DAY 1

Scientific Tracks & Abstracts

Glimpses of our Past Conferences

13th World congress on

Alzheimer's and Dementia

December 06-07, 2018 | Amsterdam, Netherlands

Alzheimer's and Dementia 2018

Sessions

Management of Dementia | Frontotemporal Dementia | Nursing care in Dementia | Vascular Dementia | Mixed Dementia | Neuroimaging in Dementia and Alzheimers | Neuro Surgery | Therpeutic Approach towards Dementia | Animal models for Dementia Research | Biomakers for Dementia

Session Chair	Session Co-Chair
Vijay Rangachari	**Caroline Baker**
University of Southern Mississippi, USA	Barchester Healthcare, United Kingdom

Session Introduction

Title: **Cognitive assessments are essential for diagnosis and treatment of Alzheimer's disease**

Susan Crowson, Certified Dementia Specialist, USA

Title: **Multitarget agents for the treatment of Alzheimer's disease**

Bachurin Sergey, Institute of Physiologically Active Compounds, Russia

Title: **Correlation between oligomer conformation and pathological variations in Alzheimer disease**

Vijay Rangachari, University of Southern Mississippi, USA

Title: **10-60-06 Steps to enhance Dementia care**

Caroline Baker, Barchester Healthcare, United Kingdom

Title: **Advanced Dementia and social engagement: Field notes from rural India**

Vighnesh N. Bhat, Psychologist-Sociologist, India

Title: **Review of recent pharmacological therapeutics in dementia: Experience and challenges towards a multidisciplinary perspective**

Luis-Angel Francisco Sorroza-Lopez, Universidad La Salle Mexico, Mexico

Title: **Advanced Dementia and social engagement: Field notes from rural India**
Vighnesh N. Bhat, Psychologist-Sociologist, India

Title: **Title: Psycho-Bizarreness: The intuitive rational-choice theory of madness**
Yacov Rofe, Bar-Ilan University, Israel

Title: **Learning Brain regeneration from Zebrafish**

Surendra Kumar Anand, Jawaharlal Nehru University, India

COGNITIVE ASSESSMENTS ARE ESSENTIAL FOR DIAGNOSIS AND TREATMENT OF ALZHEIMER'S DISEASE

Susan Crowson

CDP, Dementia Specialist, Memphis TN, USA

Comprehensive cognitive assessments are essential for accurate diagnosis and treatment of Alzheimer's disease (AD). Patients, with their family caregivers, are given an opportunity to see inside the disease process; to understand Alzheimer's disease is to understand the course of their life. Globally, the number of people living with dementia affects 50 million and 5.7 million in the US. AD is neurodegenerative, terminal illness and a disease. Cognitive assessments are the key element for *proper* diagnosis, proper planning, care and prognosis of AD. Because an assessment requires input from a person(s) who knows the patient well, family caregivers provide insights and evidence of how AD is affecting the patient while each patient's expression is unique, AD has a predictable progression/digression. By determining where patients are in the disease continuum, four key points of decision can be tracked: diagnosis and primary medical care, eligibility and referral for Alzheimer's clinical trials, safety/risk for preventable emergency medical treatment, and status of dependence with corresponding level of care. In a 4-year grant-funded outpatient clinic, 550 patients were referred by their primary care provider or neurologist for a memory screening; average age was 72. Tools used for patients are mini-mental status examination (MMSE-2: EV) and Montreal cognitive assessment (MoCA v7.0and tools used for family caregivers are quick dementia rating system (QDRS) and patient symptom checklist (based on the global deterioration scale). The assessment was the key element used to clarify/verify an AD diagnosis and treatment plan for patient and family caregivers.

