SASKATCHEWAN REGISTERED NURSES' ASSOCIATION

RNs WITH ADDITIONAL AUTHORIZED PRACTICE
CLINICAL DECISION TOOL
DECEMBER 1, 2016

OTITIS MEDIA ADULT

DEFINITION

Acute otitis media (AOM) is an acute suppurative infection of the middle ear, characterized by the acute onset of signs and symptoms of inflammatory middle ear effusion (MEE), and often preceded by a viral upper respiratory tract infection (URTI).

IMMEDIATE CONSULTATION REQUIRED IN THE FOLLOWING SITUATIONS

- Signs of meningeal irritation
- Mastoid process erythema, tenderness, swelling with fever, protrusion of pinna
- Facial nerve palsy
- Lateral neck abscess
- Failure of second antibiotic therapy

CAUSES

Viral Organisms

- Account for approximately 25% of cases

Bacterial Organisms

- *Streptococcus pneumoniae*
- *Moraxella catarrhalis*
- *Haemophilus influenzae*

Other Causes

- Immunoreactivity
- Allergic rhinitis

PREDISPOSING AND RISK FACTORS

- Eustachian tube dysfunction
- URTI
- Allergies
- Immunosuppression
- Active or passive smoking
- Down syndrome
- Cleft palate
- Fall and winter months
- Male gender
- Craniofacial abnormalities

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HISTORY

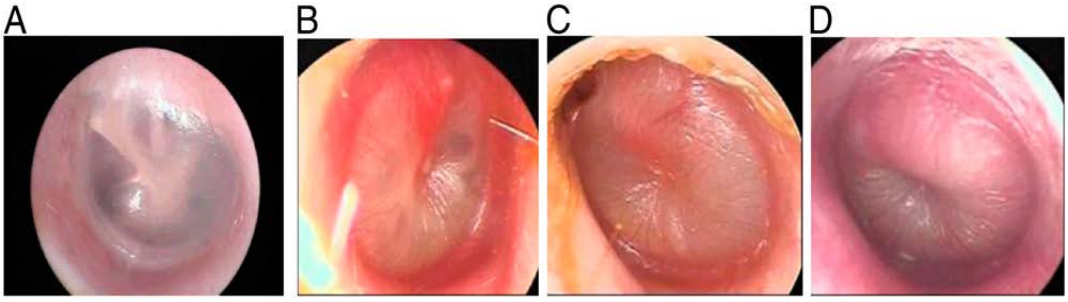
- Otalgia
- General malaise and fever may or may not be present
- Sensation of fullness, ear "popping"
- Hearing decreased
- Tinnitus or roaring in ear, vertigo
- Purulent discharge if drum perforated
- History of URTI or recurrent AOM

PHYSICAL FINDINGS

- Client may be febrile
- Tympanic membrane (TM) may be red, dull, cloudy or yellow, often bulging and opaque
- Bony landmarks obscured or absent
- Purulent discharge if drum perforated
- Decreased mobility of TM
- Bullae seen on TM (only in cases of Mycoplasma infection)
- Peri-auricular and anterior cervical nodes enlarged and tender
- Conductive hearing loss may be present

Picture of TM:

A. Normal TM
B. TM with mild bulging
C. TM with moderate bulging
D. TM with severe bulging



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acute otitis media. *Pediatrics, 131*(3), e964-e999.

DIFFERENTIAL DIAGNOSIS

- Acute otitis externa
- Transient middle-ear effusion (not an infection)
- Non-infectious MEE
- Trauma to or foreign body in ear canal
- Referred pain from dental abscess or temporomandibular joint dysfunction
- Mastoiditis (rare)
- Eustachian tube disorders or nasopharyngeal pathology
- Allergic rhinitis
- Otitis media with effusion
- Chronic suppurative otitis media
- Myringitis

COMPLICATIONS

- Perforated TM
- Serous otitis media
- Chronic otitis media
- Hearing reduction
- Mastoiditis (rare)
- Meningitis (rare)
- Iron deficiency anemia associated with recurrent otitis media
- Bezold mastoiditis (lateral neck abscess)
- Sub-periosteal abscess
- Petrous apicitis or petrositis
- Facial nerve palsy
- Other Rare Complications:
    - Lateral sinus thrombosis
    - Otitis hydrocephalus
    - Septic shock
    - Encephalitis
    - Extradural abscess
    - Labyrinthitis
    - Cholesteatoma

INVESTIGATIONS AND DIAGNOSTIC TESTS

- Do not universally swab otorrhea for culture and sensitivity. Consider culture and sensitivity swab for chronic otorrhea or complex cases. Consultation with a physician/RN(NP) is recommended.
- Pneumatic otoscopy may be used to confirm the presence of MEE.

