

Prevalence and Risk Factors of Rapid Eye Movement-Related Obstructive Sleep Apnea in Children

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Abstract

Background: The prevalence of obstructive sleep apnea in children tends to increase. Sleep stage affects OSA severity which is influenced by many factors.

Objectives: To study the prevalence and risk factors for REM-related OSA in children.

Methods: We conducted a retrospective cross-sectional study of 366 children with OSA confirmed by polysomnography (PSG) performed over a 5-year period. REM-related OSA is defined by an obstructive apnea-hypopnea index (OAHI) in the rapid eye movement (REM) sleep $\geq 2 \times$ OAHI in the non-rapid eye movement (NREM) sleep.

Results: The prevalence of REM-related OSA was 50.3%. Children with REM-related OSA were more female ($P = 0.042$) and had less prevalence of adenotonsillar hypertrophy ($P = 0.043$) compared with other OSA subtypes. PSG parameters showed children with REM-related OSA slept longer in supine position ($P = 0.003$), had shorter duration of NREM1 sleep ($P = 0.018$), lower nadir SpO₂ ($P = 0.005$) and higher oxygen desaturation index 3% (ODI3%) ($P = 0.014$) compared

with other OSA subtypes. Female gender was the significant independent risk factor for REM-related OSA in children.

Conclusions: This study revealed the prevalence of REM-related OSA at 50.3%. Female gender was independent risk factor for REM-related OSA in children.

