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**Title:** Effect of combined therapy with oral azythromicin and betametasone, and nasal budesonide in children with sleep disordered breathing associated with adenotonsillar hypertrophy and rhinosinusitis

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**Body:** Background: rhinosinusitis is frequent in children with adenotonsillar hypertrophy (ATH) and it increase the obstruction and inflammation of upper airways. Objetives: to evaluate if the treatment with oral antibiotic and steroids plus topic steroid can improve Sleep Disordered Breathing (SDB) in this type of patients. Methods: 25 children with SDB (snoring and apneas confirmed by home video plus nocturnal home oximetry with 2 or more clusters of hypoxemic events) associated with ATH and clinical signs of rhinosinusitis were included. They were treated with 5 days azythromicin + 7 days betametasone + nasal budesonide until a new nocturnal oximetry was performed 3 weeks later. Results: nocturnal symptoms and the median of all the oximetry variables improve after therapy: hypoxemic events index (7.7vs1.6), minimal SaO2tc (80vs84), % of time with SaO2tc≤90% (2.4vs0.4), and media SaO2tc out of events (97vs98); (sign test p≤0.001). When children were grouped according to events index greater improvement was observed in children with highest events index (Index 1-4 improve: -1.2; 5-10: -5.8; ≥11: -14.5). Conclusions: combined therapy improve SDB in children with ATH and rhinosinusitis; studies are needed to assess the persistence of this initial improvement.