Treating OSA in Diabetes Could Have Big Payoff

BY SUSAN LONDON

SEATTLE — Treating obstructive sleep apnea in patients with type 2 diabetes could improve glycemic control as much as using common antidiabetic drugs, according to the results of an observational study.

The study of 54 patients with type 2 diabetes indicated that blood glucose levels may be harder to control in those with untreated OSA, Dr. Renee Simon Aronsohn reported at the annual meeting of the Associated Professional Sleep Societies.

Results showed that mean glycosylated hemoglobin (HbA_{1c}) rose significantly from a value of 6.5% in patients without OSA to 8.7% in those with severe OSA, she said. The higher HbA_{1c} values also were significantly related to the number of episodes of oxygen desaturation of 3% or more during REM sleep.

In published reports, the prevalence of polysomnography-proven OSA in type 2 diabetes has ranged from 58% to 86%. "Despite this strikingly high prevalence of disease in patients with type 2 diabetes, the impact of OSA on glucose control in this patient population" has remained unknown, said Dr. Aronsohn, an endocrinology fellow at the University of Chicago.

She and her colleagues enrolled 54 patients seen in outpatient clinics during 2000-2008 who had physician-diagnosed type 2 diabetes and were on stable doses of medication for diabetes and comorbidities. A total of 29 patients (54%) were women, and 29 (54%) were black.

Participants completed a diabetes and quality of life survey, performed wrist actigraphy monitoring for 5 days at home, underwent overnight laboratory polysomnography, and had an HbA_{1c} measurement.

On the basis of their apnea-hypopnea index, 76% of the patients had OSA, which was classified as mild in 35% (score of 5-14), moderate in 26% (15-29), and severe in 15% (30 or greater). Compared with their counterparts without OSA, patients with OSA, on average, were older (60 years vs. 53 years), had a higher body mass index (35 vs. 29 kg/m^2), and had a greater prevalence of diabetic complications (68% vs. 23%). The patients with OSA also had less total sleep time on polysomnography (6.3 hours vs. 7.2 hours), poorer sleep efficiency (81% vs. 90%), and less time spent in REM sleep (20% vs. 27%).

Treating OSA may improve glucose control as much as widely used pharmacologic agents.

DR. ARONSOHN

In a multivariate analysis that adjusted for potential confounders (age, sex, race, BMI, insulin use, duration of diabetes, and total sleep time), mean HbA_{1c} increased significantly across OSA categories, with values of 6.5%, 7.5%, 7.8%, and 8.7% among patients with no, mild, moderate, and severe OSA, respectively.

"It's important to note that the magnitude of the effect sizes we see here are comparable to—if not exceeding—those seen with widely used pharmacologic agents," Dr. Aronsohn commented.

Two other measures of OSA severity were significantly and positively associated with log-transformed HbA_{1c} values: the number of obstructive events in REM sleep and the number of oxygen desaturations of 3% or greater during REM sleep.

Giving a clinical example, she noted that a 100% increase in the number of obstructive events during REM sleep, from the median of 35 to 70 events per night, would result in a predicted increase in median HbA_{1c} from 7.2% to 7.7%, which is clinically significant, she said.

"Our findings suggest that untreated OSA may worsen glucose control and increase the need for more intensive pharmacotherapy," Dr. Aronsohn said. "Conversely, treatment of OSA may improve glucose control comparable to that of widely used pharmacologic agents."

Dr. Aronsohn reported that she had no conflicts of interest associated with the study. ■