Pediatric Uncomplicated Acute Otitis Media (AOM) Empiric Treatment Algorithm

Kentucky ANTIBIOTIC Awareness

Concern for AOM

Definitive diagnosis? Requires *either*:
- Moderate or severe bulging of the tympanic membrane (TM) or new onset otorrhea not due to otitis externa
- Mild bulging of the TM and recent (<48h) 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 >2y

Yes → Consider **watchful waiting** (via shared decision-making) with follow-up if the child worsens or fails to improve within 48-72h

No

Antibiotic therapy recommended

Refer to page 2 for dosing recommendations

First-line
Amoxicillin

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

Alternatives for Allergy
Cefdinir
Cefuroxime
Cefpodoxime
IM Ceftriaxone

Additional Information
- Refer to page 2
- AAP Guidelines for the Diagnosis and Management of AOM[1]
- AAP Red Book Systems-Based Treatment Table[2]

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

Pediatric Acute Otitis Media (AOM) Clinical Pearls

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 coverage[3,4,5]
- 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 a full allergy assessment and testing, consider referral to outpatient allergy.

Common AOM Bacterial Pathogens

- *Streptococcus pneumoniae*
- Nontypeable *Haemophilus influenzae*
- *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

AOM Antibiotic Dosing

- **Amoxicillin** 80-90 mg/kg 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 oral BID (max 600 mg/day)
  - 2 doses daily preferred for PK characteristics
- **Cefuroxime** 30 mg/kg oral BID (max 500 mg/dose)
- **Cefpodoxime** 10 mg/kg oral BID (max 200 mg/dose)
- **Ceftriaxone** 50 mg/kg IM or IV per day for 1-3 days

References

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3. Wattles B, Vidwan N, Ghosal S, Feygin Y, Creel L, Myers J, Woods C, Smith M. Cefdinir use in the Kentucky Medicaid population: a priority for outpatient antimicrobial stewardship. Journal of the Pediatric Infectious Diseases Society. 2021 Feb;10(2):157-60.
4. Parker S, Mitchell M, Child J. Cephem antibiotics: wise use today preserves cure for tomorrow. Pediatr Rev 2013; 34:510–23; quiz 523–4.
5. Harrison CJ, Woods C, Stout G,*et al*. Susceptibilities of*Haemophilus influenzae*,*Streptococcus pneumoniae*, including serotype 19A, and*Moraxella catarrhalis*paediatric isolates from 2005 to 2007 to commonly used antibiotics. J Antimicrob Chemother 2009; 63:511–9.

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