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The interplay between stroke and sleep: some last years insights

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Introduction

Stroke, a leading cause of disability and death worldwide, is intricately linked with sleep. Over the past decade, research has increasingly highlighted the bidirectional relationship between stroke and sleep disorders. In Portugal, the relationship between sleep and stroke has garnered significant attention over the past decade. This article summarizes the latest scientific findings on how sleep impacts stroke risk, recovery, and overall health outcomes in the Portuguese population.

Sleep as a risk factor for stroke

Sleep disorders, particularly sleep apnea, have been identified as significant risk factors for stroke. Sleep apnea, characterized by repeated interruptions in breathing during sleep, can stroke risk. A comprehensive review of 185 studies found that individuals with sleep apnea had a higher prevalence of stroke compared to the general population.[1]

In Portugal, studies have shown that individuals with sleep apnea are at a higher risk of developing cardiovascular issues, which can lead to stroke. A study conducted in the North of Portugal highlighted the prevalence of sleep apnea among stroke patients and its association with increased stroke risk.[2]

Prevalence of sleep disorders

Sleep disorders are a significant public health concern in Portugal. A comprehensive study (Antunes, A. R., et al., 2023) involving 2.087 participants revealed that:

i. **21.37%** of the participants have a high risk of developing obstructive sleep apnea (OSA).

ii. **39.29%** experience excessive daytime sleepiness.

iii. **61.38%** report poor sleep quality.

These statistics highlight the widespread nature of sleep disorders in the Portuguese population and underscore the need for increased awareness and intervention.

Post-stroke sleep disorders

Stroke survivors often experience a range of sleep disorders, including insomnia, restless legs syndrome, and periodic limb movements. These disorders not only affect the quality of life but also have implications for stroke recovery and recurrence. Recently, a study published in the *European Journal of Medical Research*[3] found that sleep disorders were associated with increased odds of post-stroke depression and cardiovascular mortality. Specially, short sleep duration was linked to higher rates of post-stroke depression.

These disorders not only affect the quality of life. Teixeira F et al.[2] found that informal caregivers of stroke survivors reported significant declines in sleep duration, satisfaction, and quality 18 months post-stroke. This decline in sleep quality was linked to socioeconomic factors, emphasizing the need for targeted interventions to support both stroke survivors and their caregivers.

Impact on recovery and mortality

According to Chen W[3] the quality and duration of sleep play crucial roles in the recovery process post-stroke. Poor sleep can exacerbate cognitive deficits, reduce physical rehabilitation outcomes, and increase the risk of recurrent strokes. Research indicates that achieving normal sleep duration and addressing sleep disorders can significantly improve recovery outcomes and reduce mortality rates among stroke survivors.[4,5]

A study published by Ho LY et al.[6] found that poor sleep quality was a significant predictor of fatigue in chronic stroke survivors, which in turn affected their participation in rehabilitation and daily activities.

Mechanisms linking sleep and stroke

Brunetti V et al.[7] discuss the mechanisms underlying the relationship between sleep and stroke. They consider it complex and multifaceted. Sleep disorders can lead to systemic inflammation, oxidative stress, and endothelial dysfunction, all of which contribute to cerebrovascular damage. Conversely, stroke can disrupt the brain regions responsible for regulating sleep, leading to various sleep disorders.

Conclusion

The past decade has seen significant advancements in our understanding of the relationship between stroke and sleep. Addressing sleep disorders in stroke patients is crucial for improving their quality of life and reducing the risk of recurrent strokes. Future research should continue to explore the underlying mechanisms and develop targeted education to health interventions to manage sleep disorders in this vulnerable population. Our next step is to go further with a comprehensive approach concerning the relationship between stroke and sleep and organize interventions addressing sleep disorders as part of stroke prevention and health education strategies in Portugal. Increased awareness, better screening, and targeted interventions are essential to improve public health outcomes, and a better life.

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None.

Conflicts of interest

The author declares that there is no conflicts of interest.

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