018/2019. She is currently working at Al-Karama Teaching Hospital as a resident physician. This is the abstract of a research paper with her as the lead author in a collaborative work with three other co-authors, which was recently published in cureus journal of medical science.

Onset age of substance use and neuropsychological performance in hospital patients

Irma Höijer

University of Turku, Finland

ABSTRACT

Substance use causes cognitive impairment such that returning to work after rehabilitation often requires individuals to exhibit adequate improvement in cognitive function. This study aims to investigate the cognitive functions and personality of hospital patients after a month of abstinence and identify psychological test methods to monitor their rehabilitation progress. The study sample consisted of patients at Järvenpää Addiction Hospital between 2005 and 2012 (N = 164).

The neuropsychological tests of attention, executive function, verbal and visual reasoning, and memory were studied. The relationships between neuropsychological test performance, substance use disorders, onset age of drug use, and gender were examined by statistically controlling the effect of covariates (i.e. age, education, learning disabilities, and polydrug use). The average age of onset of regular substance use was 14.5 years in Early-Onset Abusers (EOAs) and 29.2 years in Late-Onset Abusers (LOAs). EOAs had greater psychomotor slowness than LOAs. LOAs had more impaired visual performance compared with EOAs. The results align with previous studies on the development of the brain and cognitive functions.

Higher level of education served as a protective factor that postpones the onset of substance use to a later age. Notably, learning difficulties were more common among EOAs.

SPEAKER PROFILE:

Irma Höijer works as a neuropsychologist in a private practice in Helsinki. She has also specialised in traumapsychotherapy and is involved in Eye Movement Desensitization and Reprocessing (EMDR) therapy and sensorimotor psychotherapy. She works with adolescents and adults. She has over 20 years of clinical experience in addiction psychology, psychiatric ward and outpatient care, and forensic psychiatry. She has completed a dissertation on correlates of substance use disorder for the clinical doctoral programme of the University of Turku's Faculty of Medicine.

Move over mental health, brain health has arrived

Leigh E Richardson

Brain Performance Center, USA

ABSTRACT

The creation of neuroplasticity in the brain using neuromodulation and neurofeedback, regulates the brain in a way that affects the patient's mood, thoughts and behavior on a subconscious level. Uniquely combined with performance coaching and cognitive behavioral therapy to treat the conscious level, Leigh Richardson enters her clients into an exciting, comprehensive treatment plan to improve brain trauma, injury and mental illnesses. By focusing on brain health, she helps her clients overcome much of the stigma associated with mental health issues as she reframes treatment plans to treat disorders on both a biological and neurological basis. Without our brain health, all other health, physical, emotional, financial or spiritual is irrelevant and Leigh's combined approach has shown exciting promise within her company The Brain Performance Center. Leigh will share with you her exclusive techniques, intriguing results, as well as the exciting science behind her methods.

SPEAKER PROFILE:

Leigh is founder and clinical director of The Brain Performance Center utilizing her MBA, MS, Counseling, and board certifications to offer state of the art solutions for "brain problems." As a brain health expert, she regularly contributes to radio and television stations across the nation. Whether it is anxiety, ADHD, depression, insomnia, or brain injury, Leigh's understanding of the brain and the different methodologies that can be used to organically change the brain is immense. And more importantly, they will provide the right solution for the problem. Leigh has a unique ability to connect with people, understand their situation, and win their trust.

The role of radiotherapy in the treatment of primary central nervous system lymphomas

Meral Kurt

Uludağ University, Turkey

ABSTRACT

Primary Central Nervous System Lymphomas (PCNSL) affects brain, eyes, and the spinal cord without any systemic disease involvement. Combined modality treatments have positive impact on overall survival in PCNSL. A typical pretreatment plan is formed by evaluating the treatment options to be used, disease involvement and individual comorbidity, neurological condition as well as functional status of patients. The PCNSL are known to be very sensitive to irradiation and certain chemotherapy treatments. The mainstay of a typical treatment is induction chemotherapy consisting high dose methotrexate (MTX) administration for most patients. The addition of radiotherapy as a consolidation treatment increases progression-free survival. With regard to radiation treatment, the use of reduced irradiation dose and different fractionation schemes have been investigated in different studies to obtain better disease control while reducing the treatment-related toxicities. It has been demonstrated that the major drawback using WBRT in conjunction with chemotherapy is the high incidence of cognitive worsening and white matter damage of the brain. It appears that the decreased neurotoxicity rates could be achieved with lower irradiation doses (30-36 Gy) compared to higher doses (≥ 40 Gy) together with similar disease control rates. In some studies, induction chemotherapy followed by more reduced dose WBRT consolidation (23.4 Gy) have been found to be feasible and effective with durable disease control rates as well as favorable neurocognitive outcomes. On the other hand, hyperfractionated WBRT (1.2 Gy twice daily to a total dose of 36 Gy), as a different radiation fractionation schema, may be associated with higher response rates. In case of relapsed or refractory disease, Stereotactic Body Radio Therapy (SBRT) may be a valuable option for patients. In conclusion, the treatment success is closely associated with careful integration of chemo/radiotherapy considering disease control, survival and treatment-related toxicities of PCNSL patients, and the best treatment modality should be individualized.

