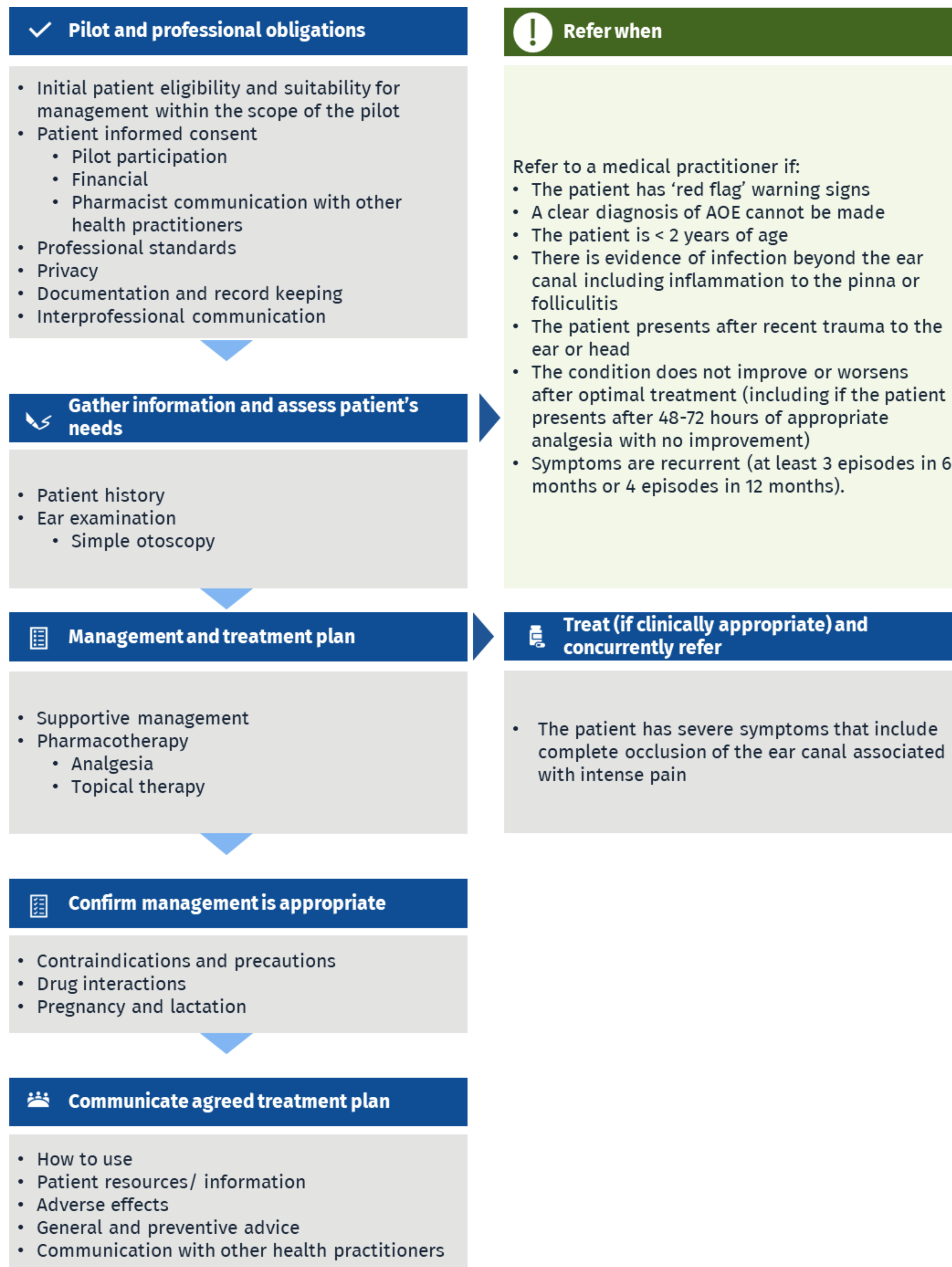
Queensland Health

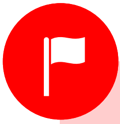
Queensland Community Pharmacy Scope of Practice Pilot

Acute Otitis Externa - Clinical Practice Guideline

Guideline Overview



Queensland Government



‘Red flag’ warning signs at patient presentation that necessitate referral to a medical practitioner:

- Severe symptoms including complete occlusion of the ear canal associated with intense pain (antibiotic therapy may be provided concurrent to referral)
- Red, swollen and tender behind the ear (possible acute mastoiditis)
- Systemic symptoms including fever, weakness, irritability, difficulty sleeping and/or loss of appetite
- Recent trauma to the ear or head
- The patient is immunocompromised
- Tympanic membrane (TM) red flags (if TM can be visualised) (perforation/retraction, crust/granulation/discharge in attic region, severely retracted TM, dull white mass behind TM, perforation near the edge of the TM).