Biography

Susan Crowson is a Certified Dementia Practitioner with over 12 years' of experience in developing systematic approaches to recognize and identify loss and behaviours due to dementia. She is the Dementia Specialist for the Neurology Clinic in Memphis TN providing comprehensive cognitive assessments and a Certified Testing Administrator for Alzheimer's clinical trials. She was Manager of Baptist Memorial Healthcare Corporation Memory Care Center, an outpatient memory screening clinic, and Director of Programs and Advocacy at the Alzheimer's Association Mid-South Chapter. She provided testimony for the National Alzheimer's Plan Advisory Council in Washington, DC. She is Guest Speaker for conferences and teaches about Dementia to clinical staff and families. In addition to her professional experience, she was primary Caregiver for her father who died with Alzheimer's disease in 2010.

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MULTITARGET AGENTS FOR THE TREATMENT OF ALZHEIMER'S DISEASE

Bachurin Sergey, V Sokolov, A Aksinenko V Grigoriev, G Makhaeva and E Shevtsov

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During past 15 years, any new agent that was investigated in clinical trials on Alzheimer's disease (AD) patients has not been approved in the market. One of the main problems in successful development of the agents for CNS neurodegenerative disorders treatment related to multifactorial nature of such diseases. In this relation. design of multitarget drugs was focused that simultaneously act on several biotargets connected to pathogenesis of neurodegenerative diseases looks as a promising strategy for developing new generation of neuroprotective CNS agents. In the present work, we present the results of design and synthesis of novel polypharmacophore agents superposing in one molecule several structural pharmacophore fragments of already validated neuroprotective agents. In particular, synthesis and study of conjugates of phenothiazine (methylene blue) and gamma-carboline (Dimebon) derivatives, as well as conjugates of adamantine (memantine) and carbazole derivatives was performed. Currently several lead-compounds successfully passed preclinical trials and ready to be moved on further clinical study.

Biography

Bachurin Sergey has completed his PhD and Dr. Sci degree from Moscow State University, Russia. He had been working in the University of San Francisco and in Taft's University (USA) in 1992 and in 1995. Since 2006, he is serving as the Director of the Institute of Physiologically Active Compounds, Russian Academy of Science in Chernogolovka, Russia, and the Head of the Department of Medicinal and Biological Chemistry. He has published more than 220 papers in reputed journals and about 40 patents, and has been serving as an Editorial Board Member of repute.

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CORRELATION BETWEEN OLIGOMER CONFORMATION AND PATHOLOGICAL VARIATIONS IN ALZHEIMER'S DISEASE

Vijay Rangachari

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Widespread phenotypic differences observed among Alzheimer's disease (AD) patients are one of the diverse clinical manifestations in all neurodegenerative diseases. Deciphering the molecular mechanisms that underpin such differences especially for an idiopathic disease is rather challenging. Aggregation of amyloid-β (Aβ) peptides has long been known as the key trigger in AD pathology. Polymorphism observed within the aggregation end products of Aβ fibrils seem to correlate with clinically observed pathologic variations, which has in part, corroborated the hypothesis that conformeric strains of Aβ aggregates could manifest in distinct phenotypic outcomes. In our lab, we propose to understand this phenomenon in the context of whether and how the strains of low molecular weight oligomers could propagate their structure faithfully towards morphologically distinct fibrils with conspicuous pathological phenotypes. By biophysical investigations, we recently demonstrated that an Aβ42 dodecamer called large fatty acid derived oligomers (LFAOs) is able to quantitatively replicate at low concentrations and at elevated concentrations, propagate their mesoscopic structure faithfully towards morphologically unique fibrils containing the discrete LFAO units. Furthermore, LFAO-seeded aggregates were able to selectively induce massive amounts of cerebral amyloid angiopathy (CAA) in transgenic CRND8 mice as opposed to unseeded or fibril seeded aggregates, which induced more parenchymal deposits. Results based on our model oligomer demonstrate that certain oligomeric strains could faithfully propagate their structure towards distinct fibrils and induce selective pathological phenotypes in the brain. Overall, these results bring forth important mechanistic insights into strain specific propagation of oligomers that have remained elusive thus far.

