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1696th Conference

May 2018 | Volume 8 | ISSN: 2161-0460
Journal of Alzheimers Disease & Parkinsonism

Proceedings of

10th World Congress on

ALZHEIMER'S DISEASE & DEMENTIA

May 30-31, 2018 Osaka, Japan

CONFERENCE SERIES LLC LTD
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10th World Congress on

Alzheimer's Disease & Dementia

May 30-31, 2018 Osaka, Japan

Keynote Forum

(Day 1)

Bruno Vincent, J Alzheimers Dis Parkinsonism 2018, Volume 8
DOI: 10.4172/2161-0460-C4-044

Bruno Vincent
Mahidol University, Thailand

Adult neurogenesis stimulation as an anti-alzheimer's disease therapeutic approach

Sox2 is a transcription factor that controls the balance between stem cells self-renewal and differentiation, thereby contributing to the control of neurogenesis. Importantly, Sox2 deficiency triggers neurodegeneration in the adult brain. Moreover, Sox2 co localizes with the Amyloid Precursor Protein (APP) in stem cells and Sox2 levels are decreased in the brain of Alzheimer's Disease (AD) patients. We have recently reported the existence of functional network engaging Sox2, the APP Intracellular Domain AICD and the secretase ADAM10 *in vitro* in human cells. Indeed, Sox2 is a potent activator of the non-amyloidogenic processing of APP by increasing the expression of ADAM10. Secondly, transient overexpression of the pro-apoptotic C-terminal APP-derived AICD50 metabolite reduces Sox2 transcription whereas inhibiting AICD production with a -secretase inhibitor augments Sox2 expression, and consequently ADAM10 protein levels, in HEK293 and SH-SY5Y cell lines. Experiments carried out *in vivo* indicate that Sox2 levels are diminished in the hippocampus of mouse models of AD when compared to control animals. Whether ADAM10 and Sox2 co-localize in neurogenic areas of the adult mouse brain and determining if this co-localization is impaired in transgenic AD models is currently under investigation. Finally, the impact of the pharmacological or the genetic modulation of this network on the reprogramming of human induced pluripotent stem cells into neurons is currently monitored in an *in vitro* model of neurogenesis. Altogether, our data suggest that enhancing the Sox2/ADAM10 axis may favor neuroprotection and neurogenesis during the development of AD.

Biography

Bruno Vincent has completed his PhD from the University of Nice, France in 1996. He has then joined the Rockefeller University in New York as a Postdoctoral Fellow. He returned back to France in 1999 at the Institute of Molecular and Cellular Pharmacology in Sophia-Antipolis and took the position of permanent Researcher at the National Center for Scientific Research (CNRS) in 2001 and was promoted to Research Director. In 2010, he moved to Mahidol University in Bangkok where his research team is working on the identification of new AD-regulating factors. He has published 60 articles in reputed international journals.

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Nela Pivac, J Alzheimers Dis Parkinsonism 2018, Volume 8
DOI: 10.4172/2161-0460-C4-044

Nela Pivac
Rudjer Boskovic Institute, Croatia

The association between BDNF gene polymorphisms and cerebrospinal fluid biomarkers in alzheimer's disease

Alzheimer's disease is irreversible neurodegenerative progressive disorder, with complex and multifactorial etiology and the most frequent cause of dementia worldwide. The more frequent form is a sporadic or Late-Onset AD (LOAD). Besides older age, other numerous risk factors for LOAD are various risk genotypes, and among them are genes for Brain Derived Neurotrophic Factor (BDNF) and its receptor Tropomyosin-related kinase B (TrkB), that code proteins involved in modulation of brain plasticity, neuronal growth, survival, function, regeneration but also apoptosis. Reduced levels of the central and peripheral BDNF have been found in various neurodegenerative and psychiatric disorders, including LOAD. Risk factors for LOAD might provoke earlier onset, duration, severity and progress of AD. At present there is no cure for AD. Therefore a quest for validated, specific and sensitive biomarkers is an unmet need of the AD research. The aim of the study was to evaluate the association of BDNF (rs6265, rs11030104, rs7934165, rs1519480, C270T) and TrkB (NTRK2) gene polymorphisms with the Cerebrospinal Fluid (CSF) biomarkers (Aβ1-42, total tau, p-tau181, p-tau199, p-tau231 and the visinin-like protein VILIP-1 (VILIP-1) of LOAD. The diagnosis of probable LOAD (N=114) was made according to the DSM-IV and the NINDS-ADRDA criteria. Our results revealed significant differences in total tau, p-tau181 and VILIP-1 concentrations in patients subdivided according to the BDNF rs6265, rs11030104, rs11030104, rs7934165 and C270T genotypes and different p-tau181, p-tau199 and VILIP-1 concentration in carriers of the NTRK2 genotypes. These results reveal a significant association between BDNF and CSF biomarkers in LOAD.

