Midland Quality Alliance

MIDLAND QUALITY ALLIANCE

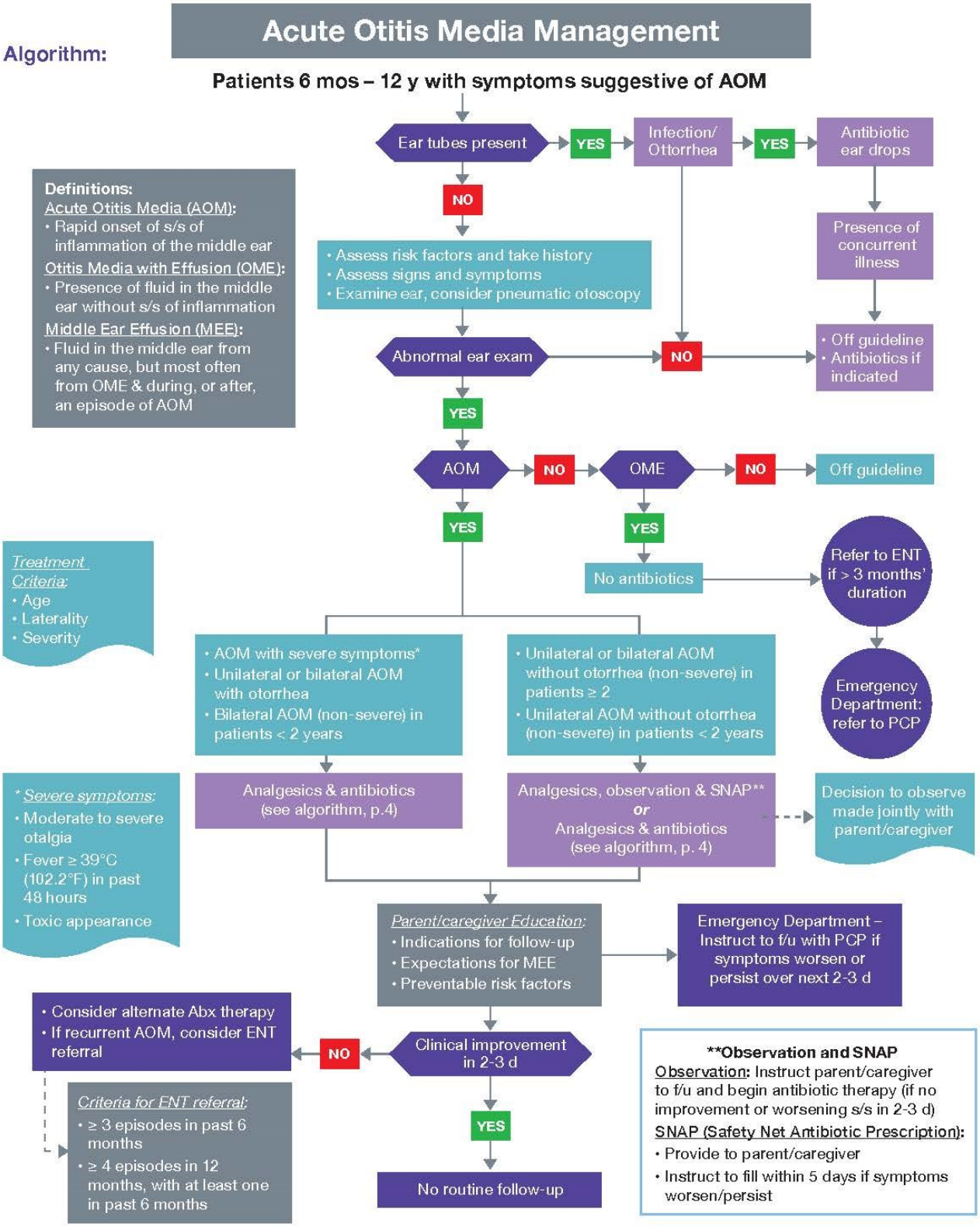
ALGORITHM FOR MANAGEMENT OF

ACUTE OTITIS MEDIA MANAGEMENT

Revised May 2018

Midland Quality Alliance

Algorithm:


