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4th Global Experts Meeting on
PARKINSON'S & MOVEMENT DISORDERS

May 14-15, 2018 Singapore

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Keynote Forum

(Day 1)

Vinod Metta, J Alzheimers Dis Parkinsonism 2018, Volume 8
DOI: 10.4172/2161-0460-C2-038

Vinod Metta

Imperial College Hospitals, UK

Triple 'P' for 'P': Fast facts, CDS regimes in parkinson's disease

James Parkinson described Parkinson's Disease (PD) in 1817 which is now recognized as one of the commonest chronic neurodegenerative disorders in the world with an annual incidence of 20 per 100,000 and up to 2% of population aged over 80. Typically, the condition leads to depletion of dopamine containing and other (serotonergic, noradrenergic) neurons leading to the clinical expression of the classic motor symptoms of bradykinesia, tremor and rigidity while non-motor symptoms such as olfactory loss, depression and dysautonomia also dominate. Dopaminergic neurons in the basal ganglia normally fire in a random but continuous manner, so that striatal dopamine concentrations are maintained at a relatively constant level. In the dopamine-depleted state, however, intermittent oral doses of levodopa induce discontinuous stimulation of striatal dopamine receptors. This pulsatile stimulation leads to molecular and physiologic changes in basal ganglia neurons and the development of motor complications. These effects are reduced or avoided when dopaminergic therapies are delivered in a more continuous and physiologic manner. Studies in primate models and patients with parkinson's disease have shown that continuous or long-acting dopaminergic agents are associated with a decreased risk of motor complications compared with short-acting dopamine agonists or Levodopa formulations. Continuous dopaminergic stimulation is a novel therapeutic strategy for the management of parkinson's disease, which proposes that dopaminergic agents that provide continuous stimulation of striatal dopamine receptors will delay or prevent the onset of Levodopa-related motor complications. Most innovative, neoteric treatment strategies that provide continuous dopaminergic stimulation can be achieved with triple 'P' treatment in the form of transdermal patch, pump and continuous infusion therapies helps to combat this debilitating and denervating illness.

Biography

Vinod Metta got trained at Kings College Hospital, London and received higher Specialist training in Neurology and Movement Disorders at Imperial College, University College London, Queen Square Hospitals, UK. He was awarded with prestigious Doctorate award for his research exploring pathophysiology and treatment options of disabling non-motor symptoms fatigue and sleep in patients with parkinson's disease, in collaboration with Kings and Imperial College London. He is also a Recipient of prestigious Joint British Neurology and Australian and New Zealand Association of Neurologists 2016 Fellowship award. He has authored and co-authored several papers published in high impact factor journals like prestigious Brain Journal and several book chapters in iconic *Oxford Textbook of Clinical Medicine* (5th and 6th editions) and his recent book on hidden face of Parkinson's disease reached celestial heights. He has special interest in exploring and pioneering biomarkers to investigate pathophysiology and treatment models in neurodegenerative disorders.

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Quincy J Almeida, J Alzheimers Dis Parkinsonism 2018, Volume 8
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Quincy J Almeida

Wilfrid Laurier University, Canada

A look into the underlying mechanisms and rehabilitation interventions for gait impairment in parkinson's disease

Gait and balance deficits are arguably the most debilitating symptoms associated with Parkinson's Disease (PD), as well as the leading cause of loss of independence and quality of life in PD. One example is the so-called freezing phenomena, in which patients report feeling like their feet are glued to the ground leaving them unable to make their next step. This motor symptom is argued by many to dopa-resistant and often leads to an increased risk of trips and falls. Thus, it is considered one of the most severe gait disorder associated with advanced PD. This presentation will utilize a series of experiments to systematically disentangle the sensory, perceptual, cognitive and emotional processes involved in the planning and control of human walking, in order to enhance our understanding of the underlying mechanisms of the typical motor symptoms seen in PD. Subsequently, these basic science discoveries will be translated into therapeutic interventions that target these mechanisms, with the goal of identifying the most novel and effective rehabilitation strategies recommended for PD.

