

Patient Oriented Evidence that Matters

Otitis media treatment does not decrease effusion

CLINICAL QUESTION: Does antibiotic therapy prevent the development of middle ear effusion in children with acute otitis media?

BOTTOM LINE: Treating acute otitis media with antibiotics does not decrease the likelihood of the children developing an asymptomatic middle ear effusion. (LOE=1a)

REFERENCE: Koopman L, Hoes AW, Glasziou PP, et al. Antibiotic therapy to prevent the development of asymptomatic middle ear effusion in children with acute otitis media. *Arch Otolaryngol Head Neck Surg* 2008;134(2):128–132.

STUDY DESIGN: Meta-analysis (randomised controlled trials)

FUNDING: Government

SETTING: Various (meta-analysis)

SYNOPSIS: The researchers conducting this meta-analysis searched several databases, including the Cochrane Library, to identify randomised trials that compared antibiotic treatment with no antibiotic treatment for acute otitis media and evaluated middle ear effusion by tympanogram at one month. The description of the methods of this study was sparse, probably due more to the reporting limitations of the journal rather than the actual conduct of the study. The researchers identified five studies enrolling a total of 1328 children. For four of the studies, they were able to obtain the databases from the researchers, allowing them to perform the meta-analysis on individual patient data rather than combine the end results from each study. Children younger than two years with recurrent otitis media were more likely to develop effusion. There was no statistically significant effect of antibiotic treatment on the development of middle ear effusion after one month.

Preventing mastoiditis not a good antibiotic rationale

CLINICAL QUESTION: Is the detection and treatment of otitis media associated with a decrease in the development of mastoiditis?

BOTTOM LINE: The prevention of mastoiditis is not a good reason to give antibiotics to children with otitis media. Most children who develop mastoiditis will not have had otitis media diagnosed in the previous three months. For children with otitis media, one episode of mastoiditis is prevented for every 4831 children who are treated. (LOE=2b)

REFERENCE: Thompson PL, Gilbert RE, Long PF, Saxena S, Sharland M, Wong IC. Effects of antibiotics for otitis media on mastoiditis in children: A retrospective cohort study using the United Kingdom General Practice Research Database. *Pediatrics* 2009;123(2):424–430.

STUDY DESIGN: Cohort (retrospective)

FUNDING: Government

SETTING: Population-based

SYNOPSIS: The researchers conducting this study used data from a database of general practice records for more than 2.6 million children who are regular patients of an 'up-to-standard' general practice in the United Kingdom. They searched the database for diagnoses of mastoiditis or reports of mastoidectomy in children between the ages of three months to 15 years over a 17-year period. The identified 854 cases of mastoiditis, or 1.2 cases per 10 000 children per year. Only 36% of these children had a diagnosis of otitis media in the three months before this diagnosis. Analysing a cohort of children with otitis media over the same period, they found that antibiotic treatment decreased the likelihood of the development of mastoiditis, though the numbers were small. There were only 288 cases of mastoiditis over the whole period in almost 465 000 children who had a total of 1.18 million diagnoses of otitis media. Translated, this means that one episode of mastoiditis is prevented for every 4831 children who are treated.