Acute Otitis Media in Pediatric Populations

What is Acute Otitis Media?

Otitis media begins as an inflammatory process that typically follows a viral upper respiratory tract infection that involves the mucosa of the nose, nasopharynx, middle ear, and Eustachian tubes. Due to the small anatomical space of the middle ear, the edema caused by inflammation blocks part of the Eustachian tube leading to an obstructed exit for exudate to move out of the ear. This causes a series of events resulting in an increase in negative pressure in the middle ear, increasing exudate from the inflamed mucosa, and buildup of mucosal secretions, which allows for the colonization of bacterial and viral organisms in the middle ear. (Danishyar & Ashurst, 2022)

Symptoms of Acute Otitis Media

- Fever
- Otalgia
- Hearing difficulties
- Trouble falling or staying asleep
- Loss of balance
- Otorrhea

Treatment Guidelines

Per the American Academy of Pediatrics (AAP) guidelines which were last revised in 2013:

- Severe bilateral or unilateral AOM in infants 6 months or older with severe signs or symptoms (ie, moderate or severe otalgia or otalgia for at least 48 hours or a temperature ≥39°C (102.2°F): Prescribe antibiotic therapy.
- Bilateral AOM in children younger than 24 months with or without severe signs or symptoms: Prescribe antibiotics.
- Unilateral AOM in children younger than 24 months: Prescribe antibiotic therapy or offer observation with close follow-up based on joint decision-making with the parent(s)/caregiver(s).
- Bilateral or unilateral AOM in children older than 24 months: Prescribe antibiotic therapy or offer observation with close follow-up based on joint decision-making with the parent(s)/caregiver(s).
- When observation is used, a mechanism must be in place to ensure follow-up and begin antibiotic therapy if the child worsens or fails to improve within 48 to 72 hours of onset of symptoms.
- If an antibiotic is used, choose the narrowest spectrum.
    - High-dose amoxicillin is the recommended first-line choice..
        - Children 2 years and younger and those with severe symptoms: A standard 10-day course is recommended.
        - Children between 2 and 5 years of age with mild or moderate AOM: A 7-day course can be equally effective.
        - Shorter courses of 5 to 7 days may be acceptable in low-risk patients (ie, children 6 years and older with mild or moderate symptoms).
        - If it has been used in the last 30 days, consider using amoxicillin-clavulanate potassium (eg, Augmentin) as first-line therapy.
        - If patient is allergic to amoxicillin, use cefdinir (14 mg/kg/d).
            - If recent cefdinir use, use cefpodoxime (10 mg/kg/d). (Bode, 2020)

Clinical Pearls

- Look for a bulging, red tympanic membrane accompanied by fever, ear pulling, irritability, or difficulty sleeping
- Immobility of the tympanic membrane with pneumatic otoscopy suggestive of effusion
- Effusion can last up to three months post-acute infection, effusion alone is NOT a cause for treatment
- First line treatment should be high-dose amoxicillin, unless penicillin allergy.
- Watch and wait method of treatment may be appropriate for children with uncomplicated AOM
- Refer to ENT if patient has four or more recurrent episodes in 12 months or evidence of hearing loss