Pediatric Uncomplicated Acute Otitis Media Empiric Treatment Algorithm

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Uncomplicated acute otitis media: a middle ear infection that is **limited** to the middle ear cleft. It is characterized by: rapid onset of symptoms, middle ear effusion, signs and symptoms of middle ear inflammation such as fever, otalgia, and ear discharge.

Concern for uncomplicated AOM

Definitive Diagnosis? Requires *either*
- Moderate or severe bulging of the tympanic membrane ™ or new onset otorrhea not due to otitis externa
- Mild bulging of the TM and recent (<48 h) onset of otalgia (holding, tugging, rubbing of the ear) or intense erythema of the TM

no → Consider alternative diagnosis.

yes

Assess symptoms: Severe symptoms include moderate or severe otalgia, otalgia >48h, or temperature >38 C
- Mild case with unilateral symptoms in children 6-23 months
- Unilateral or bilateral, mild symptoms in children >2 y

no → Consider watchful waiting (via shared decision-making) with follow-up if the child worsens or fails to improve within 48-72hr.

yes

Antibiotic therapy recommended

Dosing recommendations

First-line
Amoxicillin

Second-line
Amoxicillin-clavulanate
- History of amoxicillin use within the last 30 d
- Concurrent purulent conjunctivitis
- History of recurrent AOM

Alternatives for penicillin allergy
- Cefdinir
- Cefuroxime
- Cefpodoxime
- IM Ceftriaxone

Additional Information
- Clinical Pearls
- Pathogens
- Treatment failure
- AAP Guidelines for the Diagnosis and Management of AOM[1]
- AAP Red Book Systems-Based Treatment Table[2]
- Bibliography

Treatment Duration[2]
- < 2 y or severe symptoms: 10 days
- 2 – 5 y: 7 days
- > 5 y: 5 days

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Treatment Considerations

- Cefdinir is not preferred for treatment of pediatric bacterial infections due to (1) poor pharmacokinetic (PK) characteristics; (2) high rates of resistance; and (3) broad but mismatched spectrum of coverage3,4,5
- Acetaminophen or ibuprofen are recommended for treatment of mild to moderate pain
- Amoxicillin-clavulanate products are not interchangeable. Incorrect ratios could lead to subtherapeutic concentrations or severe diarrhea. High-dose, BID regimens should use 14:1 or 16:1 formulations: 600mg/42.9mg per 5 mL (ES) or 1000mg/62.5mg (Extended Release) tablet
- Up to 90% of penicillin allergies are misdiagnosed. Always clarify history of allergy and de-label if appropriate (e.g. family history without patient history). For more information on patient screening, contact the ASP pharmacist (502-629-5568) or consider referral to outpatient allergy.

Common AOM Bacterial Pathogens

- *Streptococcus pneumonia*
- Nontypeable *Haemophilus influenza*
- *Moraxella catarrhalis*

Treatment Failure

- After 48-72h of failure of initial antibiotic treatment (dosing below)
- First-line:
  - Amoxicillin-clavulanate
  - IM Ceftriaxone
- Alternative:
  - Clindamycin +/- 3rd generation cephalosporin (cefdinir, cefpodoxime, ceftriaxone)
  - Consider tympanocentesis or consultation with a specialist

Dosing Recommendations

- Amoxicillin 80-90 mg/kg/day oral BID (max 4,000 mg/day)
- Amoxicillin-clavulanate 90 mg/kg per day oral in 2 divided doses (max 4,000 mg amoxicillin/day)
  - Using ES-600 suspension or 1000 mg/62.5 mg ER tablet
- Cefdinir 14 mg/kg/day oral BID (max 600 mg/day)
  - 2 doses daily preferred for PK characteristics
- Cefuroxime 30 mg/kg/day oral BID (max 500 mg/dose)
- Cefpodoxime 10 mg/kg/day oral BID (max 200 mg/dose)
- Ceftriaxone 50 mg/kg IM or IV per day for 1-3 days

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Bibliography

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