SPEAKER PROFILE:

Meral Kurt has completed his MD at the age of 29 years from Uludağ University, Turkey. She is the head of radiation oncology department of Uludağ University, Turkey. She has over 100 publications that have been cited over 300 times, and her publication h-index is 10. She has been serving as an educational board member of Radiation Oncology Association of Turkey.

Perceptions of Pakistani community towards their mental health problems: A systematic review

Salman Shafiq

Lancashire and South Cumbria Care NHS Trust, United Kingdom

ABSTRACT

Objectives: The objective of this research is to explore how Pakistani community perceive their mental health problems by systematically reviewing the scientific literature published on major databases. The findings expectedly will be useful for general public, for clinicians and for the researchers.

Methods: The methodology of this systematic literature search involved identifying and critically appraising studies that attempted to explore how Pakistani community perceives and understands its mental health problems. We carried out literature search on some major databases including PubMed, cochrane database of systematic reviews and google scholar. We followed selection criteria where researchers aimed to find perceptions and understandings of Pakistani participants regarding their mental health by adopting scientific methodologies. The extraction of data was carried out after reading the selected papers and organising the findings under specific categories, in the form of a table. Data analysis was based on the information gathered from these studies.

Results: The results suggest that Pakistani community exhibits negligible to little understanding regarding their psychological experiences and emotional processes as separate identifiable entities. Nonetheless, multiple parallel sociocultural concepts such as religion or faith driven practices and mythical or supernatural understandings are highlighted by this research. These are accepted and practiced in order to address mental health problems.

Conclusion: It appears that Pakistani community has limited understanding and scarce vocabulary to describe their inner psychological and emotional experiences. However, in order to address the mental health issues, the community exhibits a variety of responses and reactions that are driven from several unique social, cultural and religious factors. Whether these are general perceptions or causations or protective factors towards illness or possible treatment options, they all are approached and addressed with some unique understandings and perceptions that are specific to this community.

SPEAKER PROFILE:

Salman Shafiq who is a psychiatrist having a keen interest in transcultural psychiatry and has worked as a consultant psychiatrist in Pakistan and the United Kingdom with a variety of ethnic groups and within several subcultures. Shafiq also has an interest in the psychological and emotional development of individuals and his psychiatric research projects involved exploring thoughts, perceptions and ideas of participants belonging to varied cultural backgrounds. He is also author of a book titled, "Development of an individual in Pakistani society". Shafiq is a member of Royal College of Psychiatrist of the United Kingdom. He has master's degree in health research and further post graduate qualifications in psychiatry and medical leadership.

A case of rare inflammatory brainstem syndrome- CLIPPERS

Yatin C Sagvekar

Reliance Hospital, India

ABSTRACT

Chronic lymphocytic inflammation with pontine perivascular enhancement responsive to steroids (CLIPPERS) is a CNS inflammatory disease affecting brainstem, cerebellum, and spinal cord. We report a case of 23 year old lady with subacute onset of dysarthria, ataxia, vertigo and bulbar involvement. Her MRI brain showed diffuse T2-FLAIR hyperintensities involving pons; which appeared slightly expanded, with punctate foci of restricted diffusion, contrast enhancement and preservation of transverse pontine fibres. Patient responded dramatically to pulse, followed by maintenance corticosteroid treatment.

Clinical diagnostic criteria for CLIPPERS include: a. Subacute pontocerebellar dysfunction, b. CNS symptoms responsive to corticosteroid therapy, c. Absence of peripheral nervous system disease, d. Lack of alternative better explanation.

Imaging criteria include: a. Homogenous, gadolinium enhancing nodules without ring enhancement or mass effect, predominating in pons and cerebellum, measuring <3mm in diameter, b. Marked improvement with corticosteroid treatment, c. Homogenous T2 signal abnormality d. Spinal cord lesions with similar T2 and gadolinium enhancing lesions.

On neuropathology: a. Dense lymphocytic inflammation with perivascular predominance and parenchymal diffuse infiltration; b. T cells predominating infiltration (CD4>CD8) with variable macrophage components, c. Absence of myelin loss or focal secondary myelin loss, d. Lack of alternative better explanation.

Pittock et al suggested that CLIPPERS diagnosis could be made without brain biopsy, if clinical and MR imaging features were present and if alternative diagnoses are excluded.

Differentials include multiple sclerosis, glioma, lymphoma, autoimmune disorders, vasculitis, sarcoidosis, neuro-behcet's, histiocytosis, bickerstaff's encephalitis.

SPEAKER PROFILE:

Yatin C Sagvekar is a practicing consultant Neurologist, working in Mumbai, India. He is currently attached at Reliance Hospital, Navi Mumbai along with multiple other attachments throughout the city. His special interests include stroke, epilepsy and neuro-immunology. He has few publications and has made presentations at multiple national and international conferences including the AAN annual conference. He has co-authored Hypertension management updates for local division of Indian Medical association during his residency for Internal Medicine. He completed his DNB (Diplomate of National Board) in Internal Medicine in 2014. He completed his DrNB (Doctorate of National Board) in 2018 from the prestigious The Ganga Ram Institute for Post-Graduate Medical Education and Research (GRIPMER), Sir Ganga Ram hospital, New Delhi and was awarded the best Neurology Trainee for his meritorious services to the hospital.

