Obstructive Sleep Apnea and Type 2 Diabetes—Examining the Link

By: Valerie Lauer
MD News
Thursday, November 14, 2013

A growing body of research explores the relationship between obstructive sleep apnea (OSA) and Type 2 diabetes, exposing not only common risk factors but also a connection that could help primary care physicians identify and treat OSA as an insulin-impacting comorbidity.

Though the connection between Type 2 diabetes and OSA is not fully understood, some small-scale studies, such as one published in October 2012 by University of Chicago researchers, suggest restricted or frequently interrupted sleep can cause lipocytes and fat cells to become more insulin resistant, a precursor of Type 2 diabetes.

"The main thing with treatment of diabetes is to minimize the effects of comorbid conditions," says Alvah R. Cass, MD, SM, Professor of Family Medicine with The University of Texas Medical Branch. "OSA appears to be emerging as one of those modifiable conditions, and if we were to pay attention to it, recognize it and treat it, we might have better outcomes associated with diabetes, as well as OSA."

The Right Questions

Dr. Cass is the main author of a study initiated by W. Jerome Alonso, MD, that appeared in the July-August 2013 issue of the journal Family Medicine. The study used several low-cost methods, most notably the Berlin Questionnaire, to assess the OSA risk of 297 patients with Type 2 diabetes from three broad ethnic groups.

Despite the prevalence of OSA — an estimated 12 million adults in the United States have the condition — and its shared risk factors with Type 2 diabetes, only 37 participants had been diagnosed with OSA prior to joining the study. After answering the Berlin Questionnaire, almost half of the remaining participants were found to be at high risk for OSA.

"We demonstrated that using a simple instrument, you can identify a fairly large number of people at risk," Dr. Cass says. "Clinical studies indicate that treating OSA can reduce insulin resistance and promote better control of blood sugar. There is also evidence that treatment of OSA may improve other significant risk factors for cardiovascular disease, [as it can lead to] better control of hypertension and improvement in lipid profiles. Many persons treated for OSA report a much better quality of life."

The Road Ahead

Though it may serve as an easy-to-use starting point for discussing OSA risk, the Berlin Questionnaire does not diagnose sleep apnea. A polysomnography sleep study is necessary to confirm it.

Likewise, there is much left to discover about the relationship between Type 2 diabetes and OSA. The topic is gaining traction — with much of the research into the connection having occurred in the past three years — and while correlation has been at least partially established, the exact causal relationship is still in question.