Key points

- Approximately 90% of diffuse acute otitis externa (AOE) cases, also known as swimmer’s ear, are caused primarily by bacterial infection, although mixed bacterial and fungal infections are common [1, 2].
- Diffuse AOE can affect people of any age but is most common in children aged between 7 and 14 years [3].
- Oral antibiotics are generally not required for AOE [1, 4-6]. Patients that require antibiotic treatment due to immunocompromise, presence of systemic symptoms or have evidence of infection beyond the ear canal must be referred to a medical practitioner.
- Ear conditions are often very painful, particularly for young children, and it is important to approach with care [7]. If the patient will not allow for otoscopic examination due to pain, advice should be provided on appropriate analgesia and the patient referred to a medical practitioner.

When applying the information contained within this clinical practice guideline, pharmacists are advised to exercise professional discretion and judgement. The clinical practice guideline does not override the responsibility of the pharmacist to make decisions appropriate to the circumstances of the individual, in consultation with the patient and/or their carer.

Refer when

- The patient has ‘red flag’ warning signs
- A clear diagnosis of AOE cannot be made
- The patient is < 2 years of age
- There is evidence of infection beyond the ear canal including inflammation to the pinna or folliculitis
- The patient presents after recent trauma to the ear or head
- The condition does not improve or worsens after optimal treatment (including if the patient presents after 48-72 hours of appropriate analgesia with no improvement)
- Symptoms are recurrent (at least 3 episodes in 6 months or 4 episodes in 12 months).

Treat (if clinically appropriate) and concurrently refer:

- The patient has severe symptoms that include complete occlusion of the ear canal associated with intense pain.

Gather information and assess patient’s needs

Diagnosis of AOE is based on clinical history and ear examination using an otoscope [1, 7]. A diagnosis of diffuse AOE requires the rapid onset (generally within 48 hours) of:

1. **symptoms of ear canal inflammation:**
    - ear pain (commonly severe), itching or a feeling of fullness in the ear (can be with or without hearing loss or jaw pain)

    and

2. **signs of ear canal inflammation:**
    - tenderness of the tragus and/or pinna

    OR

    - diffuse ear canal oedema and/or erythema (with or without otorrhea, regional lymphadenitis, tympanic membrane (TM) erythema or cellulitis of the pinna) [5].

Patient history

Sufficient information should be obtained from the patient to assess the safety and appropriateness of any recommendations and medicines.

The patient history should consider:

- age
- nature, severity and frequency of symptoms including pain, itch, discharge, hearing loss, a feeling of fullness and dizziness
- onset and duration of symptoms, including preceding illness
- recent history of upper respiratory tract infection (URTI)
- other presenting symptoms including temperature > 38°C or < 35.5°C, rash, increased respiratory rate/distress, dehydration and/or reduced urine output, runny nose, sore throat or cough

- family history of ear conditions and hearing loss
- previous history of AOE, otitis media (OM) or other ear conditions:
  - hearing loss and hearing tests
  - patient age at first episode of ear conditions
  - under the care of an ENT specialist or audiologist
  - ear surgery to insert tympanostomy tube (grommets)
- precipitating factors e.g., exposure to cigarette smoke, swimming (especially in a dam or creek), dusty environments, overcrowding/close proximity to other children
- relieving factors including medication and other strategies tried to treat current symptoms
- underlying medical conditions e.g., immunocompromised (including diabetes), cochlear implant, craniofacial abnormalities, persistent hearing loss
- delayed speech or language development (referral may be required if this is evident and has not been assessed by a medical practitioner)
- current medications (including prescribed medicines, vitamins, herbs, other supplements and over-the-counter medicines)
- frequency and method of ear cleaning
- drug allergies/adverse drug effects
- immunisation status as per the Australian Immunisation Handbook.

Ear examination

Physical examination including otoscopy of both ears (starting with the least painful ear) is required to differentiate between diffuse AOE, AOM and other ear conditions [1, 8, 9].