Biography

Vijay Rangachari has completed his PhD from All India Institute of Medical Sciences (AIIMS), New Delhi and Postdoctoral Studies from Florida State University and Mayo Clinic School of Medicine. He is currently the Chair of the Chemistry and Biochemistry Department at University of Southern Mississippi, a premier research and teaching institution. He has published more than 35 papers in reputed journals and has been serving many publication houses.

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10-60-06 STEPS TO ENHANCE DEMENTIA CARE

Caroline Baker

Barchester Healthcare, UK

Changing cultures towards person centred approaches in dementia care has seen significant progress within the past few years but do person centred approaches alone make for a good care home experience? A pilot programme (involving 12 care homes) was initially developed to bring together the latest thoughts and ideas in dementia care along with four levels of dementia care training to help care homes to consolidate best practice to enhance the well-being of residents living with dementia. The model is underpinned by the seven domains of well-being (Powers 2014) and is currently being implemented within 160 care homes across the United Kingdom with 52 homes accredited so far with achieving 10-60-06 status. All homes on the programme receive advice and support to implement the 76 standards from a dementia care specialist throughout the programme, along with training in levels 1-4 around dementia care developed by the team. In addition, each home introduces a specific activity intervention that has been shown to have some positive effect on well-being for example, music therapy, namaste, doll therapy and reminiscence therapy through the introduction of digital slide shows. This presentation will share some key findings that have been obtained during the programme including improvements in well-being, reductions in distress, and reductions in anti-psychotics, depression and improved pain scores. The programme has also helped care homes to achieve improved regulatory ratings. The dementia care team at Barchester have also published a book outlining the main activities that are being utilised to improve well-being that are demonstrated through individual case studies.

Biography

Caroline Baker is a Registered Mental Health Nurse with over 30 years of experience in Dementia Care. She is currently the Director of Dementia Care for Barchester Healthcare who own over 200 care homes, 160 of which provide Dementia Care. She is the Author of two books about dementia care and has published several articles within nursing journals. She has won the Lifetime achievement in Dementia Care at the UKDC Dementia Care Awards in 2014.

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ADVANCED DEMENTIA AND SOCIAL ENGAGEMENT: FIELD NOTES FROM RURAL INDIA

Vighnesh N Bhat
President of FCMS, India

Dementia as an irreversible progressive disease having little effective treatment has been a great cause of concern in the fields of psychiatry, medicine and social work. The issue has become increasingly critical over the decades owing to the fact that while at present, globally, over 36 million people suffer from dementia, it is estimated that this number will possibly be doubled by 2030 and more than three-times by 2050. Recent findings suggest that a rich social network may decrease the risk of developing dementia. Post-modern societies, with their excessive individuation and inward-looking characteristic lifestyles, have posed a greater risk to their present and future generations in this regard. As industrialization reaches its pinnacles, poor social connections, infrequent participation in social activities and social disengagements predict the risk of cognitive decline in individuals especially after middle ages. Keeping this broad spectrum of risks and threats, the issue of dementia needs to be understood in a wider context cutting across disciplinary boundaries. The present paper aims at examining the influence of social networks and social engagements on cognitive decline of the elderly population. The basic objective of this research attempt is to study whether low levels of social engagements in middle and late life were associated with the risk of incident of dementia. The researcher hypothesized that active social engagements during midlife stages of the individual, having other life-chances similar, have a protective effect from the onset of dementia. Regular, frequent and positive social interaction and intellectual stimulation keep dementia away to a considerable extent. The study starts from the end-point of the cases of advanced dementia by adopting a cross-sectional, comparative sample study method. A study sample of 200 elderly individuals from rural Karnataka, South India, (N=200 with experimental n=100 and normal n=100) selected through a stratified sampling technique (matched with five vital variables) was used to arrive at conclusions on the basis of data analysis and interpretation simple statistical techniques. The study was conducted between Jan'-Jun' 2018. Analysis of data re-established and re-confirmed the conclusion that regular (daily/weekly/frequent) engagement of the elderly in mental, social or productive activities was inversely related to dementia incidence. Low social engagement in late life is associated with risk of dementia.