Biography

Nela Pivac is Senior Scientist, re-elected, at the Ruđer Bošković Institute (RBI) in Zagreb, Croatia and Associate Professor at the Interdisciplinary PhD study in Osijek University. She is Associated Editor of *Progress in Neuro-Psychopharmacology and Biological Psychiatry*, Head of the Laboratory for Molecular Neuropsychiatry, main Editor of the RBI Annual report, and leader of numerous national and international projects. She has won 4 state awards for scientific achievements and published 139 scientific papers and 38 chapters in the books, cited 2948 times, H-index=32 and serves as a Reviewer for domestic and international projects and numerous reputed journals.

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Reshma A Merchant, J Alzheimers Dis Parkinsonism 2018, Volume 8
DOI: 10.4172/2161-0460-C4-044

Reshma A Merchant

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HAPPY (Healthy Ageing Promotion Program for You) for ageing in place

Population, health and prevention of frailty and dementia have become a public health priority to reduce healthcare cost and institutionalization. The primary aim of Healthy Ageing Promotion Program for You (HAPPY) was to improve cognition and function. Participants were older adults aged above 60 years recruited from senior activity centres and community. In addition to demographics data, information on frailty, quality of life, cognition and function was collected. Physical measurements including Short Performance Battery test (SPPB) was also carried out. Those screened to be pre-frail or frail and ambulant or have underlying cognitive impairment were invited to participate in HAPPY. Exclusion criteria included diagnosis of dementia and wheelchair bound. 40 participants were followed up for 3 months. Baseline characteristics of participants include mean age of 75.5 years. 25 (62.5%) of participants complained of subjective memory problems and 8 (20%) of participants had Mini Mental State Examination (MMSE) scores below 24. About 29 (72.5%) had hypertension, 17 (42.5%) had hyperlipidemia and 11 (27.5%) had diabetes. 8 (20%) of participants had 3 or more chronic diseases. 34 (85%) were prefrail and 5 (12.5%) were classified as frail. After 3 months, MMSE mean scores improved from 25.9 to 26.8 and Montreal cognitive assessment mean scores improved from 23.0 to 24.9. In addition to cognitive scores, there was small but significant improvement in gait speed and total SPPB scores without any change in self-rated quality of life. Community based engagement and intervention programs are useful in delaying the onset of dementia and frailty.

Biography

Reshma A Merchant has graduated from University of Edinburgh and currently a Fellow of Royal College of Physician, Edinburg. She is currently the Head of Division of Geriatric Medicine at the National University of Singapore, Singapore. Her primary interest is in cognitive frailty.

