

International Conference on

DEMENTIA AND DEMENTIA CARE

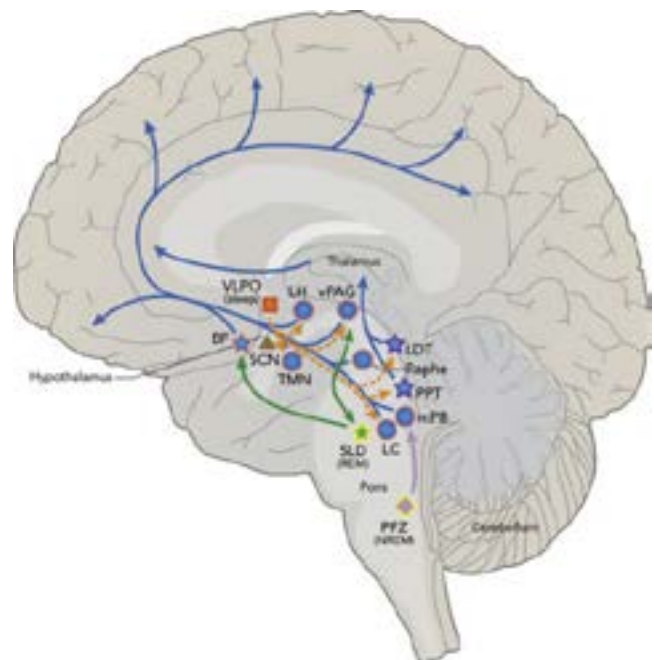
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Sleep in Alzheimer's disease

Wahid Rashidzada
Stony Brook Southampton Hospital, USA

Sleep disturbances were once considered to be a bi-product of neurodegeneration. However, they are not limited to advanced disease states but occur even before cognitive decline and may be predictive of neurodegeneration. Sleep disorders are common in dementia and Alzheimer's disease (AD) and a major cause of institutionalization. Sleep abnormalities can appear years before cognitive decline and may be predictive of dementia as is with AD. A two way relationship between sleep and amyloid β ($A\beta$) has been well established with disturbed sleep and increased wakefulness leading to increased $A\beta$ production and decreased $A\beta$ clearance. $A\beta$ deposition is associated with increased wakefulness and sleep disturbances. In the sleep wake cycle, $A\beta$ is higher during wakefulness and lower during sleep. This fluctuation is lost with $A\beta$ deposition, likely due to its sequestration into amyloid plaques. $A\beta$ is believed to play a significant role in the development of sleep disturbances in the preclinical and clinical phases of AD. In addition abnormal tau is the earliest observable AD-like pathology in the brain with abnormal tau phosphorylation in many sleep regulating regions such as the locus coeruleus, dorsal raphe, tuberomammillary nucleus, parabrachial nucleus, and basal forebrain prior to the appearance of amyloid or cortical tau pathology. Human tau mouse models exhibit AD-like sleep disturbances. Sleep changes are common in tauopathies including frontotemporal dementia and progressive

supranuclear palsy. Together these observations suggest that tau pathology can induce sleep disturbances and may play a large role in the sleep disruption seen in AD. To understand the relationship between sleep and AD it is necessary to understand the role of $A\beta$ and the role of tau in sleep regulation in the brain.



Biography

Wahid Rashidzada has completed his MD from Fatima University School of Medicine in the Philippines and also completed Neurology Specialty from New York College of Medicine and Sleep Medicine Fellowship from University of Kansas City. He is clinical assistant Professor of Sleep Medicine and Neurology at Stony Brook Southampton Hospital, USA.

rashidzadam2002@yahoo.com

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