Biography

Vighnesh N Bhat, PhD, is a trained Psychologist-Sociologist having engaged in research and teaching in USA, India and Ethiopia. He is also the President of FCMS, Shimoga, India.

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A STUDY OF CARCINOEMBRYONIC ANTIGEN IN PATIENTS WITH UNSTABLE ANGINA AND ITS CORRELATION WITH QUANTITATIVE TROPONIN-I

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Background and aims: Carcinoembryonic antigen (CEA) is a tumour marker associated with various malignancies and is now being investigated as a biomarker for early diagnosis of acute coronary syndromes. Its levels may rise even prior to the elevation of established markers of myocardial necrosis.

Methods: Two groups of subjects with unstable angina and healthy controls with 45 males between 40 to 60 years of age in each group were recruited. Serum CEA concentrations and quantitative troponin-I levels were measured by double sandwich ELISA method in all the subjects and the correlation between the two were observed.

Results: Mean serum CEA concentrations were 5.830±0.284 and 1.676±0.284 ng/ml respectively in unstable angina and control groups and the difference was statistically highly significant (p<0.001). Mean serum troponin-I levels were 0.426±0.073 and 0.449±0.073 ng/ml in unstable angina and control groups respectively (p=0.832). No significant correlation was found between serum CEA and CPK-MB levels in unstable angina (UA) patients (p=0.061). Also, no significant correlation was found between serum CEA and troponin-I levels in UA patients (p=0.655) indicating CEA levels rise independently, and prior to elevation of troponin-I. Statistically significant correlations were found between CEA and BMI, waist circumference, waist hip ratio, systolic and diastolic blood pressures, total leucocyte count, random blood sugar, total cholesterol, HDL and LDL.

Conclusions: CEA is a sensitive biomarker for diagnosis of unstable angina in which the traditional cardiac biomarkers such as CPK-MB and cardiac troponins are not raised. It may have a significant role in diagnosis of unstable angina patients who present with atypical manifestations.

Biography

Gajender Singh Ranga has completed his MBBS at the age of 23years from MD University Rohtak and completed his MD from prestigious All India institute of medical sciences, Delhi-110095. He is consultant of Medicine for last 20 years and currently acting as Director Professor in Dept of Medicine at Guru Teg Bahadur Hospital and University college of Medical Sciences, Delhi-110095, India. He has published more than 25 papers in reputed journals and has been serving as an editorial board member of Journal of advanced research in Medicine.

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REVIEW OF RECENT PHARMACOLOGICAL THERAPEUTICS IN DEMENTIA: EXPERIENCE AND CHALLENGES TOWARDS A MULTIDISCIPLINARY PERSPECTIVE

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Dementia is a continuous challenge to medical sciences, a condition with growing incidence and prevalence all over the world, therefore currently considered a public health priority by WHO. The results of clinical trials with recently developed pharmacological resources have demonstrated an evasive condition. The pathophysiology of dementia has been extensively researched on a broader scope of possible scenarios to explain the order of events conducting to this syndrome's neurodegeneration, and yet dementia is not fully understood. PubMed, Cochrane, Medline, Sciencedirect, and EBSCO databases were searched for clinical trials and reviews to assess the available scientific evidence regarding the efficacy of pharmacotherapy aimed at dementia. Combinations of key words (free text and MESH terms) were used in the search strategy, including: dementia, Alzheimer's disease, treatment, beta amyloid, tau hyperphosphorilation, intrinsically disordered proteins, oxidative stress, active immunization, passive immunization, multi-target clinical trials, and systematic reviews. 210 studies were retrieved. The analysis of the current results is a complex task within a multi-faceted syndrome. Dementia involves a broad spectrum of diseases which share specific hallmarks, but have variable developmental pathways. Revisiting the current, apparently disappointing results that actually represent labour of years of intensive dedication, it offers us tools and opportunities to improve the understanding of the pathophysiology, and broaden our perspective. The objective of this review is to clarify the understanding of the process that leads to these conditions. Previous results can help us to visualize paradigms of the pathophysiology, to improve the management of dementia and the comprehension of an apparently fluctuating pattern of events. Due to its complexity, the compelling awareness of a change in medical practice towards a more person-suited and simultaneously, indeed multidisciplinary diagnosis and management, but integrative of the person as a whole, a more preventive attitude, and further research towards a multi-target directed pharmacological approach for treatment, is constantly growing.

