Weight loss improves SBD and metabolic dysregulation in obese children

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Weight loss improved both metabolic parameters and sleep-disordered breathing (SDB) in obese children in a new study from researchers in Belgium, confirming links between metabolic dysregulation, SDB and obesity.

"SDB is highly prevalent in childhood obesity, and may be a risk factor for the metabolic syndrome. In our population of 224 obese children and adolescents, 30% had SDB, which was significantly correlated with metabolic parameters, including aspartate aminotransferase (ASAT), alanine aminotransferase (ALAT) and HDL cholesterol at baseline," said Stijn Verhulst, MD, MSc, PhD, coordinator of the pediatric sleep lab at the Antwerp University Hospital, Belgium. "After weight loss, all metabolic parameters improved, and just 24% of the study group had residual SDB."

The results will be presented at the ATS 2012 International Conference in San Francisco.

Median age of the children in the study was 15.5 years (range 10.1-18.0). Participants underwent baseline sleep screening and those with diagnosed SDB underwent additional sleep screening four-six months after weight loss treatment. A fasting blood assay was performed at baseline and at four-six months.

Mean BMI at baseline was 36.4 kg/m2. After a six-month weight loss program that incorporated diet, increased physical activity and

psychological support, mean BMI was reduced to 29.2 kg/m2. ASAT improved after weight loss in parallel with an improvement in oxygen saturation during sleep, while HDL-cholesterol mainly improved with lowering BMI.

"The association between SDB and metabolic parameters in children remains controversial," said Dr. Verhulst. "This study confirmed the independent effect of nocturnal hypoxia on HDL-cholesterol and liver enzyme levels in morbidly obese teenagers with SDB at baseline. We also confirmed that weight loss has a high success percentage in the treatment of SDB in obese teenagers. Furthermore, both weight loss and the consequent improvement in SDB both drive improvements in metabolic dysregulation."

"Because of the high dropout rate after six months and the relatively limited number of subjects with residual sleep apnea, these findings need to be confirmed in a larger study," Dr. Verhulst concluded. "Furthermore, it remains important to study the mechanisms linking SDB with these metabolic parameters in obese teens and to study the long-term effects of SDB on future metabolic and cardiovascular morbidity."

More information: "Sleep-Disordered Breathing And Metabolic Dysregulation In Obese Children Before And After Weight Loss" (Session D18, Wednesday, May 23, Room 3020-3022, Moscone Center; Abstract 30317)

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metabolic-dysregulation.html