

Role of upper airway evaluation in the multidisciplinary management of obstructive sleep apnea in children below 2 years of age.

An Boudewyns¹, Blancke H¹, Platteau C¹, Slosse E¹, Stijn Verhulst¹, Sophie Installe², Jouret Nathalie², and Kim Van Hoorenbeeck¹

¹Universiteit Antwerpen Faculteit Wetenschappen

²Universitair Ziekenhuis Antwerpen

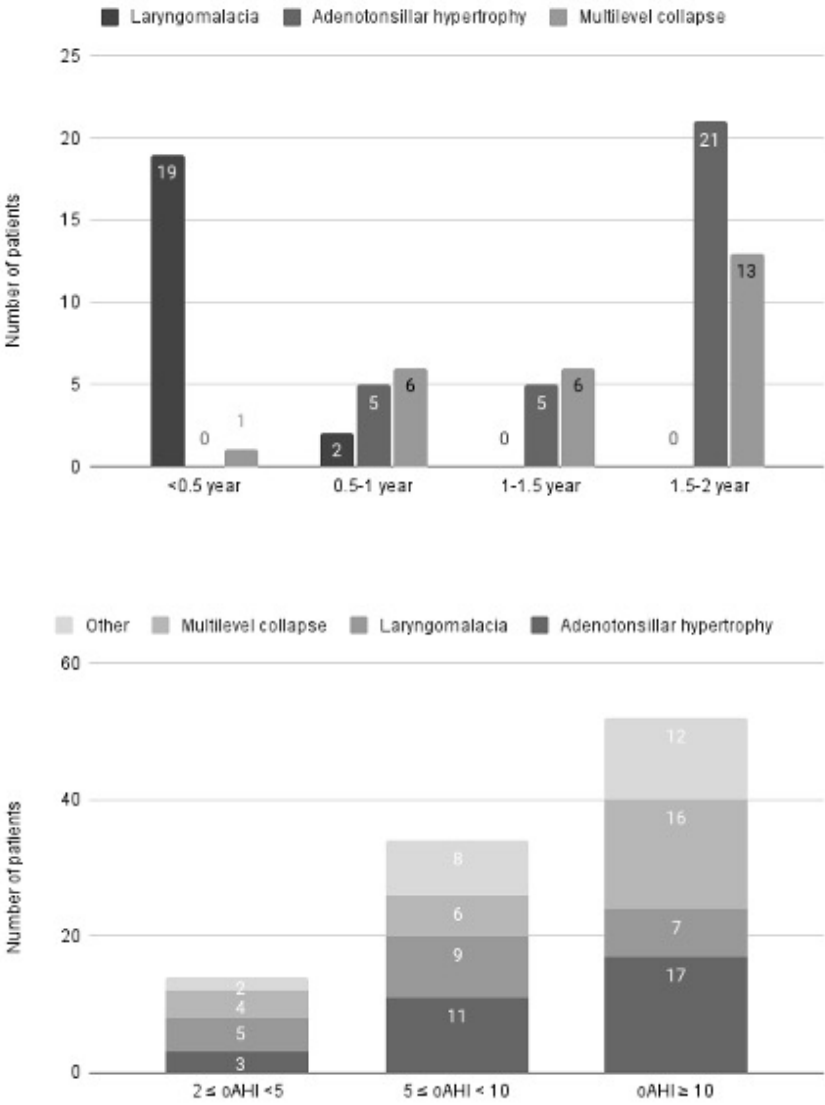
April 23, 2024

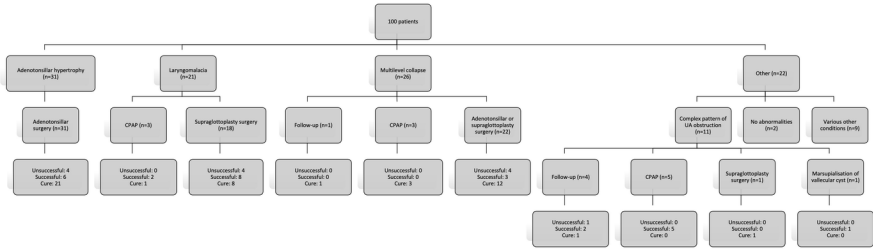
Abstract

Background: Diagnosis and treatment of obstructive sleep apnea (OSA) in infants and young children is challenging because of its clinical heterogeneity and lack of age-specific guidelines. **Aim:** We report the management and treatment outcome of OSA in children below two years of age. Treatment decisions were based upon the pattern of upper airway (UA) obstruction, clinical presentation and OSA severity. **Methods:** Retrospective, non-randomized observational cohort study at a tertiary center. Children with OSA who underwent an UA evaluation (drug-induced sleep endoscopy or direct laryngoscopy) were included. **Results:** The study population comprised 100 patients, 57 boys and 43 girls, with a median age of 0.72 years (range 0.0-2.0) and OSA confirmed by polysomnography. Multilevel UA collapse was present in 26%, (adeno)tonsillar hypertrophy in 31% and 21% had laryngomalacia. Laryngomalacia was more common in children below six months of age and adenotonsillar hypertrophy was observed mainly in children older than 1.5 year of age. Treatment improved OSA severity in the entire study population with a significant reduction in obstructive apnea/hypopnea index from 10.8/h (range 2.1-99.1) to 1.7/h (range 0.0-73.0) ($p<0.001$), an improvement in mean oxygen saturation from 96.9% (range 88.9-98.4) to 97.4% (range 92.3-99.0) ($p<0.001$) and in minimal oxygen saturation from 85.4% (range 37.0-96.0) to 88.8% (range 51.0-95.5) ($p<0.001$). **Conclusion:** Multidisciplinary management of young children with OSA guided by the pattern of UA obstruction and OSA severity, results in favorable treatment outcomes. The pattern of UA obstruction changes in the first two years of life from a dynamic collapse to structural abnormalities.

Hosted file

OSAS_Infants_PedPumonology_versie1.docx available at <https://authorea.com/users/773664/articles/865251-role-of-upper-airway-evaluation-in-the-multidisciplinary-management-of-obstructive-sleep-apnea-in-children-below-2-years-of-age>





Hosted file

OSAS_Infants_Table 2.docx available at <https://authorea.com/users/773664/articles/865251-role-of-upper-airway-evaluation-in-the-multidisciplinary-management-of-obstructive-sleep-apnea-in-children-below-2-years-of-age>

Hosted file

OSAS_Infants_Table1.docx available at <https://authorea.com/users/773664/articles/865251-role-of-upper-airway-evaluation-in-the-multidisciplinary-management-of-obstructive-sleep-apnea-in-children-below-2-years-of-age>