Does topical antibiotic prophylaxis reduce post-tympanostomy tube otorrhea?

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Authors' objectives
To assess the efficacy of topical antimicrobial prophylaxis against purulent post-operative otorrhea.

Searching
MEDLARS (MEDLINE) was searched using the MeSHs 'tympanostomy', 'complications' and 'otorrhea' (search dates unclear).

Study selection
Study designs of evaluations included in the review
Prospective randomised controlled trials (RCTs) only were included.

Specific interventions included in the review
Topical antimicrobial prophylaxis of purulent post-operative otorrhea of at least 48 hours duration after insertion of tympanostomy tube.

Participants included in the review
Children with otitis media with effusion, and not on oral antimicrobial agents, were included.

Outcomes assessed in the review
The incidence of otorrhea within 1 month of surgery was assessed.

How were decisions on the relevance of primary studies made?
The authors do not state how the papers were selected for the review, or how many of the authors performed the selection.

Assessment of study quality
The authors do not state that they assessed validity.

Data extraction
The authors do not state how the data were extracted for the review, or how many of the authors performed the data extraction.

Methods of synthesis
How were the studies combined?
The studies were combined using a quantitative meta-analysis, according to the method of Mantel-Haenszel (fixed-effect), for the 3 studies that compared patients.

How were differences between studies investigated?
Design by patient and by ear. Antimicrobial agent, duration of therapy and risk of purulent post-operative otorrhea, as measured by the rate in the control group, were all investigated.

Results of the review
Five RCTs: 3 comparing patients and 2 comparing the patients' ears.
Overall odds ratio for the 3 patient studies was 0.12 (confidence intervals: 0.04, 0.37), indicating an 85% reduction in rate of otorrhea and antimicrobial medication; the reduction by ear studies was smaller and not significant.

Authors’ conclusions
Given the low incidence of purulent post-operative otorrhea and the heterogeneity of the published studies, a firm conclusion about the effectiveness of topical antimicrobial prophylaxis cannot be made. These agents are potentially oxotoxic, therefore, judicious use of them is recommended following typanostomy tube insertion in children at high risk of pirulent post-operative otorrhea, i.e. those with mucoid or purulent effusion.

CRD commentary
A sensible handling of the results from heterogeneous trials. It is unclear the extent to which all RCTs were identified since only MeSH terms may have been used.

Implications of the review for practice and research
The antimicrobial prophylaxis are potentially oxotoxic; judicious use of them is recommended following typanostomy tube insertion in children at high risk of pirulent post-operative otorrhea, i.e. those with mucoid or purulent effusion.

Bibliographic details

Other publications of related interest


Indexing Status
Subject indexing assigned by NLM

MeSH
Administration, Topical; Anti-Bacterial Agents /administration & dosage; Cerebrospinal Fluid Otorrhea /etiology /pathology /prevention & control; Child; Confidence Intervals; Middle Ear Ventilation /adverse effects; Odds Ratio; Prospective Studies; Randomized Controlled Trials as Topic; Suppuration

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This is a critical abstract of a systematic review that meets the criteria for inclusion on DARE. Each critical abstract contains a brief summary of the review methods, results and conclusions followed by a detailed critical assessment on the reliability of the review and the conclusions drawn.