

### **Obstructive Sleep Apnea Syndrome and Cardiovascular System in Children**

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**Introduction:** Obstructive Sleep Apnea Syndrome (OSAS) has been shown to be an independent risk factor for cardiovascular disease in adults. However, a few data are known about the effect of OSAS on cardiovascular system in children. The aim of this study is to determine changes on cardiovascular system in children with OSAS.

**Methods:** Twenty seven subjects, without any systematic disease, aged 7 to 14 years (mean age  $10,5 \pm 1,8$  years), referring for evaluation of systematic snoring ( $\geq 4$  nights/week), underwent overnight polysomnography and complete echocardiographic assessment. According to the Apnea Hypopnea Index (AHI) subjects were divided into two groups: A. mild OSAS (AHI= 1-5, n=15), B. moderate-severe OSAS (AHI  $>5$ , n=12). Blood pressure (BP), lipidaemic profile and CRP were measured. The results were compared to those of 13 healthy control subjects matched for age, sex, and body size.

**Results:** There were no significantly differences in age, sex, BMI, lipidaemic profile and systolic BP at rest. Children with OSAS had significantly higher diastolic BP ( $63,7 \pm 7,5$  mm Hg vs  $56,4 \pm 3$  mm Hg,  $p = 0,02$ ) at rest, CRP levels ( $0,46 \pm 0,88$  mg/dl vs  $0,1 \pm 0,3$  mg/dl,  $p = 0,036$ ) and Right Ventricular end-Diastolic dimension (RVDd) ( $16,3 \pm 3,1$  mm vs  $13,1 \pm 3,5$  mm,  $p = 0,05$ ). Left ventricular dimensions (Left Ventricular end-Diastolic dimension – LVDd, Left Ventricular diastolic mass – LVdmass, Left Ventricular Posterior Wall diastolic – LVPWd, IntraVentricular Septum diastolic – IVSd)) were not statistically significant different between the two groups and were within normal limits.

**Conclusion:** The present study demonstrates that young patients with OSAS have early in life changes on cardiovascular system. Plasma CRP levels and diastolic BP were increased among children with OSAS and right ventricular dysfunction was apparent in early life.