Apnea Linked to Retinopathy and Neuropathy

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SAN DIEGO – Obstructive sleep apnea in patients with type 2 diabetes predicted a three- to fourfold higher risk for diabetic peripheral neuropathy or sight-threatening retinopathy, separate analyses have found.

The results suggest that obstructive sleep apnea may play a role in the development of peripheral neuropathy and sight-threatening retinopathy in people with diabetes, Dr. Abd Tahrani and his associates reported at the meeting. Ongoing studies are exploring possible mechanisms involved.

Further study is warranted on the possibility that treating obstructive sleep apnea might affect the development or progression of retinopathy or neuropathy, added Dr. Tahrani of the University of Birmingham (England), where he is a research fellow for the U.K. National Institute for Health Research.

The prospective studies recruited random patients from a hospital-based, outpatient diabetes clinic in the United Kingdom. Subjects were excluded if they had a known respiratory disorder, including obstructive sleep apnea. Patients had a mean age of 59 years and a mean 11-year history of diabetes, and 48% were white. They underwent one night of home-based multichannel respiratory monitoring and were considered to have obstructive sleep apnea if they had an apnea-hypopnea index of at least 5 events per hour.

In 224 patients who also were assessed for sight-threatening retinopathy, 63% had obstructive sleep apnea and 38% had sight-threatening retinopathy. Patients with obstructive sleep apnea were significantly more likely to have sight-threatening retinopathy (48%) than were patients without obstructive sleep apnea (20%).

The study defined sight-threatening retinopathy as the presence of preproliferative or proliferative retinopathy, maculopathy, or the need for laser treatment.

After adjustment for possible confounders, patients with obstructive sleep apnea were 3.6 times more likely to have sight-threatening retinopathy, 5 times more likely to have advanced diabetic retinopathy, and 4.4 times more likely to have maculopathy than were patients without obstructive sleep apnea.

In a separate study by the same researchers of 231 patients assessed for obstructive sleep apnea and peripheral neuropathy, 65% had obstructive sleep apnea and 45% had diabetic peripheral neuropathy. Patients with obstructive sleep apnea reported more neuropathic symptoms. Among patients with obstructive sleep apnea, 60% had diabetic peripheral neuropathy, compared with 27% of patients without sleep apnea.

Obstructive sleep apnea conferred a significant threefold higher risk for peripheral neuropathy after adjustment for potentially confounding variables, Dr. Tahrani reported. The severity of peripheral neuropathy correlated with the severity of obstructive sleep apnea.

Obstructive sleep apnea was prevalent in 75% and 52% of white and South Asian patients, respectively. Likewise, diabetic peripheral neuropathy was more prevalent in whites (56% vs. 40%). Both differences were significant.

The lower prevalence of obstructive sleep apnea in the South Asian patients might be one reason for the lower prevalence of diabetic peripheral neuropathy, the investigators suggested. ■

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Major Finding: In adults with diabetes, the presence of obstructive sleep apnea predicted a 3.6-fold greater risk for sight-threatening retinopathy and a threefold greater risk for diabetic peripheral neuropathy, compared with patients without obstructive sleep apnea.

Data Source: Two separate prospective, observational cross-sectional studies of 224 patients in the retinopathy study and 231 patients in the neuropathy study who were recruited from a hospital-based, outpatient diabetes clinic.

Disclosures: Dr. Tahrani reported having no conflicts of interest.