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The effect of memantine on sleep architecture and psychiatric symptoms in patients with Alzheimer's disease.

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Abstract

OBJECTIVE: Behavioural and psychological symptoms of dementia (**BPSD**) are commonly present in patients with Alzheimer's disease (AD). Disturbed sleep quality is also observed in AD patients. However, the effects of **memantine** on sleep architecture have not been investigated. The purpose of this study was to investigate the effects of **memantine** on polysomnography (PSG) variables and **BPSD**.

METHODS: In total, 12 patients with AD (mean age: 79.0±4.1 years old) were enrolled in this study. The following tests were performed: the Neuropsychiatric Inventory for the assessment of **BPSD**, the Mini-Mental State Examination (MMSE) for cognitive function, and PSG for evaluation of sleep architecture. After baseline examinations, patients were treated with **memantine** according to a standard prescription protocol. After being treated with 20 mg/day of **memantine** for 4 weeks, examinations were carried out again.

RESULTS: All subjects completed the trial. The mean MMSE and NPI scores were 22.6±3.4 and 13.8±12.9, respectively. Treatment with **memantine** significantly decreased the NPI score (5.8±4.3, $p<0.01$). There were significant decreases in the scores of subscales for anxiety ($p=0.04$) and irritability/lability ($p=0.04$). PSG demonstrated a longer total sleep time (TST) ($p<0.01$), increases in sleep efficiency ($p<0.01$) and time spent in stage II (% TST, $p=0.02$), and decreases in nocturnal awakening ($p<0.01$), the periodic limb movement index ($p<0.01$), and time spent in stage I (% TST, $p=0.02$).

CONCLUSION: **Memantine** was effective for reducing fragmented sleep and improving **BPSD**, and was well tolerated.