ACUTE OTITIS MEDIA (AOM) (Children)

Symptoms and Diagnosis

NON-AOM CONDITIONS
- Normal-appearing ear drum
- Middle ear effusion without inflammation
- Inflammation of ear canal
- Pain with mild traction to outer ear

See back for differential diagnosis details.

AOM
- Bulging tympanic membrane
- New onset otorrhea (not due to acute otitis externa)
- Intense erythema of the tympanic membrane with new onset otalgia

Non-severe AOM is defined as mild otalgia for < 48 hours and temperature < 39°C (102°F).

Severe AOM is defined as moderate or severe otalgia, otalgia for > 48 hours, or temperature > 39°C (102°F).

Treatment

The following cases should always be treated with antibiotics:
- AOM with otorrhea
- Severe AOM (unilateral or bilateral)
- Any AOM in infants < 6 months (infants < 2 months may require additional infectious work up)

Consider watchful waiting without antibiotic therapy (see table)
- When watchful waiting is used, ensure follow-up and begin antibiotic therapy if patient is worsening or not improving within 48-72 hours

<table>
<thead>
<tr>
<th>Age</th>
<th>Bilateral non-severe AOM without otorrhea</th>
<th>Unilateral non-severe AOM without otorrhea</th>
</tr>
</thead>
<tbody>
<tr>
<td>6-23 months</td>
<td>Antibiotic therapy</td>
<td>Watchful waiting or antibiotic therapy</td>
</tr>
<tr>
<td>&gt; 23 months</td>
<td>Watchful waiting or antibiotic therapy</td>
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</table>

SYMPTOMATIC TREATMENT
- Extra rest, warm drinks, oral hydration
- Analgesics/antipyretics, as needed
- Avoid cigarette smoke; offer smoking cessation resources, if indicated

Offer positive recommendations using this Symptomatic Prescription Pad: https://go.usa.gov/xRPXy

NOTE: See back for help when discussing non-antibiotic treatment plan with patients.

FIRST-LINE ANTIBIOTIC THERAPY
- Amoxicillin (high-dose)

NOTE: For children with AOM and concurrent purulent conjunctivitis, use of amoxicillin in prior month, or history of recurrent treatment failures on amoxicillin, prescribe amoxicillin-clavulanate.

SECOND-LINE ANTIBIOTIC THERAPY
- Amoxicillin-clavulanate (high-dose)
- Cefdinir, cefpodoxime, cefuroxime, or ceftriaxone

See other side for dosing information.
**DIFFERENTIAL DIAGNOSIS DETAILS**

- Middle ear effusion without inflammation suggests Otitis Media with Effusion (OME), a collection of non-infected fluid in the middle ear due that may be due to viral URI, allergies, irritant exposure, eustachian tube dysfunction, or resolving AOM.
- Pain with mild traction to outer ear and normal appearing ear drum may indicate otitis externa.
- Recurrent AOM (> 2 episodes in 6 months or > 3 episodes in 1 year) in children is an indication for referral for tympanostomy tube placement.

**BEST PRACTICES FOR COMMUNICATING WITH PATIENTS**

- Identify and validate patient’s and parent’s concerns
- Provide clear recommendations including specific symptom treatment and contingency plan for if symptoms worsen
- Confirm agreement and answer questions
- Provide education about antibiotic use and associated risks, including bacterial resistance and *C. difficile*

**POTENTIAL HARS ASSOCIATED WITH ANTIBIOTIC USE**

- May cause significant side effects, such as antibiotic-associated diarrhea and allergic reactions
- Can increase the risk of carrying a drug-resistant organism which may decrease the effectiveness of antibiotics in the future and make an infection more severe
- Can result in a diarrheal disease caused by *C. difficile* which can be severe and even fatal

Visit CDC’s Common Illnesses index at [https://go.usa.gov/xRPXH](https://go.usa.gov/xRPXH) for patient education materials.

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### Antibiotic Therapy for AOM

<table>
<thead>
<tr>
<th>DRUG</th>
<th>DOSE</th>
<th>DURATION</th>
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</thead>
<tbody>
<tr>
<td>Amoxicillin</td>
<td>Child high-dose: 80-90mg/kg/day PO divided in 2 doses, max 2 mg/dose</td>
<td>5-7 days for non-severe AOM and age ≥ 2 years</td>
</tr>
<tr>
<td></td>
<td><strong>NOTE:</strong> High-dose amoxicillin is recommended for pediatric otitis media because &gt;10% <em>Strep pneumoniae</em> isolates are non-susceptible in Washington.</td>
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<tr>
<td>Amoxicillin-clavulanate</td>
<td>Child high-dose: 90 mg/kg/day (amoxicillin component) PO divided in 2 doses, max 2 gm/dose</td>
<td>10 days for severe AOM or age &lt; 2 years</td>
</tr>
<tr>
<td></td>
<td><strong>NOTE:</strong> High-dose amoxicillin-clavulanate is recommended for pediatric otitis media because &gt;10% <em>Strep pneumoniae</em> isolates are non-susceptible in Washington.</td>
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<tr>
<td>Cefdinir</td>
<td>Child: 14 mg/kg/day PO divided in 1-2 doses</td>
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<tr>
<td>Cefpodoxime</td>
<td>Child: 10 mg/kg/day PO divided in 2 doses</td>
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<tr>
<td>Cefuroxime</td>
<td>Infants &gt; 2 months and children: 30mg/kg PO divided in 2 doses (max 500mg per dose)</td>
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<tr>
<td>Ceftriaxone</td>
<td>Child: 50 mg/kg IM or IV QD for 1 or 3 days</td>
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**ANTIBIOTIC ALLERGY**

Most patients who report antibiotic allergies, particularly penicillin class allergies, do not have true drug allergies. It is important to carefully evaluate reported drug allergies starting with a history before determining whether an alternative agent is indicated.

**NOTE:** This guidance is not meant to replace the clinical judgment of the individual provider or establish a standard of care.

**REFERENCES**