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Obesity rather than severity of sleep-disordered breathing as the major determinant of insulin resistance and altered lipidemia in snoring children.

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OBJECTIVE: Sleep-disordered breathing (SDB) is associated with insulin resistance and dyslipidemia in adults and in obese children. However, the prevalence of such metabolic abnormalities among snoring children is unknown. This study was done to prospectively assess the relative contribution of SDB and obesity to metabolic disturbances in a large cohort of snoring children. METHODS: Measurements of fasting serum glucose, insulin, and lipids were obtained after polysomnographic evaluation in 116 snoring children and in 19 control subjects. Insulin resistance was assessed using the insulin/glucose ratio (I/G ratio) and homeostasis model assessment (HOMA). RESULTS: A total of 135 children (79 boys; mean age: 8.9 +/- 3.5 years) were studied. Sixty-four children had moderate to severe SDB (AHI = 5 per hour of total sleep time [TST]), 52 had mild SDB (AHI = 1 but <5 per hour of TST), and 19 were control subjects (AHI <1 per hour of TST). Seventy of these children were obese. No significant correlations were found between AHI, lowest arterial oxygen saturation, or arousal index and serum insulin, serum glucose, I/G ratio, HOMA, or serum lipids for either the whole group or the obese children only. However, significant positive correlations were found between I/G ratio and relative BMI (relBMI; r = 0.58), HOMA and relBMI (r = 0.52), triglycerides and relBMI (r = 0.30), and high-density lipoprotein and relBMI (r = 0.50). No significant differences were found in relBMI, I/G ratio, and lipid levels between boys and girls. CONCLUSIONS: Among children with suspected SDB, insulin resistance and dyslipidemia seem to be determined primarily by the degree of body adiposity rather than by the severity of SDB.

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