Cross sectional study of prevalence of physical health comorbidity in a cohort of inpatients in a secure acquired brain injury mental health service

Suhaib Bin Bilal Hafi

Elysium Healthcare, United Kingdom

ABSTRACT

Aim: This was a cross sectional study to observe the prevalence of physical health comorbidity in a cohort of inpatients in a secure acquired brain injury mental health hospital.

Methods: We reviewed the case notes of 48 inpatients across three different inpatient wards of differing levels of security i.e. medium secure, low secure and locked rehabilitation. Audit tool was devised to identify age, gender, weight, mental health and physical health diagnosis given to patients by their respective teams.

Results: Average age of patients was 43.5 years ranging between 20-65 years. Average BMI of patients in the data was 30.09 ranging between 18.1- 48.18. More than half of the patients had BMI over 31. Organic Personality Disorder was by far the most common mental disorder with 73% (n=35) patients diagnosed with it. There were a total of 197 Physical Health diagnoses given to 48 patients with a mean of 4.1 diagnosis of physical health problems per patient. This ranged from no physical health diagnosis to 10 different diagnosis for one patient. Only one patient did not have a physical health diagnosis. 77% (n=37) patients had 3 or more physical health diagnosis.

Conclusion: Physical health comorbidity is a serious issue in inpatients suffering from acquired brain injury resulting in mental health problems. Untreated physical illnesses exacerbate mental health problems and increase recovery times. Adequate resources are required to manage physical health needs of such patients alongside management of mental health problems for quicker recovery and better long term quality of life.

SPEAKER PROFILE:

Suhaib Bin Bilal Hafi is a Consultant Psychiatrist at St Mary's Hospital, Elysium Healthcare in Warrington, UK. He completed his psychiatry training in Manchester and has obtained a CCT in general adult psychiatry. He also has MSc in clinical psychiatry with merit from University of Manchester, UK. He has been a Consultant Psychiatrist for 6 years and has previously served as a trainee editor for RCPsych CPD online.

The impact of the COVID-19 pandemic on psychiatric emergencies

Tânia Patrícia Vasques Alves

Médio Tejo Hospital Center (CHMT), Portugal

ABSTRACT

Studies have shown that patients with previous psychiatric disorders experienced exacerbation of their symptoms during the COVID-19 pandemic. The general population also revealed worse scores on anxiety and depression scales compared with the pre-pandemic era. On the other hand, health services had to reorganize to respond to the pandemic, leading to a decrease in the programmed medical activity. This decrease, associated with an eventual deterioration of the population's mental health status, could imply a greater influx of patients to the psychiatric emergency department (ED).

A study was conducted in Portugal, to assess the impact of the first lockdown due to the SARS-CoV-2 pandemic (18 March to 2 May 2020) on the visits to a psychiatric ED of a non-tertiary hospital center. There was a 54.7% reduction in the total number of visits to the psychiatric ED comparing with the homologous period of 2019. No significant variation was found in the main municipalities of origin or in the age of the patients. The number of assessment orders was higher. The most common diagnostic classification was mood disorders in both years, with a decrease in cases by 70.5%. The rate of hospitalizations was maintained, with a trend to an increase of the compulsory hospitalizations.

These results are in line with other similar studies performed in several countries, confirming the trend towards a decrease in the psychiatric ED visits during a pandemic. However, these studies show differences regarding the most frequent diagnostic categories.

Possible reasons for the decrease in the psychiatric ED visits could be fear of being infected by SARS-CoV-2 while travelling to the hospitals or inside these facilities, avoidance of public transportation, being afraid of not complying with the lockdown, and less demand from patients in less urgent or non-urgent situations.

SPEAKER PROFILE:

Tânia Alves is a medical doctor, with a master of medicine by the faculty of medicine of the University of Coimbra (FMUC), in Portugal. As part of her master's thesis, she was part of the research group belonging to the university clinic of hematology and applied molecular biology unit of the oncobiology and hematology laboratory at FMUC, for 4 years. Tânia is currently a resident in psychiatry at Médio Tejo Hospital Center in Tomar, Portugal, and is currently doing research in the fields of mental health stigma, addiction, and sexual medicine. She has also attended a postgraduate course in the field of addictions and is currently doing alcohol addiction consultations at Médio Tejo Hospital Center. She is also attending a specialization in couples therapy and sexual medicine since October 2020.

Development of early diagnosis of Parkinson's disease: Illusion or reality?

Michael V Ugrumov

Institute of Developmental Biology RAS, Russian Federation

ABSTRACT

The fight against neurodegenerative diseases, Alzheimer disease and Parkinson's disease (PD), is a challenge of the 21st century. The low efficacy of treating patients is due to the late diagnosis and start of therapy, after the degeneration of most specific neurons and depletion of neuroplasticity. It is believed that the development of early diagnosis (ED) and preventive treatment will delay the onset of specific symptoms. This review evaluates methodologies for developing ED of PD. Since PD is a systemic disease, and the degeneration of certain neurons precedes that of nigrostriatal dopaminergic neurons that control motor function, the current methodology is based on searching biomarkers, such as premotor symptoms and changes in body fluids (BF) in patients. However, all attempts to develop ED were unsuccessful. Therefore, it is proposed to enhance the current methodology by (i) selecting among biomarkers found in BF in patients at the clinical stage those that are characteristics of animal models of the preclinical stage, (ii) searching biomarkers in BF in subjects at the prodromal stage, selected by detecting premotor symptoms and failure of the nigrostriatal dopaminergic system. Moreover, a new methodology was proposed for the development of ED of PD using a provocative test, which is successfully used in internal medicine.