Biography

Luis Angel Francisco Sorroza Lopez completed medical school at age 26 at Universidad Regional del Sureste, Medical School, in Oaxaca, Mexico, and master studies in Clinical Pharmacology at La Salle University, Mexico, School of Chemical Science. He received first prize in the category of master level Health Sciences (2015) from this current University, and has been speaker at the 5th International Congress of Dementia and Alzheimer in London (2016) and the 1st. International Neurology Congress in Rome 2018, and published the correspondent article.

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LEARNING BRAIN REGENERATION FROM ZEBRAFISH (DANIO RERIO)

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The emergence of zebrafish as a valuable model of vertebrate development and disease physiology has been a milestone in the past three decades. It has given us many profound insights into the cellular and molecular mechanisms of numerous physiological phenomena and diseases. One of the most intriguing eminences about zebrafish is its astonishing ability to regenerate its brain after an injury. Proportionately, the area of the brain in adult zebrafish brain dedicated to adult neural stem cells (aNSCs) is much higher than in the mammalian brain. Also, the aNSCs in zebrafish brain are distributed throughout the rostrocaudal axis. Consequently, zebrafish can endure and repair an injury in almost any part of the brain. In contrast, mammalian brain owing to its limited number of stem cells restricted to only a few brain regions has an abysmal regenerative ability. This compels us to ask two fundamental questions: what cellular and molecular mechanisms give zebrafish this extraordinary brain regenerative capacity? What pieces of those mechanisms are missing in the case of mammals? If only we could figure these out, it can direct us to new paths to the discovery of novel and useful therapies for neurodegenerative diseases, traumatic brain injury, stroke and other medical conditions involving the loss of neurons. But before this anticipation can be translated into clinical practice, we have to go a long way understanding the basics of brain regeneration in zebrafish.

Biography

Surendra Kumar Anand is a 2ⁿᵈ year PhD student from the Laboratory of Cellular and Molecular Neurobiology (Lab 215), SLS, JNU working under the supervision of Dr Amal Chandra Mondal, Associate Professor, SLS-JNU. He has published a review article and a research article in reputed international journals. He won the best poster award in 22ⁿᵈ International Conference on Neurology and Neurophysiology, 2018, Rome, Italy. He was also awarded the FENS and IBRO-PERC stipend to attend the Neural Circuit Development and Plasticity course at Utrecht Summer School, 2018, Utrecht, the Netherlands. Besides, he has five poster presentations, one oral presentation and volunteering experience in national and international conferences and symposia.

