Editorial Commentary

Sleep-Disordered Breathing and Blood Pressure in Children

Brent M. Egan

The article by Bixler et al in this edition of Hypertension adds to a growing body of evidence that risk factors associated with abdominal obesity in adults, namely, sleep-disordered breathing (apnea-hypopnea), occur in children as well. Specifically, sleep-disordered breathing appeared to be more strongly associated with waist circumference, a surrogate marker for abdominal obesity, than with body mass index, a more generalized or global obesity marker. Although body mass index in children and youth is strongly related to waist circumference, a more generalized obesity marker. Although body mass index in children and youth is strongly related to prevalent metabolic syndrome, other data show that waist body mass index is as good as, if not better than, body mass index as a predictive factor for metabolic syndrome at early ages. In adults, prevalent and incident sleep-disordered breathing are associated with body mass index,5,6

On a positive note, the prevalence of moderate sleep-disordered breathing in children, which was associated with a major effect on systolic blood pressure of >10 mm Hg, is relatively uncommon at ≈1%. Although mild sleep-disordered breathing was identified in 25% of children, the systolic blood pressure effect was a more modest ≈2 mm Hg. Despite the lesser current blood pressure concern for the 25% of children with mild sleep-disordered breathing, evidence from the Bogalusa Heart Study indicates that children with greater levels of blood pressure and other metabolic syndrome risk factors also have a steeper trajectory of increasing risk factor values over time than children with lesser risk.7 Thus, future studies in children to examine changes in the apnea-hypopnea index, as well as metabolic syndrome risk factors over time, would be of interest.

Also of note in the report by Bixler et al is the observation that snoring and sleep-disordered breathing were related to blood pressure independent of age and waist circumference in multivariate regression modeling. In adults, sleep-disordered breathing is associated with hypertension independently of both body mass index and waist:hip ratio.8 In this regard, it should be noted that waist circumference but not body mass index was included in the multivariate regression in Table 4 of the report. Thus, it is not clear whether the association of sleep-disordered breathing with blood pressure in children is independent of both waist circumference and body mass index. Even without further studies, the current report adds to the weight of evidence that health risks associated with abdominal obesity begin early in life, and primary prevention should begin even earlier.

Disclosures

None.

References


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