Feasibility study of determining a risk assessment model for obstructive sleep apnea in children based on local findings and clinical indicators

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Objective: To test a feasible and reliable model for diagnosing obstructive sleep apnea (OSA) in children, based on clinically relevant parameters, in comparison to a polysomnography.

Methods: A total of 94 children with the suspected underlying OSA were included in the analyses. An association between clinical parameters (modified Mallampati score, tonsil size, adenoid size, age, gender, and body mass index) and apnea-hypopnea index (AHI) obtained following an overnight polysomnography was assessed, and significant variables were incorporated in the logistic regression model. Also, the sensitivity and specificity calculations of the model with the inclusion of ROC curve analysis were performed.

Results: All three local clinical parameters were significantly associated with AHI ($p<0.001$). The most significant correlation with AHI was shown with the modified Mallampati score ($r=0.723$), following with tonsil size ($r=0.673$), and adenoid size ($r=0.502$). The sensitivity of the tested model was 84%, and specificity was 74%.

Conclusion: This study derived a model based on the local clinical findings that significantly overlapped with the results of an overnight polysomnography, in diagnosing OSA in children.

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