Ear examination using simple otoscopy should be conducted in accordance with the Queensland Health and Royal Flying Doctors Primary Clinical Care Manual (p519-521). An ear differential diagnosis flowchart is also included on p521-522 [7].

Features to differentiate between bacterial and fungal infections are included in the Queensland Health and Royal Flying Doctors Primary Clinical Care Manual (p531).

If ear discharge is visible, the ear canal should be gently cleaned prior to performing ear examination to remove any discharge [7, 10]. The Remote Primary Health Care Manual – Clinical Procedure Manual (p258) [10] and the Queensland Health and Royal Flying Doctors Primary Clinical Care Manual (p530) contain a step by step guide for dry mopping [7].

Visualisation of the TM can be difficult in the presence of extensive otorrhoea or cerumen, or when there is complete occlusion of the canal [1, 8].

- In these cases, it can be difficult to distinguish AOE from purulent OM with a TM perforation; pain triggered by gently pulling on the pinna is suggestive of diffuse AOE [11].
- If there is a suspicion of TM perforation, the pharmacist should also refer to the clinical practice guideline for AOM, as urgent referral to a medical practitioner may be required.

Check for other symptoms if required (nose, throat, cough) [7].

Management and treatment plan

Pharmacist management of AOE involves:

- **supportive management:**
  - Advice and education regarding keeping ears dry and the use of dry mopping with tissue spears, in accordance with the Therapeutic Guidelines: Otitis externa [(1)] and the Queensland Health and Royal Flying Doctors Primary Clinical Care Manual (p530) contain a step by step guide for dry mopping [(7)].
- **pharmacotherapy:**
  - Analgesia[1] in accordance with the Therapeutic Guidelines: Pharmacological management of acute pain [(12)].
  - Antimicrobial therapy in accordance with the Therapeutic Guidelines: Otitis externa[2] [(1)].

NB1: Paracetamol, Ibuprofen and Naproxen (in preparations containing 250mg or less) can be sold as Schedule 2 medicines.

NB2: Patients that have a complete occlusion of the ear canal may be commenced on oral antibiotic treatment and concurrently referred to a medical practitioner. Patients that require oral antibiotics for systemic symptoms, spreading infection or due to immunocompromise must be referred to a medical practitioner for commencement of antibiotic treatment [(1)].

Confirm management is appropriate

Pharmacists must consult the Therapeutic Guidelines, Australian Medicines Handbook and other relevant references to confirm that the treatment recommendation is appropriate, including for:

- contraindications and precautions
- drug interactions
- pregnancy and lactation.

Communicate agreed management plan

Comprehensive advice and counselling (including supporting written information when required) as per the Australian Medicines Handbook and other relevant references should be provided to the patient regarding:

- individual product and medicine use (e.g., dosing and ear drop application/ administration instructions)
- how to manage adverse effects
- when to seek further care and/or treatment (including recognising patient deterioration).

It is the pharmacist's responsibility to ensure the suitability and accuracy of any resources provided to patients (and parents/caregivers if applicable) and that they comply with all copyright conditions.

The agreed management plan should be shared with members of the patient's multidisciplinary healthcare team, with the patient's consent.

Patient resources/ information

- The Royal Children's Hospital Melbourne Fact sheet: Ear infections and glue ear [13].

General advice

AOE symptoms typically improve within 48 to 72 hours of starting treatment, however full resolution may take up to 2 weeks.

At the initial appointment, patients (parents/caregivers if applicable) should be advised to see a medical practitioner if:

- their condition worsens or deteriorates
- there is no improvement in symptoms after 48-72 hours
- discharge continues past 14 days.

Patients (parents/caregivers if applicable) should be provided with advice regarding the prevention of AOE including:

- the use of over-the-counter ear drops containing drying agents such as acetic acid and isopropyl alcohol following water exposure (after current infection resolution [1, 7, 11, 14]
- pneumococcal and influenza vaccination
- hygiene, including frequent handwashing (especially after nose blowing and coughing) and keeping hands and face clean of nasal discharge
- avoidance of exposure to smoke [7].

Clinical review

Clinical review with the pharmacist is generally not required. If the condition does not improve or resolve, the patient should be advised to see a medical practitioner for further investigation.

