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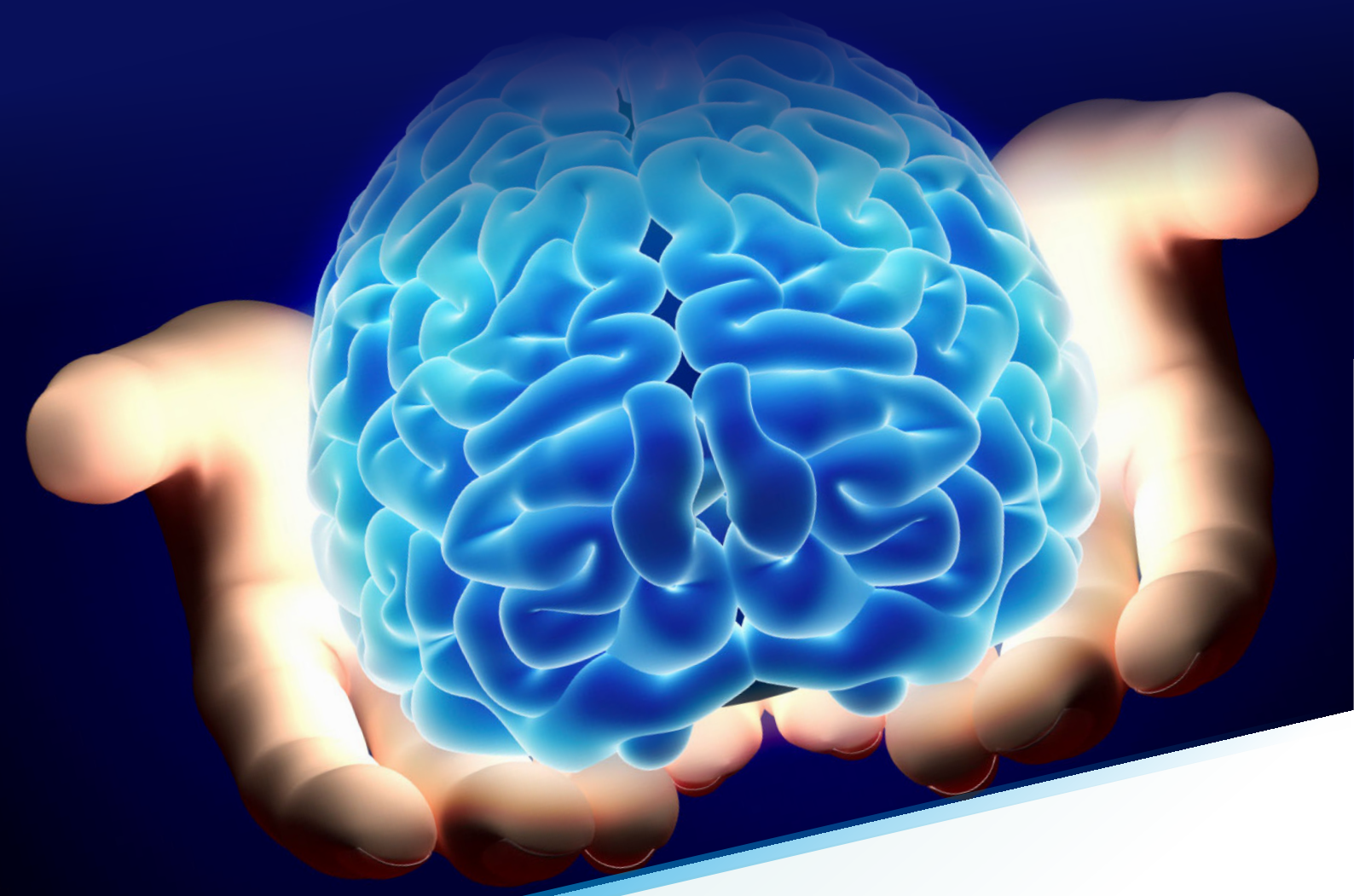
February 15-16, 2019 Amsterdam| Netherlands