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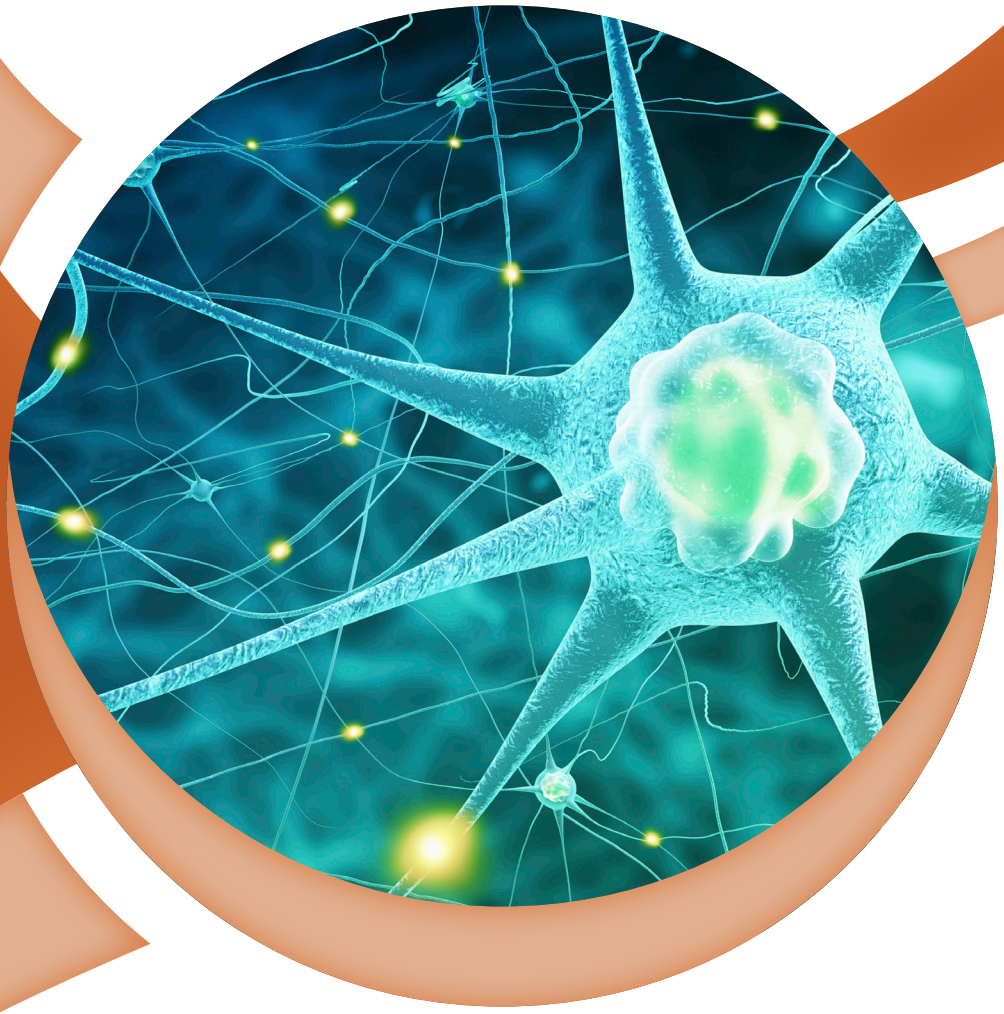

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Keynote Forum

(Day 2)

Philip Choo, J Alzheimers Dis Parkinsonism 2018, Volume 8
DOI: 10.4172/2161-0460-C4-044

Philip Choo
National Healthcare Group, Singapore

Forging a frailty-ready healthcare system to meet population ageing

The current system of using hospitals is not sustainable. The shift upstream to prevention and slowing the progression of illness as well as downstream shift to better maintain the growing frail elderly will be important. Developing services for the elderly in the community will require seamless coordination at ground levels. Together with this will be the enablers to aid in the healthcare transformation. Our goal is good and affordable care at a level that is sustainable for the long term.

Biography

Philip Choo has been Group Chief Executive Officer at National Healthcare Group Pte Ltd. since 2015. He has served as the Deputy Group Chief Executive Officer of Care Integration and Population Health and Chief Executive Officer of Tan Tock Seng Hospital at National Healthcare Group Pte Ltd. He has served as the Chairman and Director of Medical Board of Tan Tock Seng Hospital at National Healthcare Group Pte Ltd. He serves as the Director of Integrated Health Information Systems Pte Ltd.

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Benedicte Defontaines, J Alzheimers Dis Parkinsonism 2018, Volume 8
DOI: 10.4172/2161-0460-C4-044

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Benedicte Defontaines

Hospital Center De Moze, France

Evaluation and care for patients with cognitive disorders with remote consultation: A holistic approach

Currently, approximately 46.8 million people live with dementia in the world, and the latest predictive patterns foresee 135 million in 2050. The needs of the patients, along with those of their relatives (who face co-morbidities) and the consecutive costs bring this issue to the forefront as a social emergency. The Aloïs network has modeled an innovative ambulatory process allowing subjects to get a diagnosis, an adapted and graduated care in order to delay the occurrence of dependency. Since 2014, leaning on the development of new technologies, we have modeled a set of procedures enabling any subject to access, no matter their geographic - regarding medical deserts - or economic situation - social rates. The procedure, intended for medical deserts, expatriates and French Overseas Territories inhabitants, basically offers three types of services: For general practitioners: training and equipment sessions are organized to enable them to detect patients with cognitive complaints; For patients: diagnostic examinations including a neuropsychological assessment by teleconference; for patients and their relatives/caregivers: psycho-education sessions have been set-up. Alongside, a study is currently ongoing, aiming to validate the tele-consultation model. The first results demonstrate a good consistency between a classical face to face and teleconference situation. This validation allows us to extend the current model.

