Acute Otitis Media Management

(Excluding infants <2 months of age, and children with comorbid conditions increasing the risk of severity of AOM including immunodeficiencies, craniofacial abnormalities, or sensory deficits.)

Developed in conjunction with the Rady Children's Specialists of San Diego, division of Otolaryngology.

	2 months to <6 months	6 months to <2 years	2 to 5 years	6 years and older
Uncertain[i] diagnosis	• Pain management[ii] • **Amoxicillin** 80-90 mg/kg/day ÷ BID or TID[iii] OR **Amoxicillin-Clavulinic Acid**[iv] (Augmentin ES) 80-90 mg/kg/day of the amoxicillin component ÷ BID x **10** days	• Pain management and observation with Safety Net Antibiotic Prescription (SNAP)[v]	• Pain management and observation with SNAP[v]	• Pain management and observation with SNAP[v]
Certain diagnosis: Mild to moderate illness (mild otalgia and fever <39C in the last 24 hours)	• Pain management • **Amoxicillin** 80-90 mg/kg/day ÷ BID or TID OR **Amox/clav**[iv] 80-90 mg/kg/day ÷ BID x **10** days	• Pain management • **Amoxicillin** 80-90 mg/kg/day ÷ BID or TID OR **Amox/clav**[iv] 80-90 mg/ kg/day ÷ BID x **10** days OR for unilateral infections, may observe with SNAP[v]	• Pain management • **Amoxicillin** 80-90 mg/kg/day ÷ BID or TID OR **Amox/clav**[iv] 80-90 mg/kg/day ÷ BID x **5** days OR may observe with SNAP[v]	• Pain management and observation with SNAP[v]
Fever ≥39C, severe otalgia or with accompanying conjunctivitis	• Pain management • **Amoxicillin** 80-90 mg/kg/ day ÷ BID or TID OR **Amox/clav**[iv] 80-90 mg/kg/ day ÷ BID x **10** days	• Pain management • **Amoxicillin** 80-90 mg/kg/day ÷ BID or TID OR **Amox/clav**[iv] 80-90 mg/kg/day ÷ BID x **10** days	• Pain management • **Amoxicillin** 80-90 mg/kg/day ÷ BID or TID OR **Amox/clav**[iv] 80-90 mg/kg/ day ÷ BID x **10** days	• Pain management • **Amoxicillin** 80-90 mg/kg/day ÷ BID or TID OR **Amox/clav**[iv] 80-90 mg/kg/ day ÷ BID x 5 days
Children with PETs in place	Despite the fact that most cases of otorrhea in children with ear tubes are not true AOM, they should be treated initially with otic drops (**ofloxacin** or **ciprofloxacin** with or without steroids). The suggested dose for children under 4 is 2-3 drops BID, and for children over 4, 5 drops BID, for 5-7 days. If the child has symptoms of AOM (pain interfering with activity/sleep, with or without fever) they should follow the AOM guidelines as well as using the ear drops for aural hygiene. Cases of otorrhea that are refractory to ear drops should be evaluated by the ENT.			

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Reevaluation	Physicians should reassess the patient if the caregiver reports that the child's symptoms have worsened or failed to respond to the initial antibiotic treatment within 48 to 72 hours and determine whether a change in therapy is needed. Counsel parents to return for reevaluation in 8-12 weeks to assess for the persistence of middle ear effusions IF there are any signs or symptoms of hearing loss.
Otolaryngology referrals	Refer to otolaryngology for more than 3-4 cases of AOM in 6 months or 5-6 in a year, middle ear fluid that persists >12 weeks, concerns for mastoiditis or other complications, perceived need myringotomy and tube placement, refractory otorrhea in children with PETS or abnormal audiologic evaluation after resolution of the AOM. Prophylactic antibiotics are NOT INDICATED to reduce the frequency of episodes of AOM in children with recurrent AOM.