Acute Otitis Media Management
Patients 6 mos – 12 y with symptoms suggestive of AOM
Ear tubes present
YES
Infection/ Ottorrhea
YES
Antibiotic ear drops
NO
Presence of concurrent illness
• Assess risk factors and take history
• Assess signs and symptoms
• Examine ear, consider pneumatic otoscopy
Abnormal ear exam
NO
• Off guideline
• Antibiotics if indicated
YES
AOM
NO
OME
NO
Off guideline
YES
YES
No antibiotics
Refer to ENT if > 3 months' duration
Emergency Department: refer to PCP
Definitions:
Acute Otitis Media (AOM):
• Rapid onset of s/s of inflammation of the middle ear
Otitis Media with Effusion (OME):
• Presence of fluid in the middle ear without s/s of inflammation
Middle Ear Effusion (MEE):
• Fluid in the middle ear from any cause, but most often from OME & during, or after, an episode of AOM
Treatment Criteria:
• Age
• Laterality
• Severity
• AOM with severe symptoms*
• Unilateral or bilateral AOM with otorrhea
• Bilateral AOM (non-severe) in patients < 2 years
• Unilateral or bilateral AOM without otorrhea (non-severe) in patients ≥ 2
• Unilateral AOM without otorrhea (non-severe) in patients < 2 years
* Severe symptoms:
• Moderate to severe otalgia
• Fever ≥ 39°C (102.2°F) in past 48 hours
• Toxic appearance
Analgesics & antibiotics (see algorithm, p.4)
Analgesics, observation & SNAP**
or
Analgesics & antibiotics (see algorithm, p. 4)
Decision to observe made jointly with parent/caregiver
Parent/caregiver Education:
• Indications for follow-up
• Expectations for MEE
• Preventable risk factors
Emergency Department – Instruct to f/u with PCP if symptoms worsen or persist over next 2-3 d
• Consider alternate Abx therapy
• If recurrent AOM, consider ENT referral
NO
Clinical improvement in 2-3 d
YES
No routine follow-up
Criteria for ENT referral:
• ≥ 3 episodes in past 6 months
• ≥ 4 episodes in 12 months, with at least one in past 6 months
**Observation and SNAP
Observation: Instruct parent/caregiver to f/u and begin antibiotic therapy (if no improvement or worsening s/s in 2-3 d)
SNAP (Safety Net Antibiotic Prescription):
• Provide to parent/caregiver
• Instruct to fill within 5 days if symptoms worsen/persist

Management:

Antibiotics vs. Observation

Recommendations for management should be based on age, exam (laterality and severity), prior history of Otitis Media, and confidence of follow-up. (See Acute Otitis Media Management algorithm)

Observation notes:

The decision to observe should be made jointly between the provider and parents/guardian. If observation or SNAP (Safety Net Antibiotic Prescription) is offered, it should be valid for only 5 days and there must be a method in place for close-follow-up and a means to begin antibiotics if symptoms fail to improve or worsen in 48 to 72 hours.

Decision to observe should be accompanied by:

- Parent information/education:
  - Self-limited nature of most AOM, especially in older children
  - Importance of pain medication
  - Potential adverse effects of antibiotic therapy

Recurrent or Persistent AOM:

- Recurrent AOM (RAOM) – Consider alternative antibiotic therapy
  - ***There is no role for prophylactic antibiotics in children with recurrent AOM***
- Consider ENT referral for persistent ear fluid of more than 3 months or 3 recurrent ear infections in 6 months or 4 recurrent ear infections in a year.

Tympanostomy tube placement:

- Role is controversial but tube placement has been shown to decrease recurrent ear infections and persistent middle ear fluid as well as improve disease-specific quality of life measures for children with conditions such as the following: hearing loss, speech impairment, caregiver concerns, emotional distress, and physical distress associated with recurrent AOM.

Follow-up recommendations:

