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Reduced flow-mediated vasodilation of brachial artery in children with primary snoring.

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Abstract

BACKGROUND: Sleep disordered breathing, especially obstructive sleep apnea, is associated with endothelial dysfunction in both adults and children. However, the role of primary snoring (PS) on endothelial function has not been investigated. This study aimed to examine flow-mediated vasodilation (FMD) in both normal weight and overweight children with PS.

METHODS: Children aged 6-18 years with habitual snoring were recruited from our sleep disorder clinic. Non-snoring controls were recruited from participants of a community growth survey. All subjects underwent polysomnography and FMD evaluation on the same day. Children with body mass index of greater than the 85th percentile of the local reference were defined as overweight. Subjects were divided into groups of normal weight, overweight, non-snorers and PS for comparisons.

RESULTS: Two hundred and one children, of whom 83 were overweight, with a mean ± SD age of 11.3 ± 2.7 years were recruited. Seventy three out of 201 children had PS. Both normal weight (7.9 ± 1.3 vs. 8.5 ± 0.9, p=0.012) and overweight subjects (7.4 ± 1.4 vs. 8.1 ± 1.1, p=0.006) with PS had significantly reduced FMD than the non-snoring controls. Multivariate linear regression model showed that PS was independently associated with reduced FMD in both normal weight (p=0.014) and overweight subgroups (p=0.016) after controlling for obstructive apnea hypopnea index.

CONCLUSIONS: PS in children is associated with reduced FMD, independent of obesity.

KEYWORDS: Children; Endothelial function; Flow-mediated vasodilation; Obesity; Primary snoring

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