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PSYCHO-BIZARRENESS: THE INTUITIVE RATIONAL-CHOICE THEORY OF MADNESS

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This book presents a new theory, Psycho-Bizarreness: The Intuitive Rational-Choice Theory of Madness, which explains the development and treatment of schizophrenia, criminal insanity and neuroses, as rational coping mechanisms. Psycho-Bizarreness Theory (PBT) claims that when individuals are confronted with extreme levels of stress, regardless of whether the source of the stress is environmental or neurological impairments that prevent them to satisfy their basic needs, their behavioral options become limited. While some individuals prefer to remain depressed, commit suicide, become drug abusers or use aggression to eliminate the stressor, a minority of people intuitively choose certain mad behaviors that serve their coping needs. Madness, defined by five operational criteria (see Rofé, 2016), is seen primarily as a repressive coping mechanism, which enables patients to block the accessibility of stress-related thoughts. The choice of a specific behavior is determined by the same three principles which guide the consumer's decision-making process when purchasing a certain product (e.g., see Wänke & Friese, 2005). This includes the need to exercise control over the stressor, availability of suitable "merchandise" and cost-benefit analysis. Although the decision to implement the intuitive/unconscious choice is conscious, patients become unaware of the Knowledge of Self-Involvement (KSI), or the True Reason (TR) for acting bizarrely, through a variety of cognitive processes that disrupt the encoding of this knowledge and memory-inhibiting mechanisms that cause its forgetfulness. Subsequently, utilizing their socially internalized beliefs regarding the causes of psychological disorders, patients develop a self-deceptive belief which attributes the cause of their symptoms to factors beyond their conscious control, and thus stabilizes the unawareness of KSI/TR. PBT proved its ability to integrate all therapeutic methods pertaining to neurosis into one theoretical framework (Rofé, 2010), explaining all data relevant to the development and treatment of conversion disorder, including neurological findings, which seemingly support the medical explanation of this disorder (Rofé & Rofé, 2013), and resolves the theoretical confusion regarding the explanation of phobia by distinguishing between a bizarre phobia (e.g., agoraphobia, and chocolate phobia) and non-bizarre phobia, such as dog phobia (Rofé, 2015).

Biography

Yacov Rofé is a Professor of Psychology and former Chair of the Interdisciplinary Department of Social Sciences at Bar-Ilan University in Ramat Gan, Israel. He taught for the Department of Psychology at Washington University in St. Louis, Missouri, and was a visiting Professor at Rutgers Medical School in New Jersey. He has published many articles in leading academic journals of Psychology, including a theory entitled "Stress and Affiliation: a Utility Theory", published by Psychological Review in 1984. An additional influential article, published in Review of General Psychology, 2008, is a review that refutes the existence of repression and the Freudian Unconscious.

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DAY 1

Video Presentation

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December 06-07, 2018 | Amsterdam, Netherlands

COGNITIVE DISORDERS IN NEUROSURGICAL PATHOLOGY OF THE BRAIN, THE POSSIBILITY OF REHABILITATION

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Neurosurgical pathology of the brain (brain injury, neuro oncology, aneurism, arteriovenous malformation, stenosis and thrombosis of cerebral arteries) is the most important cause of cognitive deficiency. The aim of the work is to assess the structure of cognitive impairment in neurosurgical pathology and to develop methods of cognitive rehabilitation. The structure and features of cognitive impairment in 165 patients with neurosurgical profile were studied. The influence on their structure and severity as well as on the effectiveness of rehabilitation measures of a number of factors, including localization and nature of the pathological process, the volume and timing of surgery, the level of education and psycho-emotional status was studied. The comparative efficiency of application of medical, physiotherapeutic and computer techniques in cognitive rehabilitation of neurosurgical patients was analyzed. Based on the results of a comprehensive analysis of the effectiveness of rehabilitation measures, algorithms of cognitive rehabilitation of neurosurgical patients have been developed.

Biography

Ivanova Nataliia Evgenievna is Doctor of Medical Sciences, Professor and Head of the Scien-tific Department of the Russian Polenov Neurosurgical Institute, branch of National Medical Research Center after V A Almazov; Chief Neurologist of the Institute; honored Doctor of the Russian Federation; Deputy Editor-in-chief of the *Russian neurosurgical journal*; Member of the Board of the Association of Neurosurgeons of Russia. The main directions of scientific and practical activity are neurosurgical pathology of brain vessels, neurotrauma, nuero-rehabilitation and ultrasound diagnostics. He is the author of 450 scientific works, including 30 patents and three monographs, supervisor of 30 candidates and four doctors of sciences in nerve diseases and neurosurgery cognitive rehabilitation.

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