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SPEAKER PROFILE:

Michael V Ugrumov, MD, PhD, head of laboratory of neural and neuroendocrine regulations at the institute of developmental biology of the Russian Academy of Sciences (RAS), professor of department of psychology at the National Research University "Higher School of Economics" (Moscow), director of LLC "Center for Early Diagnosis of Neurodegenerative Diseases" (Kazan, Resident of Skolkovo), Vice-President of the Russian Society for Physiology, President of the Russian Society for Neurochemistry, former adviser to the President of RAS and the Ministry of Education and Science of RF, coordinator of the program of the Presidium of RAS on neurodegenerative diseases. Ugrumov graduated from the University Medical School (Moscow), got PhD at Institute Evolutionary Physiology and Biochemistry Russian Academy of Science (RAS) and Professorship at the University Medical School (Russia). He is a member of RAS, European Academy of Science and Arts, French National Academy of Pharmacy and was a visiting Professor at Tokushima University Medical School (Japan), SUNY Upstate Medical University (Syracuse, USA), University P. et M. Curie (Paris, France), University Medical School of Ulm (Germany). Ugrumov was awarded the Prize of the American Society of Experimental Biologists, the Order of Merit for France, the Orbeli Prize and Sechenov Prize of RAS. Main interests: Developmental neurobiology, neuroendocrinology, neurodegenerative diseases with focus on the development of preclinical diagnosis and preventive neuroprotective therapy of Parkinson's disease.

International Conference on

NEUROSCIENCE AND PSYCHIATRY

Nov 08-09, 2021 | Vienna, Austria

Day 2 **Poster Presentations**



POSTER PRESENTATION

Title: Spectrum of non-motor symptoms in Parkinsons disease

Maithrayie Kumaresan, University Hospital Lewisham, United Kingdom

Title: Physiological and cellular targets of neurotrophic anxiolytic phytochemicals in food and dietary supplements

Benjamin S Weeks, Adelphi University, USA; **Pedro P Perez**, One Innovations Labs, USA

Title: Child development in children of mothers with and without consumption during gestational stage

Estefanía Elizabeth Vargas Alulema, Instituto Tecnológico Superior “Manuel Lezaeta Acharán”, Ecuador

E-POSTER

Title: Developmental Coordination Disorder (DCD) in adults: A review of neuroimaging studies

Agnieszka A Reid, Independent Researcher, United Kingdom

Title: Effect of an educational intervention on knowledge and perception of individuals at risk for stroke in Tabuk, Saudi Arabia

Mohammed F Albalawi, Prince Sultan Medical Military City, KSA

Title: Psychosocial factors associated with premature ejaculation

Saifun Nahar, National Institute of Mental Health, Bangladesh

Title: Conversion disorder in children and adolescents: Definition, diagnosis, treatment, and clinical illustration

Sevlin Boz, Université Libre De Bruxelles, Belgium

Title: Craniosacral therapy use in normal pressure hydrocephalus

Young Park, Touro College of Osteopathic Medicine, USA

Physiological and cellular targets of neurotrophic anxiolytic phytochemicals in food and dietary supplements

Benjamin S Weeks¹, Pedro P Perez²

¹ Adelphi University, USA

² Innovations Labs, USA

ABSTRACT

Nutrition affects anxiety through two main pathways. First anxiety can be caused by nutritional deficiencies in antioxidants, vitamins, amino acids, metallic cations, anabolic building blocks and even water. Second, anxiety can be modulated and measurably reduced by anxiolytic food phytochemicals that modulate or bind to molecular targets of the amygdala and the hypothalamus-pituitary-adrenal axis (HPA-axis) and other brain centers. Anxiety is a feeling of worry or fear that results from perceived threats and heightens the awareness and preparedness in response to threats and stressors. Excessive anxiety, however, is a disorder resulting in exaggerated and unhealthy responses to threats and stressors. The nucleus in the brain responsible for assigning the appropriate value to a threat or stressors is known as the amygdala. In order to support an appropriate body-wide system response to threats and stressors, the amygdala will trigger the HPA-axis and brain stem to elevate heart rate, breathing and other stress preparedness responses. In addition, the amygdala also communicates with the neuroplastic learning and memory centers of the hippocampus. Communication between the amygdala and the hippocampus serves to fix a learned value to the perceived threat and to inform memories of the value of that given stressor. Interestingly, a small set of anxiolytic nutraceuticals have been shown to also have neuroplastic properties such that while reducing anxiety, they also are able to alter the neurocircuitry associated with anxiety disorders. Here we review the anxiolytic nutraceuticals that are also neurotrophic and coin the term, “anxiolytic neurotrophoid” to refer to this set of anxiolytic food molecules that also behave like neurotrophins. The endogenous neurotrophins known to support neuroplasticity in the brain include nerve growth factor (NGF), brain derived neurotrophic factor (BDNF) and neurotrophin-3 (NT3). These neurotrophins promote neuroplasticity binding to the cell surface tyrosine receptor kinase (TRK) family of receptors known as TRKA, TRKB and TRKC. Binding to the TRK neurotrophin receptors activates the cytoplasmic ERK1/2 signal transduction pathway associated with neurite outgrowth and neuroplasticity. With regard to anxiolytic neurotrophoids, *Rhodiola Rosea* derived salidroside increases stem cell NT3 receptor (TRKC) expression, BDNF secretion, ERK1/2 activation and neurite formation in these stem cells, but it is not clear if the salidroside binds to the NT3 receptor or simply increases BDNF production. Further, prenylflavonoids from Hops are known to activate signaling through TRKA (the NGF receptor) and stimulate neurite formation in cultures of PC12 cells and dorsal root ganglion, but it is not clear if the prenylflavonoids directly bind to TRKA. Interestingly, cannabidiol (CBD) directly binds to the TRKA NGF receptor, activates cytoplasmic ERK1/2 and promotes neuronal survival and neurite outgrowth in cultures of PC12 neurons. Here we show the ability of various CBD preparations to activate signals through the TRKA-ERK1/2 pathway and promote survival and neurite outgrowth in PC12 cells. Further, when combined with vitamin C, CBD-lipid metabolite emulsion showed enhanced PC12 cell survival and neurite formation. We also show that Valerian root extract potentiates NGF-stimulated neurite outgrowth. Valerian root contains the anxiolytic sesquiterpene, valerenic acid. Unlike the whole valerian root extract, valerenic acid did not potentiate NGF-mediated neurite outgrowth. Taken together, the data and information from the literature presented here strongly suggest that neuroplastic anxiolytic phytochemicals, may be particularly useful when in the treatment of anxiety because the anxiolytic effects are also coupled with the neuroplasticity associated with learning and perceived threat levels.

