

Abstract Submission No.: A-1049**Exploring the Effectiveness of Exogenous Melatonin as a Therapy to Enhance Sleep Quality in Hemodialysis Patients: A Systematic Review**

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Objectives : End-stage renal disease (ESRD) can lead to circadian rhythm disturbances such as sleep and wakefulness problems, which is associated with reduced quality of life and higher mortality rates. Between 50%-80% patients on hemodialysis experience sleep disorders. While our bodies naturally produce melatonin for sleep, exogenous melatonin or melatonin taken as a supplement, might play a role in regulating sleep in several ways.

Methods : A systematic literature was performed using pubmed and scopus. Melatonin, sleep, and hemodialysis were used as the search term. A systematic review of published studies was performed with the PRISMA statement. Studies which had randomized controlled trials (RCT) as design study were included.

Results : Among the 77 studies identified, three RCTs were included in this systematic review. The Pittsburgh Sleep Quality Index (PSQI) questionnaire was used to evaluate the overall sleep quality and seven subcategories. Higher scores in the PSQI (≥ 5) indicated more acute sleep disturbances. All the RCTs showed a significant decrease in PSQI score in the melatonin group ($p < 0,01$) compared to placebo, indicating improvement in overall sleep quality in hemodialysis patients with exogenous melatonin administration. There were also significant reductions in sleep latency and sleep disturbance scores in the melatonin group. One study also showed that there was a significant decrease in the total score of the ISI (Insomnia Severity Index) in the melatonin group. Whereas, there was no significant difference in Epworth Sleepiness Scale (ESS) scores, a tool used to assess excessive daytime sleepiness, in the melatonin group compared to the placebo group.

Conclusions : The findings suggest melatonin can be used as a safe and effective treatment to improve sleep quality in hemodialysis patients. The limitation of this systematic review is the dependence on subjective sleep assessment for all the RCTs; no objective sleep assessment such as actigraphy or polysomnography was yet performed.

PRISMA 2020 Melatonin.png

