

Review Article

Melatonin Levels in Alzheimer Disease

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Abstract

Introduction: Alzheimer's disease is an age-related neurodegenerative disorder with progressive loss of cognitive function and other manifestations in the central nervous system. It has been found that 45% of patients exhibit sleep disorders.

Purpose: This study aims to describe the role and effects of melatonin levels in Alzheimer's disease.

Methods: In a literature search in the electronic database "PubMed" and "Google Scholar" via search engine. There was a time restriction, the last fourteen years. Exclusion criteria of articles were articles related to the effect of melatonin in other neurodegenerative disorders. Finally, 65 articles were included in the study.

Results: The production of melatonin depends on circadian rhythm and affects the duration and quality of sleep. It is known that the process of aging cause a reduction of melatonin and that endogenous secretion is reduced in people with Alzheimer's disease. Degenerative changes in the pineal gland can cause deregulation in the secretion of melatonin in the early stages of Alzheimer, resulting in the additional presence of disturbances in the sleep cycle. At the same time, lack of sleep can cause chronic accumulation of beta amyloid peptide, which is involved in the pathogenesis of the disease. So, sleep and neurodegenerative disorder exhibit a bidirectional relationship, having a significant impact on the diagnosis and treatment of Alzheimer's disease.

Conclusions: Data from clinical studies suggest that melatonin supplements improve sleep quality and retard the progression of cognitive impairment in patients with Alzheimer.

Key words: Alzheimer disease, melatonin, sleep disorders, Alzheimer's treatment, beta amyloid, exercise in Alzheimer disease