

# Behavioral Therapy Is Superior to Zopiclone for Insomnia in Older Adults

*Sivertsen B, Omvik S, Pallesen S, et al. Cognitive behavioral therapy vs zopiclone for treatment of chronic primary insomnia in older adults: a randomized controlled trial. JAMA 2006;295:2851-8.*

## Study Overview

**Objective.** To assess the short- and long-term clinical efficacy of cognitive behavioral therapy (CBT) compared with zopiclone (a nonbenzodiazepine sleep medication) in older adults with chronic primary insomnia.

**Design.** Randomized, double-blind, placebo-controlled trial with a modified intention-to-treat analysis.

**Setting and participants.** Participants were recruited from a single, university-based outpatient clinic in Norway. Individuals were included if they were aged  $\geq 55$  years and had a diagnosis of insomnia based on criteria from the DSM-IV, duration of insomnia  $\geq 3$  months, and impaired daytime functioning. Individuals were excluded if they used hypnotic medications within the 4 weeks prior to the study; used an antidepressant or an antipsychotic; had depression or other severe mental disorder, cognitive impairment, evidence of dementia, or a diagnosis of sleep apnea or periodic limb movements; were unable or unwilling to discontinue sleep medications; or worked night shifts.

**Intervention.** Participants were randomized to either 6 weeks of treatment with CBT or zopiclone 7.5 mg at bedtime or placebo. Participants underwent 2 consecutive nights of polysomnography (PSG) at baseline and a single night of PSG at 6 weeks and 6 months. Each CBT participant attended

6 weekly 50-minute treatment sessions. CBT sessions were led by trained clinical psychologists and addressed sleep hygiene (ie, the effect of lifestyle habits and environmental factors on sleeping), sleep restriction (a rigorous schedule of bedtimes and rising times), stimulus control (staying in the bedroom only when asleep or sleepy), cognitive therapy (identifying perceptions and concerns regarding sleep that might impact sleep), and progressive relaxation techniques (recognizing and controlling muscle tension). Patients allocated to zopiclone or placebo received no counseling regarding insomnia.

**Main outcome measures.** Total wake time, total sleep time, sleep efficiency, and slow-wave sleep. Outcome measures were collected at baseline and 6 weeks for all patients and at 6 months for the CBT and the zopiclone groups. Ambulant PSG, which included electroencephalographic, electromyographic, and electrooculographic monitoring, was used to assess the study outcomes. Total wake time was calculated as a summary of sleep-onset latency, wake time after sleep onset, and early morning awakenings. Sleep efficiency was calculated as the total time spent asleep divided by the actual time spent in bed.

**Main results.** Of 48 participants, 18 were randomized to CBT, 18 to zopiclone, and 12 to placebo. Two participants in the zopiclone arm withdrew immediately after randomization

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and were not included in the modified intention-to-treat analysis. Baseline characteristics were similar between the groups except that more CBT-treated patients were previously treated for insomnia compared with zopiclone- and placebo-treated patients (66.7% versus 25.0% versus 33.3%, respectively;  $P = 0.04$ ). Additionally, more placebo-treated patients were taking other medications compared with CBT- and zopiclone-treated patients (75% versus 33.3% versus 25%;  $P = 0.02$ ). At 6 weeks, the CBT group had a 52% reduction in total wake time compared with 4% and 16% reductions in the zopiclone and placebo groups ( $P < 0.001$ ). At 6-month follow-up, improvements in total wake time were significantly better in the CBT group compared with zopiclone ( $P = 0.001$ ). No statistically significant differences between the treatment groups were found in total sleep time at either 6-week or 6-month follow-up. Sleep efficiency was significantly higher at 6 weeks in the CBT group compared with placebo ( $P = 0.004$ ) but was not significantly higher when CBT was compared with zopiclone ( $P = 0.09$ ). At 6 months, sleep efficiency was significantly better in the CBT group compared with the zopiclone group ( $P = 0.008$ ). Slow-wave sleep also significantly improved in the CBT group compared with the zopiclone group at 6 weeks ( $P = 0.002$ ) and 6 months ( $P = 0.001$ ).

**Conclusion.** CBT appears superior to zopiclone for both short- and long-term treatment of chronic primary insomnia in older adults.

### Commentary

Insomnia is a common problem in primary care. The first-line treatment strategy has often been pharmacologic management; however, many of the sedative-hypnotics indicated for insomnia have adverse side effects and addiction potential [1]. Additionally, a recent meta-analysis suggested that sedative hypnotics may not be efficacious for the treatment of insomnia in older adults [2]. CBT is another treatment strategy for insomnia, but high-quality data evaluating its effectiveness are limited [3]. Sivertsen et al's study is a well-designed randomized, double-blind, placebo-controlled trial that used formal ambulant clinical PSG to determine the effects of CBT, a sedative hypnotic, or placebo on several sleep-related outcomes. The results suggested that CBT is superior both in the short- and long-term

to zopiclone for primary insomnia in older adults. Of note, zopiclone is not commercially available in the United States, but the active stereoisomer of zopiclone—eszopiclone—has been available since 1995.

Although the results of this study are important, several limitations exist. Of primary concern is that after randomization the groups were not completely comparable. The CBT group was much more likely to have undergone previous insomnia treatment, and it is unknown whether this may have impacted overall response to CBT. Additionally, the placebo group was much more likely to be taking other medications, which may have had an influence on sleep habits. This study may not be generalizable to all patients with insomnia (the study only evaluated those with chronic insomnia) and practice. Some providers may not have access to the level of psychologic support included in this study, and a primary care provider is unlikely to be able to deliver the same intervention. Nevertheless, the study is important for providers in its primary message that insomnia can be successfully treated through nonpharmacologic measures.

### Applications for Clinical Practice

Insomnia is a common and potentially debilitating condition in the elderly and can be challenging to treat in the primary care setting. CBT appears to be superior to zopiclone in the treatment of primary chronic insomnia in older adults, and the effects of CBT appear to be sustained for up to 6 months. Providers who have access to structured CBT programs designed for insomnia treatment should consider this strategy as an effective alternative to pharmacologic management.

—Review by Harvey J. Murff, MD, MPH

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