MAKING THE DIAGNOSIS

Diagnosis of AOM can be made if:

- recent, acute onset symptoms and signs of AOM:
  - Otalgia
- the presence of MEE:
  - Bulging of TM
  - Limited or absent mobility of TM
  - Air fluid level behind the TM (although this may be difficult to detect)
  - Otorrhea
  - Loss of bony landmarks
- signs and symptoms of middle ear inflammation as indicated by either:
  - Distinct erythema of TM; or
  - Distinct otalgia

AOM should not be diagnosed in the absence of MEE (based on pneumatic otoscopy and/or tympanometry).

TM colour may vary.

MANAGEMENT AND INTERVENTIONS

Goals of Treatment

- Relieve pain and fever
- Eradicate infection
- Prevent complications
- Avoid unnecessary use of antibiotics to reduce antibiotic resistance

Appropriate Consultation

- Usually not necessary if the condition is uncomplicated.

Non-Pharmacological Interventions

- None

Pharmacological Interventions

Antipyretics and Analgesia

- Ibuprofen (Motrin) 400-600 mg q8h prn orally (maximum 3.2 g/day)
  Or
- Acetaminophen (Tylenol) 500-1000 mg orally q4-6h prn (maximum 4 g/day)

Antibiotic Treatment

For most clients with suspected acute AOM, a no antibiotic prescribing strategy or a delayed antibiotic prescribing strategy is best.

- When a no antibiotic prescribing strategy is adopted:
  - Inform the client that the average total duration of illness for untreated acute otitis media is 4 days.
  - Offer reassurance that antibiotics are not usually needed because they are likely to make little difference to symptoms, may have adverse effects (e.g., diarrhea, vomiting and rash) and can contribute to antibiotic resistance.
  - Advise the client to return if the condition worsens or if symptoms are not starting to settle within 4 days of the onset of the illness.
- Delayed antibiotic prescribing strategy:
  - A delayed prescribing strategy (delayed antibiotic use) is defined as the use of, or advice to use, antibiotics more than 48 hours after the initial consultation. This strategy is used when it is not clear to the clinician that antibiotic therapy is needed immediately.
  - The decision to use a delayed strategy should only be made if the client can return for follow-up within the agreed upon time.
  - Reassure the client the antibiotics are not needed immediately as they will make little difference to symptoms and may have adverse effects.
  - Advise the client to use the delayed prescription (or dispensed antibiotic) and return for reassessment if symptoms do not settle or get significantly worse.
  - Further information to assist with client education about appropriate antibiotic use is available at: http://www.dobugsneeddrugs.org/guide/ear-ache/
- Treat immediately with antibiotics:

- Clients who are systemically very unwell but who do not require admission
- Clients at high risk for serious complications because of significant heart, lung, renal, liver, or neuromuscular disease, immunosuppression, or cystic fibrosis
- Clients whose symptoms of AOM have already lasted for 4 days or more and are not improving

Amoxicillin (Amoxil) 500 mg orally q8h for 7 days
Or
Azithromycin (Zithromax) 500 mg orally on the first day, then 250 mg orally, daily for the next 4 days

- If client has been on antibiotics in the past 3 months or there is no improvement after 72 hours of treatment with amoxicillin, then discontinue amoxicillin and consider the following:
  - Amoxiclavulin 875 mg orally q12h for 7 days

Pregnant and Breastfeeding Women

- Acetaminophen, amoxicillin and azithromycin may be used as listed above
- Ibuprofen should **not** be used in pregnancy

Client and Caregiver Education

- Advise client/caregiver on timelines of treatment and expected course of disease process.
- Recommend increased rest in the acute febrile phase.
- Counsel client/caregiver about appropriate use of medications (dose, frequency, compliance, etc.).
- Recommend avoidance of air travel until symptoms have resolved.
- Avoid exposure to tobacco smoke.
- Frequent and thorough handwashing.

Monitoring and Follow-Up

- Instruct client to return in 3 days if symptoms do not improve or if symptoms progress despite therapy. Reassess, confirm diagnosis and switch to an alternate treatment.
- Follow-up in 7-14 days if symptoms are not resolved completely.

- Assess hearing 1 month after treatment if any symptoms persist.

Referral

- Usually not necessary if condition is uncomplicated
- Refer to a physician/RN(NP) if symptoms persist despite treatment or recurrent AOM.

DOCUMENTATION

- As per employer policy

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