

CARDIOVASCULAR COMPLICATIONS OF POLYSOMNOGRAPHIC DIAGNOSED PEDIATRIC OBSTRUCTIVE SLEEP APNEA

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Background: Polysomnography (PSG) is a gold standard test to diagnose obstructive sleep apnea (OSA). Cardiovascular (CVS) complication prevalence in pediatric OSA is still unknown. There has been no standard CVS screening guideline for pediatric OSA.

Objectives: To evaluate the prevalence of CVS complications in pediatric OSA and to sort out its correlation with OSA severity.

Methods: All pediatric patients age 1-15 years who were scheduled to undergo PSG at our institution were enrolled prospectively. Demographic data, cardiothoracic (CT) ratio, 12 leads ECG and echocardiographic parameters were collected. CVS complication prevalence including hypertension, pulmonary arterial hypertension (PAH), ventricular dysfunction and arrhythmia were sorted out. OSA pts were divided into mild-moderate and severe OSA groups.

Results: After exclusion, total of 57 pts were enrolled. 31 pts were in mild to moderate OSA group and 26 pts (45.6%) had severe OSA. Morbid obesity was found in both group ($P = 0.794$). All pts had normal CT ratio from chest film. All were in normal sinus rhythm with normal axis except one with right axis deviation on ECG. 12/57 pts (21.1%) had systemic hypertension and were found more in severe OSA group ($p=0.024$). 9 of 12 pts had morbid obesity ($p=0.006$). Overall prevalence of PAH was 12.3% (7 in 57 pts). PAH was more found in severe OSA group ($n=6$) when compare to mild-moderate OSA group ($n=1$) significantly; $p=0.037$. None of the pts had impaired right or left ventricular systolic function.

Conclusions: Hypertension (21.1%) and PAH (12.3%) were found more significantly in severe OSA patients. Hypertension patients were likely to have morbid obesity. None of patient required cardiac intervention or treatment.

Keywords: Pediatric OSA, cardiovascular complication