SPEAKER PROFILE:

Benjamin S Weeks is a professor in the Department of Biology and the Environmental Science Program at Adelphi University in Garden City, New York. Dr. Weeks. He earned his Ph.D. in Molecular Cell Biology from the University of Connecticut in 1988 where he identified domains on the laminin molecule associated with xenobiotic-induced autoimmunity and reproductive failure. At the National Institutes of Health, he continued to identify active laminin domains, receptors, signal transduction pathways and gene expression for neuronal cells and cells of the immune system. Recently he has authored books on both HIV and AIDS and Microbiology and my research focuses on xenobiotic neuro- and immuno-toxicity and nutritional approaches to mitigate these toxicities. Further, he is an expert tutor for high school science and in the preparation of Intel Science Competition Projects. He is also the inventor of MiniChill (www.minichill.com) and the President of Advance Nutrigenics. www.advancednutrigenics.com and www.facebook.com/advancednutrigenics. He is a certified Life Coach, and certified both in Sports Nutrition and in Herbs and Supplements.

Spectrum of non-motor symptoms in Parkinson's disease

Maithrayie Kumaresan

University Hospital Lewisham, United Kingdom

ABSTRACT

The triad of parkinsonism is often defined by rigidity, bradykinesia, and tremors. However, non-motor symptoms (NMS) in Parkinson's disease is a common occurrence and was recognized by James Parkinson himself. Over the course of PD progression, motor impairments may be preceded by non-motor symptoms such as depression, olfactory deficit, REM sleep disorders, constipation, and anxiety, sometimes by even up to ten years. Despite their importance, NMS is poorly recognized by clinicians and are often undeclared by patients. Usage of a patient-based screening tool such as Non-Motor Symptom questionnaire (NMS quest) draws attention to and strengthens the early management of NMS. For the effective care of PD patients, a multidisciplinary approach encompassing both pharmacological and non-pharmacological treatment is mandatory.

SPEAKER PROFILE:

Maithrayie Kumaresan has completed her MBBS from Sri Ramachandra Medical Centre, India. She is currently pursuing her residency at University Hospital Lewisham, United Kingdom. She has published over 5 publications that have been cited over 100 times, and has authored two book chapters. She also has a keen interest in clinical audits and has been pursuing it during her residency period.

Child development in children of mothers with and without consumption during gestational stage

Estefanía Elizabeth Vargas Alulema

Instituto Tecnológico Superior “Manuel Lezaeta Acharán”, Ecuador

ABSTRACT

This research aims to identify differences in child development in children with and without history of maternal consumption of substances in gestational stage, through the application of the Abbreviated Child Development Scale “Nelson Ortiz”, in a sample of Children between 0 and 3 years of age in a situation of institutional care. A descriptive and comparative study of groups was carried out in 36 participants, of which 18 had a history of maternal consumption and 18 hadn't history of maternal consumption in the gestational stage. The children were incorporated into Public Institutions and the substances consumed by their parents were: alcohol, cannabinoids, caffeine and volatile solvents. The results obtained through the analysis of variance with an ANOVA factor reveal that, there are significant differences between the values ($F= 4.405$; $p<0.01$) which allows to determine that, the consumer that influences in greater magnitude in the global development is The child's mother and the most harmful substance is alcohol. The comparative analysis obtained through the non-parametric Mann-Whitney “U” test indicates that there are significant differences of $p<0.01$ in the overall development between the group of consumption and non-consumption of substances and; in the areas of development the significant differences of $p<0.01$ in the fine adaptive motor area and of $p <0.05$ in the area of hearing and language are evident.

