Acute Otitis Media

Diagnosis:

Key Points

- Acute otitis media (AOM) is a clinical diagnosis.
- Not all AOM require antibiotic treatment.
- Pain control is an important part of therapy.
- Chronic or repeat infections can lead to impaired hearing and speech delay in young children

1. Acute onset of signs and symptoms
2. Signs of middle ear effusion
    a. Bulging of the TM
    b. Limited or absent mobility of the TM
    c. Air-fluid level behind the TM
    d. Otorrhea – drainage from the ear
3. Presence of signs and symptoms of middle-ear inflammation
    a. Distinct erythema of TM

All three findings are necessary for a diagnosis of AOM. If a child has middle ear effusion without signs of inflammation (pain, erythema), then the diagnosis is otitis media with effusion (OME)

Treatment:

- First- start immediate pain control
    - Use simple analgesics (acetaminophen, ibuprofen)
- Determine timing for/need of antibiotics
    - Patients < 6 months of age
        - Start antibiotics at time of diagnosis
    - Patients 6-24 months
        - If certain diagnosis of AOM or severe illness
            - Begin antibiotics immediately
        - If uncertain diagnosis of AOM and non-severe illness
            - May delay antibiotics, observe and treat pain for 48-72 hours
    - Patients > 2 years
        - If certain diagnosis of AOM and severe illness
            - Begin antibiotics upon diagnosis
        - If certain diagnosis of AOM and non-severe illness
            - May delay antibiotics, observe and treat pain for 48-72 hours
        - If uncertain diagnosis of AOM
            - May delay antibiotics, observe and treat pain for 48-72 hours
- If delaying antibiotic use
    - Ensure patient has easy access to follow up
    - May give a prescription that family will only fill if symptoms worsen
    - Only an option in otherwise healthy children
    - Children with concomitant chronic illness or cochlear implant should be treated immediately with antibiotics and have close follow-up with their primary care provider.

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Choosing an Antimicrobial:

Empiric Antimicrobial Selection and Duration		
Outpatient Therapy		**Duration**
First line therapy	Amoxicillin	Age < 2 years: 10 days Age ≥ 2 years: 5 days Ceftriaxone: 1-3 days
If amoxicillin has been taken within the past 30 days, if concurrent purulent conjunctivitis is present, or if the child has a history of recurrent AOM unresponsive to amoxicillin	Amoxicillin-clavulanate	
Beta lactam allergies Amoxicillin/penicillin Cephalosporin	 Cefuroxime or cefpodoxime or ceftriaxone or cefdinir[1] Clindamycin[2]	
Failure to initial therapy after 72 hours Amoxicillin Amoxicillin-clavulanate	 Amoxicillin-clavulanate Ceftriaxone	

[1] Cefdinir has poor bioavailability and should only be considered if other cephalosporin options are unavailable.

[2] Clindamycin does not cover *H. influenzae* or *M. catarrhalis*.

Antimicrobial Dosing				
Antimicrobial	**Weight Based Dose (mg/kg/dose)**	**Maximum Dose (mg)**	**Route**	**Interval (hr)**
Amoxicillin[1]	45	1000	Oral	Q12
Amoxicillin-Clavulanate[2]	45	875 (tablets) 900 (suspension)	Oral	Q12
Cefdinir	7	300	Oral	Q12
Cefpodoxime	5	200	Oral	Q12
Ceftriaxone	50	1000	Intramuscular	Q24
Cefuroxime[3]	15	500	Oral	Q12
Clindamycin[4]	10	600	Oral	Q8

[1] Use 400mg/5mL suspension or 500mg tablets

[2] Use 600mg-42.9mg/5mL suspension or 875mg-125mg tablet

[3] Only tablet formulation available. Do not crush. Crushed tablet has strong, persistent, bitter taste.

[4] Use capsules when possible. Oral suspension has bitter taste. Capsules may be opened and mixed in juice or soft food like applesauce or pudding.

Follow-up

- Not routinely recommended
- May consider follow-up after treatment - young child with severe disease, recurrent disease, parental request
- Consider ENT referral if patient has 3 otitis media infections in 6 months or 4 in 1 year with at least 1 in the last 6 months

References:

Lieberthal AS, Carroll AE, Chonmaitree T, et al. The Diagnosis and Management of Acute Otitis Media. *Pediatrics* (2013) 131 (3): e964–e999.

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