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KEYNOTE FORUM
DAY 01

Hans von Holst, J Alzheimers Dis Parkinsonism 2019, Volume 09
DOI: 10.4172/2161-0460-C1-059

Hans von Holst
Karolinska University Hospital , Sweden

A new hypothesis on the etiology to dementia in traumatic brain injury and stroke

Increased intracellular water content defined as cytotoxic brain tissue edema is a serious secondary clinical complication to traumatic brain injury (TBI) and stroke and without knowledge to the etiology. Recently, a hypothesis to the nervous tissue edema was presented suggesting that external dynamic and internal mechanical static impact forces caused protein unfolding resulting in an increased brain tissue water content and what happens with the metabolism in the long run. The hypothesis was confirmed by computer simulation tests. In this laboratory study, we further evaluated the hypothesis by using the mature protein laminin LN521 upon the effects of both dynamic as well as static impact forces, respectively. The treated laminin solutions were then analyzed with denatured electrophoresis and electron microscopy showing aggregation and fragmentation of the laminin structures. The present laboratory results confirm earlier hypothesis and computer simulation suggest for the first time that dynamic impact force in an accident and increased mechanical static force in stroke unfold mature proteins having the potential to increase the intracellular water content defined as cytotoxic brain tissue edema. The clinical condition resembles the phenomenon when elasmobranchs including white sharks prevent their cells from too high hydrostatic pressure in the deep sea. Thus, the present laboratory study results and knowledge from marine physics may be considered to improve the clinical treatment and outcome of TBI and stroke patients. This opens up new perspectives how vascular dementia in TBI and stroke should be looked upon when it comes to clinical treatment.

Biography

Hans von Holst has received his MD degree in 1976 and Specialist in Neurosurgery in 1982, at Karolinska University Hospital. In 1985, he earned his PhD and Associate Professorship in Neurosurgery, Clinical Neuroscience from Karolinska Institutet and has been appointed as Senior Neurosurgeon from 1988-2015. During 1991-1996, he was Chairman of the Department of Neurosurgery and Division Manager of the Neuro Clinics at Karolinska University Hospital, respectively. In between 1994-2014, he was appointed as Professor in Neuro Engineering at KTH Royal Institute of Technology and visiting Professor at Karolinska Institutet from 2006-2012. He has published over 150 original papers in reputed journals, published reviews and books and served as Editorial Board Member for several journals.

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Anne L Foundas
Brain Institute of Louisiana, USA

Vascular cognitive impairment: treatment innovation

The world population is aging. It is estimated that by 2050 there will be over 1.6 billion people worldwide aged 65 and over (17% of the world's population). The greatest risk for dementia is increasing age. Vascular dementia (VaD) is one dementia subtype that occurs with increasing age. This diagnosis is found in about 20% of people with dementia. Many people with neurodegenerative diseases, like Alzheimer's disease or Frontotemporal dementia, have microvascular disease and meet the clinical criteria for a mixed-type of dementia. These mixed-dementia patients often have a more malignant progression of their disease compared to individuals without microvascular disease. Our clinical and research team focuses on early intervention in individuals with mild cognitive impairment, including innovative treatment approaches to change the trajectory of cognitive decline. This talk will be divided into three parts. The first part will include an overview of the clinical and pathological heterogeneity of VaD. The second part will emphasize clusters of patients with vascular cognitive impairment, including major cognitive markers that seem to be prevalent across clinical subtypes. Finally, the third part will present preliminary data regarding our clinical approach that includes the innovative use of neural stimulation and photobiomodulation. Our clinical research team uses a two-pronged approach to: (1) improve communication skills and functional independence in patients with a dementia diagnosis, and (2) facilitate early identification and treatment of at risk individuals. This discussion will focus on our innovative treatment approaches designed to enhance functional independence, improve communication skills, and reduce caregiver burden.