Biography

Benedicte Defontaines has completed her MD degree, Advanced degrees in Biochemistry, Neurology and Neurosciences. In 2004, she created the Aloïs network, a new community-based pathway for the diagnosis and care of patients with cognitive disorders fully complementary to the existing system but more flexible and less traumatizing for patients and less costly for the state.

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Dong-Woo Lee, J Alzheimers Dis Parkinsonism 2018, Volume 8
DOI: 10.4172/2161-0460-C4-044

Dong-Woo Lee

Inje University Sanggye Paik Hospital, Republic of Korea

Implementation of dementia management system in Korea

Dementia is a chronic, disabling illness which is most feared by elderly people. Dementia causes heavy caregiver burden on the family. Dementia also imposes much burden on the society, making it as one of the major public health problem in many countries. Actually, OECD recommended posing a priority to dementia management as a public health task. As the Korean population is rapidly aging, there is a rapid increase of people with dementia in Korea. In Korea, the people with dementia double every 15 years and the economic burden of care for dementia doubles every 10 years. To cope with this rapidly increasing burden of dementia, Korean government has launched "Plan for National Responsibility for Dementia". The plan is composed of distributing dementia reassuring center nationwide, setting up dementia reassuring hospital and decreasing the burden of paid money for medical treatment and long-term care for dementia. The major hurdles in implementing the plan and the strategies to overcome such hurdles are suggested.

Biography

Dong-Woo Lee has completed his MD from Seoul National University, Republic of Korea. He is presently working as a Professor in Department of Psychiatry, Inje University Sanggye Paik Hospital, Seoul, Republic of Korea. He is also the Director of Nowon Dementia Support Center.

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Claude M Wischik, J Alzheimers Dis Parkinsonism 2018, Volume 8
DOI: 10.4172/2161-0460-C4-044

Claude M Wischik

University of Aberdeen, UK

Hydromethylthionine: Potential of a single drug for multiple neurodegenerative protein aggregation disorders

Following our discovery of a fragment from the repeat domain of τ-protein as a structural constituent of the PHF-core in alzheimer's disease, we developed an assay that captured several key features of the aggregation process. τ-τ u binding through the core τ fragment can be blocked by variants of the Methyl Thioninium (MT) moiety found to dissolve proteolytically stable PHFs isolated from AD brain. The PHF-core tau fragment induces templated proteolytic processing of normal τ, is inherently capable of auto-catalytic self-propagation, can be assembled into characteristic PHFs *in vitro* and assembly can be blocked by MT-like compounds. The potential utility of these compounds for reduction of pathology and reversal of behavioural deficits was confirmed in tau transgenic mouse models using a stable reduced form of the molecule (hydromethylthionine) which is better absorbed and tolerated. Similar benefits have been shown in a synucein aggregation assay *in vitro* and in a transgenic synuclein mouse model. These findings led to the first clinical trials to test hydromethylthionine therapy in alzheimer's disease as a way to block this cascade. Although hydromethylthionine appears to be beneficial as monotherapy, there is a negative interaction with standard symptomatic treatments for AD which was has now been confirmed in a τ transgenic mouse model. In clinical practice, hydromethylthionine therapy will be optimally useful as first-line monotherapy. The efficacy of hydromethylthionine as a synuclein aggregation inhibitor suggests that it may also be useful in parkinson's disease and dementia of the lewy body type.

Biography

Claude M Wischik has completed his Medical degree at Flinders University in South Australia and PhD at the University of Cambridge, UK. He is the Professor of Psychiatric Geratology at the University of Aberdeen and Chairman of TauRx Therapeutics. He has published extensively on the τ-pathology of AD.

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