CPAP May Improve Cognition in Alzheimer's

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DENVER — Continuous positive airway pressure improved both excessive daytime sleepiness and—in a particularly encouraging finding—cognitive function in a randomized trial involving Alzheimer's disease patients with obstructive sleep apnea, investigators reported at the annual meeting of the Associated Professional Sleep Societies.

"This is preliminary, but it seems to be quite promising. If in fact we can do anything to at least slow down deterioration of cognition—if not actually improve it—then that might postpone institutionalization, which will save billions of dollars as well as improving quality of life for these patients," observed Sonia Ancoli-Israel, Ph.D., who is professor of psychiatry at the University of California in San Diego.

Sleep-disordered breathing is exceedingly common in Alzheimer's disease patients, she noted.

Various studies have put the prevalence of obstructive sleep apnea (OSA) in patients with dementia at 50%-90%, depending on the criteria used.

Moreover, demented patients with severe OSA have significantly worse dementia than those with mild to moderate OSA and individuals with severe dementia have significantly more sleep-disordered breathing than those with milder dementia.

"Clearly there is some association between how much one can breathe at night and how much dementia one might have. Do I think that sleep apnea causes dementia? No, I don't—but I do think that if someone is already demented and you add hypoxia and disturbed sleep on top of that, it's likely to make the dementia worse," Dr. Ancoli-Israel said.

She reported on 40 noninstitutionalized patients with mild to moderate Alzheimer's disease and OSA who were randomized in double-blind fashion to true continuous positive airway pressure (CPAP) or to a control group given a counterfeit respiratory assistance protocol—"affectionately known as CRAP," she said. After 3 weeks of CRAP, patients in the control group were switched to 3 weeks of CPAP.

Those who were already on CPAP continued on the therapy for an additional 3 weeks. A comprehensive neuropsychological test battery was administered at baseline, at 3 weeks, and after 6 weeks.

The changes are not that different from those that occur when patients are put on cognition-enhancing drugs.

DR. ANCOLI-ISRAEL

The first noteworthy finding, Dr. Ancoli-Israel said, was that these Alzheimer's disease patients—whose mean age was 78 years—tolerated CPAP "reasonably well," using the equipment for an average of 5 hours per night. "That's really not that different from what we see in our clinic patients." The patients' mean respiratory disturbance index, a measure of OSA severity, decreased in the CPAP group from a baseline of 30.4 events per hour to 7.2 after 3 weeks and 4.9 per hour after 6 weeks, she reported.

No significant change was seen in the group using CRAP until 3 weeks after those patients had been switched to the real CPAP. Composite neuropsychological test scores improved significantly after 3 weeks of CPAP; no further improvement was seen during the second 3 weeks on the therapy. There was no improvement in neuropsychological test scores after sham therapy, but a significant gain was documented following the switch to CPAP. "The kinds of changes that we're seeing are actually not that different from the changes one sees when patients are put on cognition-enhancing drugs. So this might be an additional way to treat the patient," she said.

In a separate presentation, Dr. Ancoli-Israel's coinvestigator, Mei Chong, M.D., reported that subjective daytime sleepiness in the study cohort also improved significantly with CPAP therapy.

Mean Epworth Sleepiness Scale scores dropped from a baseline of 9.06 to 6.59 after 3 weeks of CPAP and to 5.61 after 6 weeks.

In contrast, 3 weeks of CRAP produced no significant improvement. ■

References: 1. Goodwin GM, Bowden CL, Calabrese JR, et al. A pooled analysis of 2 placebo-controlled 18-month trials of lamotrigine and lithium maintenance in bipolar I disorder. *J Clin Psychiatry.* 2004;65:432-441. **2.** Calabrese JR, Bowden CL, Sachs G, et al. A placebo-controlled 18-month trial of lamotrigine and lithium maintenance treatment in recently depressed patients with bipolar I disorder. *J Clin Psychiatry.* 2003;64:1013-1024. **3.** Bowden CL, Calabrese JR, Sachs G, et al. A placebo-controlled 18-month trial of lamotrigine and lithium maintenance treatment in recently manic or hypomanic patients with bipolar I disorder. *Arch Gen Psychiatry.* 2003;60:392-400.