

FROM THE FAMILY PRACTICE INQUIRIES NETWORK

Is antibiotic prophylaxis effective for recurrent acute otitis media?

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■ EVIDENCE-BASED ANSWER

For children who have recurrent episodes of clinically diagnosed acute otitis media (AOM), antibiotic prophylaxis significantly reduces recurrence, although the effect is not large (strength of recommendation: **A-**, based on 1 systematic review of randomized controlled trials [RCTs] with below-average quality and 1 subsequent RCT with conflicting results). Evidence is insufficient to suggest which antibiotic is most appropriate, the optimal length of prophylaxis, or the number of episodes of AOM needed to justify prophylactic treatment. Possible harms of antibiotics include vomiting, diarrhea, rash, and infection with antibiotic-resistant organisms.

■ EVIDENCE SUMMARY

A systematic review of antibiotic prophylaxis for recurrent AOM examined 9 RCTs with a total of 958 children. Recurrent AOM was defined as 3 or more episodes per 6 to 18 months. The studies were low to moderate in quality (mean methodologic quality score of 11.8 out of 29 possible points). The most commonly used antibiotics were amoxicillin, cotrimoxazole, and sulfamethoxazole, given for 3 to 24 months (dosing not reported).

Children taking antibiotics had 0.11 (95% confidence interval [CI], 0.03–0.19) fewer episodes of recurrent AOM per patient-month than those taking placebo. The rate in the control group was 0.19 (95% CI, 0.13–0.26). Nine children would have to be treated per month to prevent 1 ear infection (NNT=9; 95% CI, 5–33). Only 2 of the 9 studies had statistically significant results; both used sulfisoxazole for 10 to 12 weeks and were of similar methodologic quality (12.5 out of 29 points).

A trend towards a better outcome in studies that used sulfisoxazole did not reach significance compared with those using other medications (ie, ampicillin, amoxicillin, cotrimoxazole). Shorter treatment intervals (<6 months) trended toward being more effective than longer intervals, but this also did not reach significance.

Children with more frequent episodes of AOM did no better than those with less frequent episodes.¹

Since that review was published, another study of prophylaxis for ear infections had been published. This randomized, double blind, placebo-controlled study enrolled 194 children aged 3 months to 6 years with at least 3 documented AOM episodes in the preceding 6 months. The children were given amoxicillin (20 mg/kg/d) either once daily (n=55) or divided twice daily (n=44) or placebo (n=59). Excluding 36 noncompliant subjects, the percentages without a recurrent episode were 63% for the placebo group, 64% for the once-daily amoxicillin group, and 61% for the twice-daily amoxicillin group. There was no significant difference in the incidence of new AOM episodes among the children in the 3 groups.²

A review article states: "Many children with acute otitis media do not benefit from antimicrobial therapy because the cause of their illness is not bacterial or the infection is cleared by the immune system without use of a drug. At present, we do not have clinical criteria for distinguishing which children are in need of antibiotic therapy for AOM."³ The lack of criteria for determining which children need antibiotic therapy for AOM makes it more difficult to select children for antibiotic prophylaxis against recurrent AOM.

■ RECOMMENDATIONS FROM OTHERS

The American Academy of Pediatrics and the American Academy of Family Physicians do not address antibiotic prophylaxis for recurrent episodes of otitis media in their guidelines. Both groups recommend modification of risk factors to decrease recurrent AOM, including promoting breastfeeding during the first 6 months, avoiding bottle-propping, reducing or eliminating pacifier use in the second 6 months of life, and eliminating exposure to secondhand smoke.

They also recommend pneumococcal conjugate vaccine to reduce vaccine-serotype pneumococcal otitis and live-attenuated influenza vaccine during respiratory virus season for children aged >2 years.

CLINICAL COMMENTARY

Treatment options include observation, antibiotic prophylaxis, tympanostomy tubes; no option is ideal for all

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Treatment options for children with recurrent acute otitis media include observation with treatment of recurrences, antibiotic prophylaxis, or tympanostomy tubes. No option is ideal for all children.

Multiple factors can be weighed to choose more or less aggressive treatment including frequency and severity of infections, exposure to secondhand smoke, day care enrollment, sibling history, parental comfort and anxiety, presence of serous otitis media

between episodes, time of year, and effect on overall hearing. Measures to prevent otitis media and reserving the diagnosis of acute otitis media for "true" purulent infections can help limit the number of children diagnosed with recurrent disease.

REFERENCES

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