Interventions for acute otitis externa

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Authors' objectives

Background: Acute otitis externa is an inflammatory condition of the ear canal, with or without infection. Symptoms include ear discomfort, itchiness, discharge and impaired hearing. It is also known as 'swimmer's ear' and can usually be treated successfully with a course of ear drops. Objectives: To assess the effectiveness of interventions for acute otitis externa.

Search methods: Our search for published and unpublished trials included the Cochrane Ear, Nose and Throat Disorders Group Trials Register; CENTRAL; PubMed; EMBASE; CINAHL; Web of Science; BIOSIS Previews; Cambridge Scientific Abstracts; mRCT and additional sources. The date of the most recent search was 6 January 2009.

Selection criteria: Randomised controlled trials evaluating ear cleaning, topical medication or systemic therapy in the treatment of acute otitis externa were eligible. We excluded complicated acute otitis externa; otitis externa secondary to otitis media or chronic suppurative otitis media; chronic otitis externa; fungal otitis externa (otomycosis); eczematous otitis externa; viral otitis externa and furunculosis.

Data collection and analysis: Two authors assessed eligibility and quality. Main results: Nineteen randomised controlled trials with a total of 3382 participants were included. Three meta-analyses were possible. The overall quality of studies was low. Topical antimicrobials containing steroids were significantly more effective than placebo drops: OR 11 (95% CI 2.00 to 60.57; one trial). In general, no clinically meaningful differences were noted in clinical cure rates between the various topical interventions reviewed. One notable exception involved a trial of high quality which showed that acetic acid was significantly less effective when compared with antibiotic/steroid drops in terms of cure rate at two and three weeks (OR 0.29 (95% CI 0.13 to 0.62) and OR 0.25 (95% CI 0.11 to 0.58) respectively). One trial of low quality comparing quinolone with non-quinolone antibiotics did not find any difference in clinical cure rate. No trials evaluated the effectiveness of ear cleaning.

Only two trials evaluated steroid-only drops. One trial of low quality suggested no significant difference between steroid and antibiotic/steroid but did not report the magnitude or precision of the result. Another trial of moderate quality comparing an oral antihistamine with topical steroid against topical steroid alone found that cure rates in both groups were high and comparable (100% (15/15) and 94% (14/15) respectively at three weeks).

Authors' conclusions: There is a paucity of high quality trials evaluating interventions for acute otitis externa. The results of this systematic review are largely based on odds ratios calculated from single trials, most of which have very broad 95% confidence intervals because of small to modest sample sizes. The findings may not be wholly generalisable to primary care for a variety of reasons; only two of the 19 trials included in the review were conducted in a primary care population setting, and in 11 of the 19 trials ear cleaning formed part of the treatment (an intervention unlikely to be available in primary care).

Despite these reservations, some meaningful conclusions can be drawn from the evidence available: Topical treatments alone, as distinct from systemic ones, are effective for uncomplicated acute otitis externa. In most cases the choice of topical intervention does not appear to influence the therapeutic outcome significantly. Any observed differences in efficacy were usually minor and not consistently present at each follow-up visit. Acetic acid was effective and comparable to antibiotic/steroid at week 1. However, when treatment needed to be extended beyond this point it was less effective. In addition, patient symptoms lasted two days longer in the acetic acid group compared to antibiotic/steroid. The evidence for steroid-only drops is very limited and as yet not robust enough to allow us to reach a conclusion or provide recommendations. Further investigation is needed. Given that most topical treatments are equally effective, it would appear that in most cases the preferred choice of topical treatment may be determined by other factors, such as risk of ototoxicity, risk of contact sensitivity, risk of developing resistance, availability, cost and dosing schedule. Factors such as speed of healing and pain relief are yet to be determined for many topical treatments and may also influence this decision. Patients prescribed antibiotic/steroid drops can expect their symptoms to last for approximately six days after treatment has begun. Although patients are usually treated with topical medication for seven to 10 days it is apparent that this will undertreat some patients and overtreat others. It may be more useful when prescribing ear drops to instruct patients to use them for at least a week. If they have symptoms beyond the first week they should continue the drops until their symptoms resolve (and possibly for a few days after), for a maximum of a further seven days. Patients with persisting symptoms beyond two weeks should be considered treatment failures and alternative management initiated.


Bibliographic details

Kaushik Vivek, Malik Tass, Saeed Shakeel R. Interventions for acute otitis externa. Cochrane Database of Systematic
Accession Number
10000004740

Date abstract record published
13/07/2012

Record Status
This is an abstract for a Cochrane review