Biography

Anne L Foundas is a Cognitive and Behavioral Neurologist currently working as the Executive Director of the Brain Institute of Louisiana. She worked as a Professor of Neurology at Tulane University, Vice-Chair of Clinical Research at LSU, and Chair of Neurology at UMKC. Her clinical practice focuses on patients with cognitive disorders. Her research addresses questions about speech and language, motor control, learning and memory. She has published over 200 scientific papers.

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Shu G Che, J Alzheimers Dis Parkinsonism 2019, Volume 09
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Shu G Chen
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Peripheral protein aggregates as biomarkers for neurodegenerative diseases

Neurodegenerative diseases such as Parkinson's disease (PD) and Alzheimer's disease (AD) are characterized by the deposition of misfolded protein aggregates in the central nervous system (CNS). Previous efforts have focused on the development of CNS-proximal clinical biomarkers, including PET neuroimaging and cerebrospinal fluid measures of alpha-synuclein, beta-amyloid and tau. However, these diagnostic techniques are often used in clinical studies on patients with advanced disease state, and are complex, invasive or expensive. Therefore, there remains an urgent need for reliable, inexpensive and minimally invasive peripheral biomarkers. Recent studies have revealed widespread peripheral involvement of PD- and AD-like pathology, often prior to clinical manifestations of the diseases. Indeed, alpha-synuclein and tau deposits have been observed in peripheral tissues in PD and AD, respectively. A formidable challenge is that the levels of these amyloidogenic protein aggregates in peripheral tissues are extremely low and thus only variably detectable using immunological methods. Therefore, highly sensitive analytical platforms are required as the new generation of biomarker assays specific for protein aggregates and amyloid fibrils. The real-time quaking induced conversion (RT-QuIC) has emerged as a robust, rapid and ultrasensitive technology for template-assisted amplification of misfolded protein aggregates in neurodegenerative diseases. Using the RT-QuIC technique, our recent studies have shown that disease-associated protein aggregates are readily detectable in peripheral tissues of patients affected by PD, dementia with Lewy bodies, and AD and other tauopathies. Validation of peripheral protein biomarkers will enable sensitive premortem diagnostic tests for PD, AD, and related disorders, and accelerate clinical trials for disease-modifying therapies.

Biography

Shu G Chen has received his PhD in 1992 from the State University of New York at Buffalo, New York, USA. He is an Associate Professor of Pathology and Neurology at Case Western Reserve University School of Medicine. His research centers on pathogenesis of Parkinson's disease, Alzheimer's disease and other neurodegenerative disorders. He has published more than 80 papers in scientific journals.

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Morejoy Saineti
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Africa dementia services (ADS)

There is little research done so far to inform us on dementia in Africa. However, it is known from personal stories of the ADS group and the small outreach team in Zimbabwe reports that people who are living with a cognitive impairment are perceived as witches, bewitched or demon possessed. This means that they are neglected and missed from the main stream clinical care. Africa Dementia Services aims to build work around providing dementia awareness to the public, and professional training, information materials, research opportunities, supportive services and eventually building of dementia villages. Africans are prone to sickle cell anaemia and other blood conditions which may result in vascular dementia. At the vascular conference, a report will be provided on the work in Zimbabwe, (an action research on developing a dementia information service in a village in Zimbabwe).

Biography

Morejoy Saineti has pursued her RGN, RMN, QNI, MSc Health Research degrees. She is a Dementia Champion and Founder of Africa Dementia Services operating under Regeneration Centre International charity. She is a Visiting Lecturer at Greenwich University London since 2012, Operations Director LANH professionals LLP since 2016. She is aspiring to do a PhD study on dementia and service development. She has received an award "International Dementia Nurse of the Year 2010" which was awarded by Stirling University and RCN. She is also a runner up of The Guardian Public Servant of the Year 2010. She pioneered a bespoke Community Dementia Palliative Care service in Westminster which saved the NHS more than a quarter of a million in the first year of inception. She has been a Queens Nurse since 2013. She is an International Speaker having presented in conferences such as International Conference on Sexually Transmitted Diseases and HIV/Aids (ICASA).

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