SPEAKER PROFILE:

Estefanía Elizabeth Vargas Alulema is a Clinical Psychologist graduated from the Pontificia Univ.Católica del Ecuador, Teacher and Coordinator of the and institutional welfare department at the Higher Technological Institute “Manuel Lezaeta A”. She is the author of the book research methodology applied at higher level, in the process of publication. She is a participant in several Congresses National and Int. Comparative analysis on child development in children 0-3 years with and without a history of maternal consumption of substances in the gestational stage Spanish academic publisher.



International Conference on

NEUROSCIENCE AND PSYCHIATRY

Nov 08-09, 2021 | Vienna, Austria

Day 2 E-Poster



Developmental Coordination Disorder (DCD) in adults: A review of neuroimaging studies

Agnieszka A Reid

Independent Researcher, United Kingdom

ABSTRACT

Developmental Coordination Disorder (DCD) is a common neuro-developmental disorder affecting the ability to acquire motor skills, plan motor actions and perform actions in a motor co-ordinated fashion. Motor-coordination difficulties in childhood were thought to be typically outgrown in adulthood. However, approximately 75% of those diagnosed with DCD exhibit motor problems in adulthood. Adults with DCD (DCDAs) also exhibit non-motor difficulties, such as problems with attention and executive function, and can suffer from depression, anxiety and low self-esteem. The economic and social burden of DCD could be estimated to be relatively high. This is due to the significant influence of DCD on everyday activities, physical and mental health, and social participation, as well as its relatively high prevalence rate. Neuroimaging studies have a potential to uncover the endophenotypes of mature brain systems affected by DCD. These in turn, could shed more light on the underlying causes of DCD by bridging the gap between high-level symptom presentation and low-level genetic variability. The aim of this presentation is to review these studies. Papers published before August 2021 were identified by bibliographic searches. Neuroimaging results (based on SPECT, fMRI, TMS, fTCD, DW-MRI and ERPs) for DCDAs, compared to controls, showed:

- 1) Structural white matter abnormalities in the corticospinal tract, internal capsule and inferior and superior longitudinal fasciculi,
- 2) Functional abnormalities in the prefrontal, frontal and occipital regions, superior parietal lobe and cerebellum,
- 3) Lack of activation in the human Primary Motor Cortex (hPMC) during a motor imagery task,
- 4) Significantly reduced interhemispheric cortical inhibition within hPMC,
- 5) Reduced leftwards brain asymmetry for speech and
- 6) A significantly smaller amplitude of N200 for correct stop trials in a stop-signal task.

These results suggest complex endophenotypes for DCDAs. The reviewed publications have shortcomings. Future research directions, including cutting-edge neuroimaging techniques and imaging genetics, are discussed.

SPEAKER PROFILE:

Agnieszka A Reid completed her PhD under the supervision of professor William Marslen-Wilson at Birkbeck College, London and MRC Cognition and Brain Sciences Unit (CBU), Cambridge. She gained expertise in neuroimaging techniques by completing her MPhil in Neuroimaging at Aston University, UK and attending specialist courses organized at The Wellcome Centre for Human Neuroimaging at UCL, London. She was a visiting scientist at MRC-CBU in Cambridge. She is currently working as an independent researcher. Her research interests focus on neuro-developmental disorders, in particular on: DCD (dyspraxia), ADHD, dyslexia and SLI. She was one of the first neuroscientists to emphasise the importance of individual differences and cooccurring disorders in understanding the aetiology of DCD, ADHD, dyslexia and SLI. Her research interests also include the genetic component and gene-environment interaction in shaping the underlying causes of these neuro-developmental disorders.

Effect of an educational intervention on knowledge and perception of individuals at risk for stroke in Tabuk, Saudi Arabia

Mohammed Faisal Albalawi

Prince Sultan Medical Military City, KSA

ABSTRACT

Introduction: Several studies have demonstrated poor knowledge of stroke and its effects among individuals at-risk raising the need for educational programs to enhance awareness in this respect. We aimed to assess the effect of an educational program on the knowledge and perception of stroke in individuals at risk.

Methods: This quasi-experiment study, conducted in Health Education Clinics at King Salman Armed Forces Hospital, was designed to assess the knowledge of people who were at risk for stroke, before and after delivering educational content. This content comprised 4-minute face-to-face explanation by a trained educator, 99-second video clip and a short hand-out. The assessment was performed by administering a structured questionnaire.

Results: A total of 313 people participated in this study. Before the intervention, 63.6% understood stroke to be due to a disturbance in blood flow resulting in loss of brain function. After delivery of the educational content, the percentage raised to 97.1%. 34.8% (109) of participants stated they knew stroke symptoms, and 55.96% knew two to four symptoms prior to intervention. Our educational content raised these percentages to 98.4% and 79.8% respectively. Good knowledge of stroke symptoms and risk factors was associated with younger age and higher level of education.

Conclusion: Educational content by means of one-to-one interaction with trained educators, video clips and handouts results in significant improvement in understanding of stroke symptoms and risk factors among at-risk participants.

SPEAKER PROFILE:

Mohammed Albalawi is a graduate of Tabuk University, college of Medicine with second degree of Honor in bachelor of medicine and bachelor of surgery. Currently he is working as senior neurology resident in neurology residency training program at Prince Sultan Medical Military City in Riyadh Saudi Arabia.

