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## Treatment effects of gabapentin for primary insomnia.

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#### Abstract

**OBJECTIVES:** The prevalence of insomnia is very high in our society. Although pharmacological treatment of insomnia is available, most hypnotics have been shown to alter sleep architecture and have many adverse effects. Gabapentin was originally designed for antiepileptic therapy; however, some studies reported that its use increases slow-wave sleep in healthy volunteers or patients. Our goal was to evaluate the benefits of gabapentin in the treatment of primary insomnia in patients.

**METHODS:** Eighteen patients with primary insomnia participated in the study. They received gabapentin treatment for at least 4 weeks. All patients received polysomnography, a biochemical blood test, and neuropsychological tests before and after the treatment period. All measures were analyzed with Student t test to examine the treatment effects of gabapentin, except that the measures of heart rate variability were analyzed with analysis of variance.

**RESULTS:** Polysomnographic study revealed increased sleep efficiency and slow-wave sleep, decreased wake after sleep onset, and spontaneous arousal index after gabapentin treatment. The biochemical blood test revealed decreased prolactin levels in the morning after treatment. Electroencephalographic power spectral analysis showed increased delta-2 and theta power in sleep stage 1 and decreased sigma activity power in sleep stages N2 and N3 after gabapentin treatment. Heart rate variability analyses also showed a significant increase in normalized high frequency percentage in sleep stages N2 and N3 and low frequency-high frequency ratio in sleep stage N2 after treatment. In addition, neuropsychological tests revealed the elevation of visual motor processing speed after gabapentin treatment.

**CONCLUSIONS:** Gabapentin enhances slow-wave sleep in patients with primary insomnia. It also improves sleep quality by elevating sleep efficiency and decreasing spontaneous arousal. The results suggest that gabapentin may be beneficial in the treatment of primary insomnia.

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