Sleep Apnea Treatment Noted as Cardioprotective

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BOSTON — Obstructive sleep apnea is a risk factor for cardiac arrhythmias, and the diagnosis and treatment of this sleep disorder should be considered in terms of cardioprotective benefit, according to Dr. Maria Teresa La Rovere.

In a study that she presented in a poster at the annual meeting of the Heart Rhythm Society, Dr. La Rovere found a significant correlation between oxygen desaturation in obstructive sleep apnea syndrome (OSAS) and bradyarrhythmias, but not tachyarrhythmias.

"We found strong evidence that bradyarrhythmias are related to sleep apnea syndrome—while for tachyarrhythmias, the role of oxygen desaturation is more controversial," Dr. La Rovere said in an interview.

Other factors may contribute to tachyarrhythmias, such as β_2-agonist treatment, which was found to be more common among patients who had tachyarrhythmias, she said.

The study included 300 subjects who were referred for sleep studies because of snoring. OSAS was diagnosed in 248 (83%) of them.

Although there was a trend toward more arrhythmias in the patients with OSAS than in those without OSAS (18% vs. 11%), the difference was not significant, reported Dr. Rovere, a cardiologist at the Fondazione Salvatore Maugeri clinic in Pavia, Italy.

A recently published study showed that OSAS was associated with almost double the risk of stroke or death, even after adjustment for a host of factors.

Patients who had arrhythmias were older than the nonarrhythmic subjects (58 vs. 52 years) and had more profound oxygen desaturation (23% vs. 15% total sleep time spent with less than 90% oxygen saturation).

Although no significant relationship was found between tachyarrhythmias and hypoxemia, bradyarrhythmias were significantly correlated. Patients with bradyarrhythmias had significantly more hypoxemia, compared with nonarrhythmic patients, with an apnea-hypopnea index of 54 vs. 31 and an oxygen saturation nadir of 69% vs. 77%.

Dr. La Rovere said a recently published study that was performed in the general population and that used a stricter definition of OSAS produced similar evidence that people with sleep-disordered breathing have between two and four times the odds of having complex cardiac arrhythmias, compared with those without sleep apnea (Am. J. Respir. Crit. Care Med. 2006;173:910-6).

That study showed that sleep-disordered breathing was associated with four times the odds of atrial fibrillation, three times the odds of nonsustained ventricular tachycardia, and almost twice the odds of complex ventricular ectopy, after adjustment of the data for age, sex, body mass index, and prevalent coronary heart disease.

Another recently published study showed that OSAS was associated with almost double the risk of stroke or death, even after adjustment for age, sex, race, smoking status, alcohol consumption, body mass index, diabetes mellitus, hyperlipidemia, atrial fibrillation, and hypertension (N. Engl. J. Med. 2005;353:2034-41).

Although treatment of OSAS with continuous positive airway pressure (CPAP) is well established for the relief of sleep disturbances and improvement in quality of life, Dr. La Rovere said that physicians should also recognize its value in preventing the development of cardiac arrhythmias.

"The mechanism of breathing disorders also affects cardiac functioning. So in the long term, these subjects may also develop heart failure," she said. "I think there is an increasing awareness."

Dr. La Rovere added that although CPAP not only prevents sleep-related heart rhythm disturbances, but can also correct them, it is advisable to consider a pacemaker for patients whose CPAP compliance is questionable.

"I know the CPAP will correct my patient's arrhythmia, but I do not know if my patient will use the CPAP," Dr. La Rovere said. ■