

# OTITIS EXTERNA<sup>1-4</sup>

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## Overview

Otitis externa is defined as the presence of inflammation in the external auditory canal, most commonly associated with discomfort, swelling and erythema of the canal with variable discharge. While the majority of cases are from bacterial infection, fungal, allergic and dermal disease (dermatitis) should be considered.

## Diagnostic Considerations<sup>4</sup>

### Precipitants

- Excessive moisture and trauma
  - Q-tip use may cause abrasions and allow entry of pathogens to deeper tissue
  - Moisture removes cerumen and increases the pH of the external canal, providing an ideal environment for pathogen growth and proliferation

### Pathogens<sup>4</sup>

- Most common: *P. aeruginosa* and *S. aureus*
- Polymicrobial in 1/3 of cases
- Fungal infection in 2-10% of cases (often occurs after treatment with antibiotics)
- Superficial candida (can occur in those who use hearing aids due to moisture)

### Signs and Symptoms<sup>1,3,4</sup>

- Otalgia and otorrhea
- Occasional aural fullness and hearing loss
- Pain with stretching of pinna
- Pruritis, scaling

### History/Physical<sup>1,4</sup>

- Thorough examination of the head and neck (nose, mastoids, nose, mouth, pharynx) to rule out other diagnoses (otomycosis, contact dermatitis, chronic suppurative otitis media, psoriasis)
- Assess for possible complications of otitis externa (necrotizing otitis externa)
- Remove any debris that may be obstructing the canal
  - Inflammation can make canal vulnerable to trauma, and therefore avoid using a curette
  - Cleansing is best done with low suction or by using a fluffed-out cotton swab
  - Flushing should be avoided unless the tympanic membrane can be clearly visualized
  - Antibiotic drops or hydrogen peroxide may be used to moisten/soften any debris.

## Management Considerations<sup>1-4</sup>

### Prevention:

- Remove moisture after swimming with warm air from a blow dryer, tilting the head to allow drainage, and/or adding a few drops of vinegar to the ear (ONLY in the presence of an intact tympanic membrane)
- Cotton-tip swabs should be avoided

### Pharmacologic Management of Otitis Externa<sup>1-3</sup>

| Patient Type   | Medication   | Dose  | Comments   |
|--|--|---|--|
| Bacterial infection (without intact tympanic membrane) | First-Line<br>Buro-Sol   | 2-3 drops TID or QID  | Contains aluminum acetate and benzethonium chloride. Considered first line because less toxic, avoids resistance, lower cost.  |
|  | Second-Line<br>Cortisporin<br>Garasone<br>Ciprodex                                     | 3 drops TID or QID<br>3-4 drops TID<br>4 drops BID                | Contains 10,000U polymyxin, 5mg neomycin and 10mg hydrocortisone per mL<br>Neomycin can be sensitizing when used topically<br>Contains 3mg gentamicin and 1mg betamethasone per mL<br>Beware of risk of ototoxicity<br>Contains 3mg ciprofloxacin and 1mg dexamethasone per mL |
| Bacterial infection (with tympanic membrane defect)    | Ciprodex   | 4 drops BID   | Treatment of choice due to lower risk of ototoxicity   |
| Otomycosis   | First Line<br>Clotrimazole 1% cream<br>Tolnaftate 1% cream<br>Locacorten Vioform drops | Apply BID (am and qhs)<br>Apply BID (am and qhs)<br>2-3 drops BID | Combination of clioquinol and flumethasone.  |
|  | Second Line<br>Keto-derm   | Apply BID (am and qhs)  | Used if no response to above after 1 week.<br>Contains ketoconazole, which covers for <i>Aspergillus niger</i> .   |

## Additional Considerations<sup>1,4</sup>

- In general, patients should stop treatment if hearing loss, tinnitus, vertigo or imbalance is noted. If symptoms do not improve, specialist referral is indicated.
- Combination of antibiotics and steroids is useful if there is an underlying dermatitis. A pure infection may be treated with antibiotics alone.
- Prolonged use of combination antibiotics may alter the normal flora and result in a fungal infection. These may be managed with cleaning, hydrogen peroxide, and/or over-the-counter medications as above.
- Recurrent infections or infections resistant to topical treatment warrant consideration of underlying immunosuppressive disorders (diabetes, leukemia, DiGeorge Syndrome)
- Systemic treatment should be considered for patients with the following: diabetes, history of radiation to ear, inflammation extending beyond ear canal, significant edema preventing the application of topical therapy, and immunodeficiency
- May consider swab if resistant to therapy to rule out otomycosis, but empiric treatment is usually sufficient and less costly than a culture. Culture should be reserved for those with severe otitis externa, with fever or lymphadenopathy
- Immediate referral to ENT should be considered if any suspicion of necrotizing otitis externa

References can be found online at [http://www.dfcu.utoronto.ca/programs/postgraduateprograme/One\\_Pager\\_Project\\_References.htm](http://www.dfcu.utoronto.ca/programs/postgraduateprograme/One_Pager_Project_References.htm)