Atypical situations

Penicillin allergic (anaphylaxis/urticarial)	**Levofloxacin** 20 mg/kg/da6 PO div bid for children 6 months to 5 years, and 10 mg/kg (max 500 mg) qd for 5 years and older (preferably one hour before eating). Macrolides and TMP/SMX not recommended due to high levels of pneumococcal resistance.
Penicillin allergic (not a type 1 hypersensitivity reaction)	**Cefdinir** (14 mg/kg per day in 1 or 2 doses), **Cefpodoxime** (5 mg/kg BID, for ages 2 months-12 years), or **Cefuroxime** (30 mg/kg per day in 2 divided doses) x 5-10 days, or **Levofloxacin** 20 mg/kg/da6 PO div bid for children 6 months to 5 years, and 10 mg/kg (max 500 mg) qd for 5 years and older (preferably one hour before eating).
Unable to tolerate oral antibiotics	IM **Ceftriaxone** 50 mg/kg as a single dose
Therapeutic failure - Amoxicillin	High-dose **amoxicillin-clavulanate**
Therapeutic failure - Amox-clav	**Cefdinir** (14 mg/kg per day in 1 or 2 doses), **Cefpodoxime** (5 mg/kg BID, for ages 2 months -12 years), or **Cefuroxime** (30 mg/kg per day in 2 divided doses) x 5-10 days, or **Levofloxacin** 20 mg/kg/da6 PO div bid for children 6 months to 5 years, and 10 mg/kg (max 500 mg) qd for 5 years and older (preferably one hour before eating)
Therapeutic failure - cefdinir, cefpodoxime, cefuroxime or single- dose ceftriaxone	IM **Ceftriaxone** 50 mg/kg QD x 3 days
Therapeutic failure - IM ceftriaxone	Otolaryngology referral is recommended. Prophylactic antibiotics are NOT INDICATED to reduce the frequency of episodes of AOM in children with recurrent AOM.

Block SL, Doern GV, Pfaller MA. Oral beta-lactams in the treatment of acute otitis media. Diagn Microbiol Infect Dis. 2007 Mar;57(3 Suppl):19S-30S.

Chow AW, Benninger MS, Brook I, Brozek JL, Goldstein EJ, Hicks LA, Pankey GA, Seleznick M, Volturo G, Wald ER, File TM Jr. IDSA clinical practice guideline for acute bacterial rhinosinusitis in children and adults. Clin Infect Dis. 2012 Apr; 54(8):e72-e112.

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[i] *A certain diagnosis of otitis media requires ALL of the following:*

- *Rapid onset (recent and generally abrupt), and either:*
  - *Middle ear effusion (bulging TM, decrease mobility of TM, air fluid level, or otorrhea), OR*
  - *Signs and symptoms of inflammation (erythema of TM, distinct otalgia interfering with activities/sleep)*

[ii] *Prolonged or prophylactic antibiotics, steroids, antihistamines, decongestants are no longer recommended in the management of AOM. Topical analgesics may be used if there is certainty that the TM is intact.*

[iii] *Unless penicillin allergic or has been on amoxicillin in the last month*

[iv] *Indicated for children who are not penicillin allergic and either have received amoxicillin in the last 30 days, or have concurrent purulent conjunctivitis, or have a recurrent history of AOM unresponsive to amoxicillin. The introduction of pneumococcal vaccines has changed the microbiology of AOM tso that roughly a quarter of infections are now resistant to amoxicillin. We believe that current, high-quality data on beta-lactamase producing pathogens causing AOM in an otherwise healthy, immunized child are insufficient to make a clear statement on the preference of amoxicillin over amox/clav. While amoxicillin has a narrower spectrum and is better tolerated than amox/clav, if 60-70% of otitis is caused by Haemophilus now, and 30-40% of strains are beta-lactamase positive, then roughly 2-3 out every 10 children with otitis will not respond to amoxicillin alone. Practitioners may choose to use either amoxicillin or amox/clav to treat acute bacterial otitis media, based on how risk of failure is viewed for a particular child, and for a particular family. These recommendations may change as more data are published.*

The observation option requires access to follow-up evaluation and antimicrobial therapy if symptoms persist or worsen. A SNAP can be written for the family to hold - to be used within 5 days of the office visit only.

[v]. *Adapted from the AAP 2004 Diagnosis and Management of Acute Otitis Media; Reviewed 10.2.24*