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The Impact of Sleep Disorders on Neurodegenerative Recovery

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Annotation: This article examines the impact of sleep disorders on neurodegenerative recovery. The clinical data of 71 patients were analyzed within the scope of the study. Attention was focused on the relationship between sleep quality and duration and the process of neuronal recovery. Global and Uzbek contexts of the issue were studied, highlighting the main mechanisms of sleep disorders and their influence on neurodegeneration.

Keywords: sleep disorders, neurodegeneration, recovery process, Alzheimer's disease, Parkinson's disease, clinical analysis.

INTRODUCTION: Sleep disorders significantly affect the functional recovery process of the brain. This condition is linked to neurodegenerative diseases such as Alzheimer's, Parkinson's disease, multiple sclerosis, and others, potentially exacerbating their clinical symptoms. Research in the field of preventing or treating neurodegenerative diseases through sleep restoration is rapidly developing worldwide. In Uzbekistan, interest in this issue is also increasing, but there are no fully established studies available. Therefore, understanding the impact of sleep disorders on neurodegeneration and conducting research in this area is crucial.

AIM AND OBJECTIVES: The aim of the article is to scientifically investigate the relationship between sleep disorders and neurodegenerative recovery and analyze existing experiences in this field. Key objectives:

1. Identify the main mechanisms between sleep disorders and neurodegenerative processes.
2. Study global scientific literature to examine international and regional trends.
3. Analyze the situation in Uzbekistan and develop recommendations.

METHODOLOGY: The following methods will be used in this research:

- Literature analysis: Modern research in scientific databases such as PubMed, Scopus, and Web of Science will be reviewed.
- Statistical data analysis: The dynamics of sleep-related diseases in the world and in Uzbekistan will be analyzed.
- Mechanism study: The mechanisms affecting sleep disorders and neuronal recovery will be discussed. The research covers clinical data from 71 patients, analyzing the impact of sleep disorders on neurodegenerative processes.

RESULTS: International studies indicate that sleep disorders may exacerbate neurodegenerative processes. For example:

- In Alzheimer's disease, poor sleep duration and quality accelerate the accumulation of amyloid plaques (Holth et al., 2019).
- In Parkinson's disease, disturbances in sleep phases lead to a reduction in dopamine transmission.
- 50% of patients with multiple sclerosis experience sleep disorders, significantly affecting their quality of life. In Uzbekistan, specific statistical data on sleep disorders is limited, but based on general trends, it is possible to hypothesize that sleep issues are affecting work capacity and cognitive functions. The study analyzes data from 71 patients to evaluate the quality of sleep and its impact on neurodegeneration.

DISCUSSION: The primary mechanisms through which sleep disorders influence neurodegenerative recovery include:

1. Disruption of synaptic plasticity: Insufficient sleep phases make the formation of new synapses difficult.
2. Impaired activity of the glymphatic system: During sleep, toxic substances accumulated in the brain are eliminated. This process is ineffective when sleep is disturbed.
3. Decreased levels of neurotrophic factors: Factors essential for neuronal recovery during sleep are reduced.

CONCLUSION AND RECOMMENDATIONS: Understanding the relationship between sleep disorders and neurodegenerative recovery is crucial for improving the prevention and treatment methods for these diseases in the future. In this regard, the following recommendations are made:

1. Develop screening programs for early detection and treatment of sleep disorders.
2. Provide medical counseling on the importance of sleep for patients suffering from neurodegenerative diseases.
3. Collect statistical data on sleep problems in Uzbekistan and conduct further research.

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