The Role of Antibiotics in the Treatment of Acute Rhinosinusitis in Children: A Systematic Review

PURPOSE OF THE STUDY. To provide a systematic review of the current evidence for the efficacy of antibiotics compared with placebo in the treatment of acute rhinosinusitis in children.

METHODS. The authors searched Medline, Embase, and Cochrane Register for randomized controlled studies investigating the efficacy of antibiotics compared with children for treatment of acute sinusitis or acute rhinosinusitis for children between 1 and 18 years of age.

RESULTS. Ninety-six articles were identified in the search, with 84 articles being excluded for various reasons including not being a randomized controlled trial, not including children, not studying acute rhinosinusitis, not comparing antibiotics versus placebo, and/or repeat citation. Twelve studies were included for full text scrutiny with only 4 studies fulfilling selection criteria. The results of the meta-analysis suggest a benefit for those participants treated with antibiotics odds ratio 2.0 (95% confidence interval 1.16–3.47). Analysis is weakened by the low number of randomized controlled trials. Risks for internal bias were thought to be small, but external bias appeared significant. External bias included exclusion of patients with more severe disease, usage of ancillary medications and or saline nasal rinses, and differing antibiotics and varying age range.

CONCLUSIONS. Despite the positive findings of the statistical analysis favoring antibiotics for acute rhinosinusitis in children, the authors conclude that routine treatment with antibiotics remains uncertain. Gastrointestinal adverse reactions were nearly 3 times more common in those children treated with antibiotics compared with placebo. Children treated with placebo did not experience significant complications.

REVIEWER COMMENTS. This study reminds clinicians who interpret PSG that children may be more symptomatic with OSA during the winter and spring season. Consideration of repeating tests performed during summer and fall seasons may be helpful for children who have borderline results.


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The Role of Staphylococcal Enterotoxin in Atopic Keratoconjunctivitis and Corneal Ulceration

PURPOSE OF THE STUDY. To determine whether staphylococcal enterotoxin (SE) has a role in the pathogenesis of atopic keratoconjunctivitis (AKC) and corneal ulceration

STUDY POPULATION. Forty-five subjects were enrolled (18 with AKC, mean age 16.9 years; 9 with vernal keratoconjunctivitis [VKC], mean age 12.9 years; 10 with seasonal allergic conjunctivitis [SAC], mean age 21.9 years, and 8 healthy volunteers, mean age 21.6 years).

METHODS. Upper tarsal conjunctiva, lower conjunctival sac, and upper lid margin skin were swabbed for bacterial cultures done once in all subjects. Culture material was used for detection of 8 superantigen genes (SEA, B, C, D, G, H, I, and tsst-1), staphylococcal coagulase gene, and protein A gene with amplification by polymerase chain reaction.

RESULTS. Among with 45 subjects (adolescents and older), Staphylococcus aureus was detected in 15 with AKC (83%), 3 with VKC (33%), 1 with SAC (10%), and 0 in healthy volunteers. S. aureus was detected in similar percentages from the various sites examined (24%–38%). Superantigen genes were detected in 7 subjects with AKC (39%) and 1 with VKC (11%). There were no significant differences in SE detection according to location. Corneal ulcers were observed in 7 AKC subjects (39%) and 3 VKC subjects (33%) but not in SAC subjects or healthy volunteers. Among 27 patients with AKC and VKC, SE was detected in 6 of 10 subjects (60%) with corneal ulcers and 2 of 17 subjects (12%) without corneal ulcers. Among 18 AKC subjects, SE was detected in 5 of 7 subjects (71%) with corneal ulcers and 2 or 11 subjects (18%) without corneal ulcers.

CONCLUSIONS. In patients with a severe type of ocular allergic disease (AKC), S. aureus and SE were detected between a viral URI versus acute bacterial rhinosinusitis. Acute bacterial sinusitis is more likely when the presentation includes persistence of symptoms beyond 10 days, severe symptoms including fever ≥102° with purulent nasal discharge, facial pain lasting 3 to 4 days at the beginning of the illness, or worsening symptoms after a typical URI that lasted for 5 to 6 days with new onset of fever, headache, or increased nasal discharge. It is important to remember that a small percentage of URIs (5%–13%) become complicated by bacterial rhinosinusitis.

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