PRACTICE GUIDANCE FOR JUDICIOUS USE OF ANTIBIOTICS

Striving for better outcomes for individual patients, improved population health, and lower healthcare costs

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 (102F°).

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

Age	Bilateral non-severe AOM without otorrhea	Unilateral non-severe AOM without otorrhea
6-23 months	Antibiotic therapy	*Watchful waiting or antibiotic therapy*
> 23 months	*Watchful waiting or antibiotic therapy*	*Watchful waiting or antibiotic therapy*

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.

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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 HARMS 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 for patient education materials.

Antibiotic Therapy for AOM

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

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

1. Liberthal AS, et al., The Diagnosis and Management of Acute Otitis Media: American Academy of Pediatrics Clinical Practice Guideline. Pediatrics 2013;131(3): e964-e999.
2. Limb CJ, et al., Acute otitis media in adults. In: UpToDate, Libman H (Ed), UpToDate, Waltham, MA. Accessed on February 16, 2017.

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