Psychosocial factors associated with premature ejaculation

Saifun Nahar

National Institute of Mental Health, Bangladesh

ABSTRACT

Premature Ejaculation (PE) has been considered as the most common male sexual dysfunction affecting men and their partners. The objective of the study was to determine the proportion and associated psycho-social factors of PE among the patients attended in the sexual dysfunction clinic of National Institute of Mental Health, Dhaka, Bangladesh. This was a descriptive cross-sectional study conducted from August 2017 to June 2018, among 280 male patients with complaints of PE aged from 18 to 60 years who were selected by convenient sampling technique. A semi-structured, self-administered questionnaire containing socio-demographic variables, Bangla version of the Premature Ejaculation Diagnostic Tool (PEDT), Bangla version of the Depression Anxiety Stress Scales (DASS 21-BV) were applied to assess their PE and associated depression, anxiety & stress respectively. Results showed that, mean (+ SD) age of the respondents was 38.8 (+8.44) years and 26.4% of the respondents were found to have premature ejaculation. Presence of PE was slightly higher (55.4%) among the older age group (aged 41-60 years) than the younger age group (aged 18-40 years).

Chi-square test showed significant association with religion, smoking status and psychological co-morbidities (depression, anxiety and stress) with presence of PE ($p < 0.05$ for all comparisons). This high prevalence and associated psycho-social factors illustrate the need for promoting awareness and development of standardized methods for diagnosis, assessment and treatment of PE.

SPEAKER PROFILE:

Saifun Nahar has completed FCPS in psychiatry from Bangladesh College of Physicians and Surgeons (BCPS) at the age of 36 yrs. Now working as assistant professor of psychiatry at National Institute of Mental Health (NIMH), Dhaka, Bangladesh. She has 9 publications. She has interest for psychotherapy and addiction psychiatry. She is an international affiliate member of American Psychiatric Association.

Conversion disorder in children and adolescents: Definition, diagnosis, treatment, and clinical illustration

Sevlin Boz

Université Libre de Bruxelles, Belgium

ABSTRACT

Conversion disorder is defined by motor and sensory symptoms that cannot be explained by a neurological pathology. There is little literature on this disorder in children and adolescents. The exact prevalence is unknown, and the etiology can be described from a systemic, psychoanalytic, and neurobiological perspective. Symptoms are often related to a stressful life event. It is important to distinguish conversion disorder from simulation. The cooperation between somatic practitioner and child psychiatrist is essential to make a diagnosis and to set up the therapy management. There is no specific treatment, but a multidisciplinary approach combining psychotherapy and functional rehabilitation seems to be the best option.

SPEAKER PROFILE:

Sevlin Boz is graduated with a medical degree in 2006 from the Free University of Brussels. Currently she is working at Queen Fabiola Children's University Hospital (H.U.D.E.R.F.)

Craniosacral therapy use in normal pressure hydrocephalus

Young Park

Touro College of Osteopathic Medicine, USA

ABSTRACT

Nearly 700,000 adults in the US have Normal Pressure Hydrocephalus (NPH), but it is often misdiagnosed as Alzheimer's or Parkinson's disease. In fact, a small percentage of people with the disease are properly diagnosed. NPH presents classically with a triad of symptoms: ataxic gait, dementia, and urinary incontinence. Diagnosis and treatment are provided together through a lumbar puncture. However, the only effective treatment that exists is a shunt insertion, which is a highly invasive procedure with uncertain responsiveness. As NPH is primarily diagnosed in those in advanced ages (60s and 70s), adjunctive treatment modalities should be further studied. Here we present a case of a patient diagnosed by a neurosurgeon and neurologist with NPH and a candidate for a shunt insertion whose symptoms substantially improved with one month of osteopathic manipulative treatment. Osteopathic considerations and literature are also reviewed in the broader context of craniosacral treatment.

SPEAKER PROFILE:

Young Park has a BBA/MPA from the University of Texas at Austin and an MBA from NYU Stern School of Business. She is currently a D.O. candidate of 2022 at the Touro College of Osteopathic Medicine.

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Guillain barré syndrome: Inverted paralysis post-operatively in a patient with ulcerative colitis

Esha Jain

American University of Antigua, Antigua and Barbuda

Rapidly progressive and life-threatening, the Pharyngeal-Cervical-Brachial (PCB) variant of Guillain-Barré Syndrome (GBS) poses a unique perspective on the complications that may arise post-operatively, especially in patients with an underlying autoimmune disease like ulcerative colitis. GBS is an immune-mediated polyneuropathy typically consisting of ascending flaccid muscle paralysis and areflexia. There are several variants of GBS, which can present atypically and be misdiagnosed. We intend to focus on PCB, a rare, localized variant of GBS. While surgery and acute infections have been independently linked with GBS, there are no known cases associating the development of the PCB variant in patients with chronic inflammatory states undergoing a surgical procedure. Herein, we report an uncommon case of a recent post-surgical patient, with underlying ulcerative colitis, who developed the PCB variant of GBS. We believe that this case study can allow physicians to understand the importance of prompt diagnosis of coexistent GBS with ulcerative colitis post-operatively.

