Tips from Other Journals

Improving Insomnia with Melatonin, Magnesium, and Zinc

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Background: Insomnia affects up to 50 percent of older adults, and has been correlated with morbidity and mortality in this population, as well as poorer quality of life. Melatonin supplementation may improve total sleep time because of its effect on regulating the sleep-wake cycle. This may be particularly useful in older patients, because of an age-related decline in melatonin production and because melatonin levels are lower in adults with insomnia than in those who report getting good sleep. Other micronutrients such as zinc and magnesium may also play a role in facilitating sleep because they are important in the endogenous synthesis of melatonin. Rondanelli and colleagues conducted a double-blind, placebo-controlled clinical trial to determine whether melatonin, magnesium, and zinc would improve symptoms of insomnia among older adults living in a long-term care facility.

The Study: The authors recruited 43 adults 70 years and older living in a long-term care facility who had been diagnosed with primary insomnia, defined as difficulty in initiating or maintaining sleep for at least one month with no sign of any other contributing sleep or mental disorder, drug use, or other general medical condition. Exclusion criteria included anxiety, depression, psychosis, or the use of beta blockers or other medications that affect the central nervous system, such as benzodiazepines and other sleep-inducing agents.

Patients were randomized to treatment with placebo or a combination of melatonin (5 mg), magnesium (225 mg), and zinc (11.25 mg) administered one hour before bedtime daily for eight weeks. The primary outcome was sleep quality as defined by the Pittsburgh Sleep Quality Index (PSQI), which was measured at baseline and again at the end of the study. Secondary outcomes were changes in sleep quality and daily activity according to other questionnaires, including the Leeds Sleep Evaluation Questionnaire (LSEQ).

Results: The treatment group reported more significantly improved sleep quality (mean PSQI improvement of –7.1 points from baseline versus –0.3 points for the placebo group; $P < .001$). Significantly more patients in the treatment group had a final PSQI score of 5 or less, a cutoff that is 89.6 percent sensitive and 86.5 percent specific in differentiating good sleepers from poor sleepers (59 percent in the treatment group versus 14 percent in the placebo group; $P = .004$).

The treatment group also had significantly better scores in all four components of the LSEQ, including getting to sleep, sleep quality, hangover on awakening from sleep, and alertness the following morning. No differences were noted in daytime sleepiness between groups.

Conclusion: Sleep quality was significantly improved among older adults living in a long-term care facility who received a nightly dose of melatonin, magnesium, and zinc, as was morning alertness. The authors suggest that this may also be a helpful sleep aid for the general older population.

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SOURCE

Rondanelli M, et al. The effect of melatonin, magnesium, and zinc on primary insomnia in long-term care facility residents in Italy: a double-blind, placebo-controlled clinical trial. *J Am Geriatr Soc*. January 2011;59(1):82–90.