

## Sleep Apnea Linked to Carb Craving in Diabetes

Megan Brooks

June 15, 2012 (Boston, Massachusetts) — In a small study of patients visiting a sleep clinic in New Jersey, researchers found that those with type 2 diabetes were at high risk for sleep apnea and that sleep apnea was associated with carbohydrate craving.

"Since the prevalence of sleep apnea among diabetics was high in this study, along with the fact that the risk of carbohydrate craving was also very elevated in this group, primary care physicians as well as endocrinologists need to routinely screen for sleep apnea among type 2 diabetics," Mahmood I. Siddique, DO, from Sleep & Wellness Medical Associates LLC, Hamilton, New Jersey, told *Medscape Medical News*.

He presented the study findings this week at SLEEP 2012: Associated Professional Sleep Societies 26th Annual Meeting.

### Changes in Leptin and Ghrelin

"Studies among the general population have shown that sleep apnea and sleep deprivation may affect carbohydrate craving by hormonal changes in leptin and ghrelin," said Dr. Siddique, associate clinical professor of medicine, Robert Wood Johnson Medical School in New Brunswick, New Jersey.

"The impact of sleep apnea, however, on carbohydrate craving among diabetics has not been extensively studied, especially in a real-world setting," he explained. "Studies have shown that sleep apnea can worsen diabetes but self-reported carbohydrate craving among this group has not been examined."

The study involved 55 adults with a mean age of 62.5 years; 43% were men. The researchers assessed the risk for sleep apnea using the validated Berlin questionnaire, which predicts sleep apnea by incorporating body mass index (BMI), hypertension status, and characterization of snoring and daytime sleepiness. They assessed carbohydrate craving using the Likert scale from 1 (highest) to 5 (lowest).

Fifty-four percent of study participants were diabetic, and 82% of these individuals were at high risk for sleep apnea, scoring 2 to 4 on the Berlin questionnaire. Compared with participants without diabetes, the risk for sleep apnea among patients with diabetes was high (odds ratio [OR], 5; 95% confidence interval [CI], 1.8 - 18.9), the researchers found.

Further, the diabetic patients had almost double the risk for carbohydrate craving as their nondiabetic counterparts (33% vs 14%). The odds of moderate to high carbohydrate craving was more than double in all patients at high risk for sleep apnea (Berlin score, 2 - 4) vs those at low risk (Berlin score, 0 - 1). The odds ratio was 2.27 (95% CI, 0.76 - 6.7).

### "Novel Study"

Clete Kushida, MD, PhD, professor and medical director of the Stanford Sleep Medicine Center in Palo Alto, California, and past president of the American Academy of Sleep Medicine, told *Medscape Medical News*, "This is a fairly novel study in that I don't think carbohydrate craving has been looked at in the context of diabetics and sleep apnea. However, it's a small sample size and requires further study." Dr. Kushida was not involved in the study.

In a conference statement, the study's principal investigator, Anthony Cannon, MD, American Diabetes Association regional president for central and southern Pennsylvania and southern New Jersey, said, "Current national guidelines on the management of diabetes need to consider sleep apnea as an independent risk factor more vigorously."

"The management of patients with diabetes and or metabolic syndrome based solely on pharmacotherapy, exercise and nutritional modifications without taking into account the risk of sleep apnea may not lead to optimal outcomes for patients suffering from these chronic diseases," Dr. Cannon added.

He said, "Clearly, a greater awareness among physicians is needed, as sleep apnea is often undiagnosed by primary care physicians. Public policy can play a key role in the educational awareness of the association between sleep apnea and diabetes among both physicians and patients."

*The study authors and Dr. Kushida have disclosed no relevant financial relationships.*

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