Biography

Quincy J Almeida is the Director of the Movement Disorders Research and Rehabilitation Centre (MDRC) of Wilfrid Laurier University with more than 100 published articles. He is an Expert in motor control, balance and gait assessment and exercise rehabilitation for parkinson's disease. He has been awarded the Queen Elizabeth II Diamond Jubilee Medal; the Franklin Henry Young Scientist award for Motor Control in Canada and the Early Career Distinguished Scholar award from the North American Society for the Psychology of Sport and Physical Activity.

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Raymond Chong, J Alzheimers Dis Parkinsonism 2018, Volume 8
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Raymond Chong

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The dimensionality of fatigue in parkinson's disease

Fatigue is commonly reported among individuals with Parkinson's Disease (PD). It may occur before the overt symptoms of bradykinesia, rigidity and tremor. As very little is understood about how to measure it, we determined the dimensionality of fatigue in PD using four recommended scales, the Fatigue Severity Scale (FSS), Functional Assessment of Chronic Illness Therapy-Fatigue (FACIT-F), Parkinson Fatigue Scale (PFS) and Visual Analog Fatigue Scale (VAFS). Quality of life measures including cognition, depression, sleep, life orientation, physical activity and PD symptoms were tested for their correlations with fatigue. The results showed that fatigue was associated with many quality of life variables, with the PDQ-39 summary index showing the strongest association. PD subjects agreed more strongly than caregivers that they experienced higher levels of fatigue. 27% of PD subjects rated fatigue as one of their top three most bothersome symptoms. The constructs of fatigue were captured within one dimension by the VAFS which explained 67% of the total variance. The highest likelihood ratio gave a cut-off score of < 5.5 on the VAFS. The change in scores required to produce a perceptible difference or is grossly observable ranged between 1.4 and 2.2 points respectively. The potential utility of a single measure such as the VAFS in PD that is reliably correlated with quality of life is consistent with the pursuit to develop clinical tests and measurements that are accessible, easy to use and universally interpretable across health science disciplines. It is hoped that the simplified method of quantifying fatigue may be useful in studying movement disorders in PD.

Biography

Dr. Raymond Chong completed his PhD in 1997 from the University of Oregon. He is the director of the Augusta University's Applied Health Sciences graduate program. He is the lead author in over 70% of his papers. Dr. Chong is a regular reviewer for the US Veteran Affairs Research department and also serves on the editorial board of several journals including Gait & Posture.

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Surya Pratap Singh, J Alzheimers Dis Parkinsonism 2018, Volume 8
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Surya Pratap Singh

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Neuroprotective and anti-inflammatory role of *Tinospora cordifolia* in MPTP induced parkinsonian mouse model

Parkinson's disease, an age related neurodegenerative disorder, is characterized by progressive loss of dopaminergic neurons in substantia nigra pars compacta of the mid brain and projecting neurons in striatum. Recently, several studies regarding parkinson's disease have proven the role of oxidative stress in neurodegeneration and neuroinflammation. In this context, our study evaluates the neuroprotective effect of *Tinospora Cordifolia* Aqueous Extract (TCAE) in parkinsonian mice. From the immunohistochemistry and western blot analysis, it is evident that TCAE inhibits the MPTP-induced activation of NF-κB and its associated pro-inflammatory cytokines. Through, Real time PCR analysis it was revealed that pro-inflammatory cytokines were found to be up regulated in MPTP intoxicated mice while TCAE treatment significantly restored their levels. In addition, the expression level of IL-10 was found decreased in diseased condition which was further restored by TCAE treatment. Tyrosine hydroxylase, an important enzyme which is used as marker in parkinson's disease, its expression was found to be reduced in MPTP mice while on giving TCAE, its level was significantly restored. Our result clearly indicates that *Tinospora cordifolia* provides neuroprotection against MPTP induced nigrostriatal dopaminergic neurodegeneration and shows potent anti-inflammatory activity.

Biography

Surya Pratap Singh is currently working as a Professor in the Department of Biochemistry in Banaras Hindu University. He has done his Post-doctoral training from 2000 to 2008 in University of Illinois at Chicago and Johns Hopkins, USA and in 1995-1996 in National Institute of Neuroscience, Tokyo, Japan. He has received his PhD, MSc and BSc in Faculty of Science, Banaras Hindu University, India.

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