Pooja Rai et al., J Alzheimers Dis Parkinsonism 2016, 6:5(Suppl)
http://dx.doi.org/10.4172/2161-0460.C1.022

Neurocognitive markers in early diagnosis of Alzheimer's disease

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Alzheimer Disease (AD) is a neurodegenerative disorder in which proteins build up in the brain to form structures called 'plaques' and 'tangles' resulting in an increase in cognitive decline. Attention is the first cognitive domain affected in AD because disconnection between frontal and posterior parietal areas may mediate the selective disruption of attentional function of AD (Parasuraman & Haxby, 1993). The early diagnosis of AD has been the major concern in present era. Although past research focused on memory deficits in AD, recent studies show that attention functions deteriorate earlier than memory and visuospatial deficits. Recent brain imaging studies have provided strong support for the anatomical and neuropsychological bases of attentional network, which may be dysfunctional in Alzheimer's disease. In this research, published research papers on neuropsychological markers of AD were collected and reviewed.

The aim was to examine the current status of research on neuropsychological markers for the identification of AD. Many studies have focused on neuropsychological and cognitive markers which may be more relevant for early identification of AD. Available evidence show that in AD, attention is the first cognitive domain, which is affected. Although, very few neuropsychological markers of AD have been identified to-date, the results of studies identifying neuropsychological markers of AD have been promising in the field. Among several tests, which measure the attention function, Attention Network Task (ANT) stands out for its comprehensiveness. The neuropsychological markers, therefore, have an edge over other markers in terms of feasibility and specificity. These markers can also help in screening of community residing older adults who remain undiagnosed, as they do not understand the difference between normal signs of aging and dementia. The neuropsychological markers have far greater importance in comparison to neurophysiological and biological markers. Thus, neuropsychology of attention along with the visuospatial and memory function may provide a better understanding of the early diagnosis of AD.

Biography

Pooja Rai, a post graduate in Psychology with specialization in Clinical Psychology from Banaras Hindu University. At present, she is pursuing her second year of Ph.D. from Department of Psychology, Banaras Hindu University under the supervision of Prof. I. L. Singh on the topic Attention Networks in Alzheimer's disease (AD) and Healthy Aging. Her research interests include psychodiagnositics and neuropsychology of Alzheimer's disease. During the course of her Ph.D. she aspire to explore the tenets underlying the attentional deficits in Alzheimer's patients and finding objective and reliable neuropsychological markers of Alzheimer's disease especially attentional, memory and visuospatial markers. She is a hardworking student and acheive B.H.U. Gold medal in her graduation and postgraduation. She has presented over dozens of papers in several national and international conferences. She has published 2 papers in her postgraduation itself.

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