Obstructive sleep apnea may worsen diabetes

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Obstructive Sleep Apnea (OSA) adversely affects glucose control in patients with type 2 diabetes, according to a study conducted by researchers at the University of Chicago.

The study "demonstrates for the first time that there is a clear, graded, inverse relationship between OSA severity and glucose control in patients with type 2 diabetes," wrote lead author, Renee S. Aronsohn, M.D., instructor of medicine at the University of Chicago.

The study also confirmed other reports that undiagnosed OSA is very common among patients with type 2 diabetes, indicating that it is largely unrecognized additional medical risk factor in these patients.

The findings have been published online ahead of print publication in the American Thoracic Society's *American Journal of Respiratory and Critical Care Medicine*.

Dr. Aronsohn and colleagues consecutively recruited patients with type 2 diabetes from outpatient clinics to participate in the study. The participants were interviewed to assess their diabetes history, medical history and medications, and level of physical activity. Height and weight measurements were also taken, and each participant's sleep/wake cycles were monitored for five days using wrist actigraphy and self-reported sleep logs. Finally, participants underwent an overnight polysomnography test for OSA , and glucose control was assessed by obtaining a blood sample for hemoglobin A1c (HbA1c) measurement, the main clinical marker of glycemic control in diabetes

In total, 60 patients were included in the study's final analysis. More than three-quarters (77 percent) of participants had OSA, but only five had been previously evaluated for the disease, and none were undergoing treatment. Of the study sample, 38 percent (23) were classified as having mild OSA, 25 percent (15) had moderate OSA and the 13 percent (8) had severe OSA.

The researchers found that more severe OSA was associated with poorer glucose control, implying a role more severe diabetes with potentially more complications. Relative to patients without OSA, the presence of mild, moderate or severe OSA significantly increased mean adjusted HbA1c values by 1.49 percent, 1.93 percent, and 3.69 percent respectively. These effect sizes are comparable to those of widely used hypoglycemic medications, meaning that having OSA may negate the beneficial effects of anti-diabetic drugs.

"Our findings have important clinical implications as they support the hypothesis that reducing the severity of OSA may improve glycemic control," said Dr. Aronsohn. "Thus effective treatment of OSA may represent a novel and non-pharmacologic intervention in the management of type 2 diabetes."

"Physicians who manage patients with type 2 diabetes should screen their patients for OSA," commented John Heffner, M.D., past president of the ATS. "At least 80 percent of their patients, if properly screened and studied, will be found to have OSA, which is a treatable condition. Treating their breathing problem might improve their glycemic control and long-term complications from diabetes."

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