Stop Antiepileptic Drugs (AEDs)

María del Consuelo Loy Gerala

Hospital General de Puebla, Mexico

In patients achieving seizure freedom, the physician and the patient or caregivers should decide when stop AEDs. This decision should be taken after extensive dialogue about the risk and benefits. First we and the patients or caregivers have to know that there are always a risk of seizure recurrence with AEDs or after the withdrawal of AEDs. Assuming this, the principal factors influencing the risk for seizure recurrence are: time from the last seizure (at least 2 years seizure free for better prognosis), type of epilepsy, duration of epilepsy before remission, age at onset of epilepsy, gender, family history of epilepsy, focal or generalized seizures, number of seizures before remission, developmental delay, febrile seizures history, etiology of epilepsy and lifestyle. A clinical neurologist must supervision the withdrawal, it will be gradually within a period of at least 3 months. If the patient take more than one AED, they will be removed one by one. The barbiturates and benzodiazepines will be removed slower.

Psychometric properties of the brief functioning test (FAST) in patients with a diagnosis of bipolar disorder in Mexico

Marisol Castañeda Franco

Neuropsychologist Instituto Nacional de Psiquiatría Ramón de la Fuente Muñiz, Mexico

The objective of the present study was to adapt and validate the Brief Functional Test in patients diagnosed with bipolar disorder. Forty-four people with the disorder and 43 with mental health participated, who answered a questionnaire of sociodemographic data, the FAST and the Global Activity Assessment Scale. The factorial structure, internal consistency, concurrent and discriminant validity of the aforementioned instrument were analyzed. The results indicate that the Mexican version of the FAST is an instrument that is easy to apply, that requires little administration time and that it has satisfactory psychometric properties to evaluate the functioning of patients with such a diagnosis.

Levels of nicotine dependence in the elderly and cognitive impairment

Ricardo Luís de Aguiar Assis

Universidade Federal de Minas Gerais UFMG, Brazil

Introduction: Health problems in elderly individuals are diverse. The use of cigarettes, a potentially addictive substance, has been increasing in the elderly population age group, affecting the cognitive and elderly domains, and becoming an important global public health problem.

Objective: This study aimed to investigate the relationship between tobacco consumption by the elderly, as well as different levels of nicotine dependence and cognitive domains of executive functions.

Method: It is a case-control study composed by 58 individuals aged ≥ 60 years, with 29 participants in the clinical group and 29 in the control group. The case-control sample was paired in subgroups by sex, socioeconomic status, schooling, and sample isonomy with the clinical group. We used the Shapiro-Wilk normality test, the Mann-Whitney test, the student T-test, and the Cohen d-estimator.

Results: The control group performed better compared to the clinical group with the median grade in the inhibitory control of the executive domain with Cohen's d 1.00 in the five-digit test and Cohen's 1.5 in the Stroop test. The control group compared with the high-grade clinical group presented better performance with Cohen's working memory of 1.56 d, Cohen's inhibition of 1.06 d in the five-digit test, and Cohen's of 1.17 d in the Stroop test.

Discussion and conclusion: The detection of the level of nicotine dependence is associated with the degree of cognitive impairment in the specific executive domain, which provides a possibility of differential diagnosis, both in the clinical and population contexts, directed at the rehabilitation of executive domains most affected by smoking in the elderly.

Trace amine-associated receptors and adult neurogenesis

Raul R Gainetdinov

St. Petersburg State University

Trace Amine-Associated Receptors (TAARs) are a class of sensory G protein-coupled receptors that detect various biogenic amines, products of decarboxylation of amino acids. The majority of TAARs (TAAR2-TAAR9) have been described mainly in the olfactory epithelium and considered to be olfactory receptors sensing innate odors. However, there is recent evidence that at least one of the members of this family, TAAR5, is expressed also in the limbic areas of the brain receiving projection from the olfactory system and involved in the regulation of emotional behaviors. In this study, we further characterized a mouse line lacking TAAR5 (TAAR5 knockout, TAAR5-KO mice) that express beta-galactosidase mapping TAAR5 expression. We found that in TAAR5-KO mice the number of dopamine neurons, the striatal levels of dopamine and its metabolites, as well as striatal levels of GDNF mRNA, are elevated indicating a potential increase in dopamine neuron proliferation. Furthermore, an analysis of TAAR5 beta-galactosidase expression revealed that TAAR5 is present in the major neurogenic areas of the brain such as the subventricular zone (SVZ), the subgranular zone (SGZ) and the less characterized potentially neurogenic zone surrounding the 3rd ventricle. The expression of TAAR5 positive cells along blood vessels was also detected. Direct analysis of neurogenesis by using specific markers doublecortin (DCX) and proliferating cell nuclear antigen (PCNA) revealed at least 2-fold increase in the number of proliferating neurons in the SVZ and SGZ of TAAR5-KO mice, but no such markers were detected in mutant or control mice in the areas surrounding the 3rd ventricle. These observations indicate that TAAR5 is not just providing olfactory input into limbic brain areas but it is also involved in processes related to adult neurogenesis. Thus, future TAAR5 antagonists may exert not only antidepressant and/or anxiolytic action but may also provide new treatment opportunity for neurodegenerative disorders such as Parkinson's disease. In general, the "olfactory" TAAR-mediated sensory function of detecting products of amino acid decarboxylation inside the brain may represent a previously unappreciated neurotransmitter mechanism for regulating neurogenic processes in response to the neurodegeneration or various insults to the brain.



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