Review: Topical quinolones are better than systemic antibiotics for chronic suppurative otitis media at up to 2 weeks


**Clinical impact ratings:** GIM/FP/GP ★★★★★☆ Infectious Disease ★★★★★☆

**Question**
In patients with chronic suppurative otitis media (CSOM), how do systemic antibiotics compare with topical antibiotics or antiseptics for ears with chronic discharge and eardrum perforations?

**Methods**
Data sources: Cochrane ENT Disorders Groups Specialised Register, Cochrane Central Register of Controlled Trials, EMBASE/Excerpta Medica, MEDLINE, 9 other databases, conference abstracts, and bibliographies of relevant studies.

Study selection and assessment: Randomized controlled trials (RCTs) in any language that compared topical and systemic treatments in patients with CSOM. Studies with steroid treatments were excluded. 9 RCTs (n = 833, age range 6 to 83 y) met the selection criteria but were of poor quality. Quality assessment was based on sequence generation, allocation concealment, blinding, and patient follow-up. Where possible, an intention-to-treat analysis was used.

Outcomes: Resolution of CSOM (clearing discharge) at 2 to 4 weeks and > 4 weeks. Secondary outcomes included healing of perforation, hearing improvement, and adverse events.

**Main results**
Topical quinolones were better than systemic quinolones; systemic plus topical quinolones did not differ from topical quinolones for clearing discharge at up to 2 weeks (Table). Systemic non-quinolone therapy was equivalent to topical non-quinolone therapy at 4 weeks (Table). No RCTs reported results for healing of perforation. Compared with topical quinolones, topical chloramphenicol plus systemic non-quinolones increased ototoxicity and hearing loss (Table), and this was attributed to chloramphenicol. Other adverse events were mild.

**Conclusion**
In patients with chronic suppurative otitis media, topical quinolone antibiotics are better than systemic antibiotics for clearing discharge at up to 2 weeks.

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**Commentary**
The review by Macfadyen and colleagues included 9 small, poor-quality RCTs. These RCTs, however, represent the best evidence available regarding treatment of CSOM with eardrum perforations. The review concludes that topical quinolone antibiotics are the treatment of choice for short-term resolution of persistent discharge and no benefit existed from combining systemic and topical treatment. It is important to note that no evidence of ototoxicity was found with topical quinolones, unlike topical chloramphenicol plus systemic non-quinolones. The longer-term outcomes of antibiotic therapy and the treatment of complicated CSOM are less clear. Patients with CSOM taking antibiotics should have regular follow-up to monitor potential adverse events and complications.

The current standard of care for CSOM includes, in addition to antibiotic drops, aural toilet and control of granulation tissue. Because the external auditory canal and areas adjacent to the middle ear may contain desquamated epithelium and exudative material, antibiotic ear drops may not be able to reach the site of infection without mechanical removal of cellular debris. The studies in the review varied considerably in their approach to aural toilet, a critical aspect in the successful treatment of CSOM, and we do not know how these differences might have affected the results. Early use of antibiotic drops can also help control formation of granulation tissue in the middle ear and external auditory canal—another issue not assessed in this review. No RCT evidence exists to support the use of decongestants for CSOM.

Based on the RCT evidence in this review, primary care providers should prescribe topical quinolones for CSOM with eardrum perforations. An earlier review provides more evidence when alternative topical antibiotics were compared with topical antiseptics for CSOM (1). A referral to an ear, nose, and throat specialist should be considered for patients who have signs of mastoiditis, have persistent high fevers, or require micro-instrumentation for aural toilet or removal of granulation tissue.

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**Reference**