

Obstructive sleep apnoea in obese adolescents and cardiometabolic risk markers.

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Obstructive sleep apnoea in obese adolescents and cardiometabolic risk markers.

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Source

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Abstract

WHAT IS ALREADY KNOWN ABOUT THIS SUBJECT:

In paediatric patients, obstructive sleep apnoea is associated with adiposity, especially visceral adiposity. In adults, obstructive sleep apnoea is also associated with a higher prevalence of cardiovascular disease and type 2 diabetes. There are limited and conflicting paediatric studies examining the association between obstructive sleep apnoea and biomarkers of risk for cardiovascular disease and type 2 diabetes in youth.

WHAT THIS STUDY ADDS:

Obstructive sleep apnoea is linked with greater cardiometabolic risk markers in obese adolescents. Fasting insulin and homeostasis model assessment-insulin resistance may be especially linked with obstructive sleep apnoea among obese male Hispanic adolescents. The relationship between obstructive sleep apnoea and cardiometabolic abnormalities in obese adolescents should be considered when evaluating patients found to have obstructive sleep apnoea.

BACKGROUND:

Paediatric studies examining the association between obstructive sleep apnoea (OSA) and insulin sensitivity/cardiometabolic risk are limited and conflicting.

OBJECTIVE:

This study aims to determine if cardiometabolic risk markers are increased among obese youth with obstructive sleep apnoea as compared with their equally obese peers without OSA.

METHODS:

We performed a retrospective analysis of 96 patients (age 14.2 ± 1.4 years) who underwent polysomnography for suspected OSA. Fasting lipids, glucose, insulin and haemoglobin A1c (HbA1c) were performed as part of routine clinical evaluation. Patients were categorized into two groups by degree of OSA as measured by the apnoea-hypopnoea index (AHI): none or mild OSA (AHI < 5) and moderate or severe OSA (AHI \geq 5).

RESULTS:

Despite the similar degrees of obesity, patients with moderate or severe OSA had higher fasting insulin ($P = 0.037$) and homeostasis model assessment-insulin resistance (HOMA-IR [$P = 0.0497$]) as compared with those with mild or no OSA. After controlling for body mass index, there was a positive association between the AHI and log HOMA-IR ($P = 0.005$). There was a

positive relationship between arousals plus awakenings during the polysomnography and fasting triglycerides.

CONCLUSIONS:

OSA is linked with greater cardiometabolic risk markers in obese youth.

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KEYWORDS:

Apnoea, insulin sensitivity, obesity, sleep-disordered breathing

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