Pharmacist resources

- Therapeutic Guidelines: Antibiotic
    - Otitis externa
- Therapeutic Guidelines: Pain and analgesia
    - Pharmacological management of acute pain
- Australian Medicines Handbook
    - Otitis externa
    - Drug for ear infections
    - NSAIDs
- MSD Manual (Professional version) - External otitis (Acute)
- Otolaryngology Journal - Clinical Practice Guideline: Acute Otitis Externa
- Queensland Health and Royal Flying Doctors Service (Queensland branch) Primary Clinical Care Manual 11th edition 2022
- DermNet NZ - Otitis externa
- Remote Primary Health Care Manual - Clinical Procedure Manual
- McGovern Medical School - Ear disease photo book.

References

1. Therapeutic Guidelines: Antibiotic (Otitis externa). Melbourne: Therapeutic Guidelines Limited; 2021 [cited 2022 April 14]. Available from: https://tgldcdp.tg.org.au/viewTopic?topicfile=otitis-externa.
2. Ngan V. Otitis externa: DermNet New Zealand Trust; 2005 [cited 2022 June 29]. Available from: https://dermnetnz.org/topics/otitis-externa.
3. Medina-Blasini Y, Sharman T. Stat Pearls: Otitis Externa. Treasure Island, Florida: StatPearls Publishing; 2022 [cited 2022 July 4]. Available from: https://www.ncbi.nlm.nih.gov/books/NBK556055/.
4. Cheffins T, Heal C, Rudolphy S, Evans R, Veitch C. Acute otitis externa Management by GPs in North Queensland. Australian Family Physician. 2009;38:262-6.
5. Rosenfeld RM, Schwartz SR, Cannon CR, Roland PS, Simon GR, Kumar KA, et al. Clinical Practice Guideline: Acute Otitis Externa. Otolaryngology–Head and Neck Surgery. 2014;150(1_suppl):S1-S24.
6. Wiegand S, Berner R, Schneider A, Lundershausen E, Dietz A. Otitis Externa. Dtsch Arztebl Int. 2019;116(13):224-34.
7. Queensland Health and Royal Flying Doctor Service (Queensland Section). Primary Clinical Care Manual. Cairns: Office of Rural and Remote Health, Queensland Government; 2022 [cited 2022 September 18]. Available from: https://www.health.qld.gov.au/rrcsu/clinical-manuals/primary-clinical-care-manual-pccm.
8. Therapeutic Guidelines: Antibiotic (Otitis media). Melbourne: Therapeutic Guidelines Limited; 2021 [cited 2022 April 12]. Available from: https://tgldcdp.tg.org.au/viewTopic?topicfile=otitis-media.
9. Limb C, Lustig L, Durand M. Acute otitis media in adults: Wolters Kluwer; 2022 [cited 2022 April 12]. Available from: https://www.uptodate.com/contents/acute-otitis-media-in-adults.
10. Remote Primary Health Care Manuals. Clinical Procedures Manual. Alice Springs: Centre for Remote Health; 2017 [cited 2022 June 23]. Available from: https://docs.remotephcmanuals.com.au/review/g/manuals2017-manuals/d/20362.html?publication=rphcm-001.
11. Kesser B. MSD Manual Professional Version: External Otitis (Acute): Merck & Co; 2022 [cited 2022 June 24]. Available from: https://www.msdmanuals.com/en-au/professional/ear,-nose,-and-throat-disorders/external-ear-disorders/external-otitis-acute?query=otitis%20externa.
12. Therapeutic Guidelines: Pain and analgesia (pharmacological management of acute pain). Melbourne: Therapeutic Guidelines Limited; 2021 [cited 2022 June 27]. Available from: https://tgldcdp.tg.org.au/viewTopic?etgAccess=true&guidelinePage=Pain%20and%20Analgesia&topicfile=mild-acute-nociceptive-pain.
13. The Royal Children's Hospital General Medicine Emergency and Otolaryngology departments. Ear infections and glue ear Melbourne: RCHM; 2018 [cited 2022 March 18]. Available from: https://www.rch.org.au/kidsinfo/fact_sheets/Ear_infections_and_otitis_media/.
14. Australian Medicines Handbook: Drugs for ear infections. Adelaide: Australian Medicines Handbook Pty Ltd; 2022 [cited 2022 September 18]. Available from: https://amhonline.amh.net.au/chapters/ear-nose-throat-drugs/drugs-ear-infections?menu=vertical.