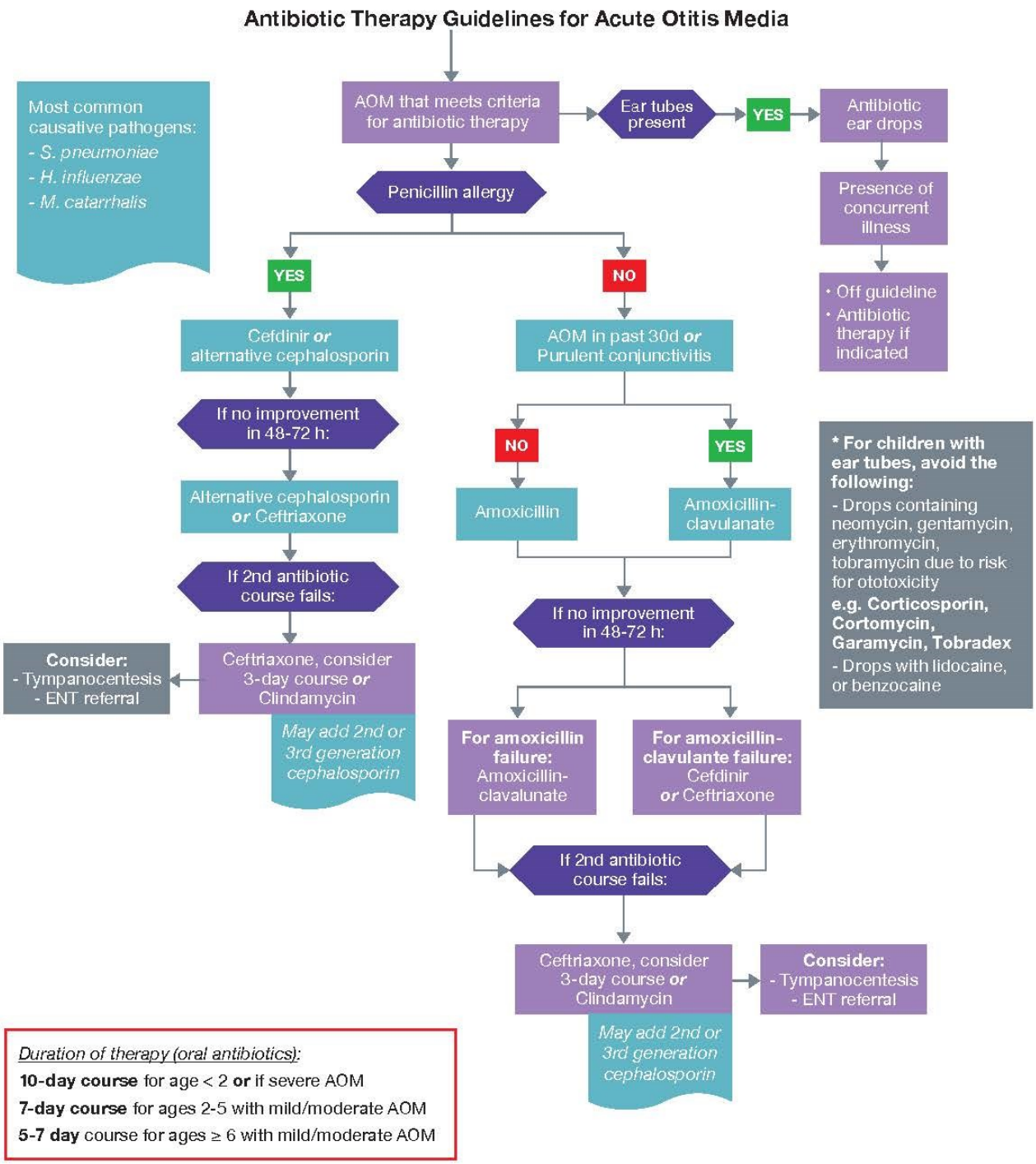
- Little evidence to support routine two-week follow-up visits for children with uncomplicated AOM, since two weeks after antibiotic treatment 60-70% of children have middle ear effusion (MEE) which does not need treatment. However, 10-20% of ear fluid does not resolve in three months and would need referral to ENT. Caregivers may want to follow-up to rule out persistent ear fluid at this time.
- Providers may choose to assess some children in follow-up sooner than 3 months, for example:
  - Patients who exhibit severe symptoms
  - Patients with recurrent AOM
  - At parent/caregiver request

Preventive measures:

- Immunizations: Pneumococcal conjugate vaccine (PCV 13), Annual influenza vaccine
- Exclusive breastfeeding for at least the first 6 months of life
- Avoidance of tobacco exposure
- Avoidance of supine bottle feeding
- Reduction or elimination of pacifier use in the second 6 months of life

Algorithm:

Antibiotic Therapy



Duration of therapy (oral antibiotics):

10-day course for age < 2 **or** if severe AOM

7-day course for ages 2-5 with mild/moderate AOM

5-7 day course for ages ≥ 6 with mild/moderate AOM

Antibiotics:

- Choice of antibiotic is based upon the three most common pathogens involved: *S. pneumoniae,* nontypeable *H. influenzae* and *M. catarrhalis.*

TREATMENT

Amoxicillin - recommended first-line therapy for most patients

- Amoxicillin should be used if:
  - Patient has not received amoxicillin in past 30 days
  - No evidence of concurrent purulent conjunctivitis
  - No penicillin allergy
  - Dosing: Amoxicillin 80-90 mg/kg/day PO in 2 divided doses
- Amoxicillin is recommended as first-line therapy due to its effectiveness against common AOM bacterial pathogens, safety, low cost, acceptable taste and narrow microbiologic spectrum.

The following should be considered when determining appropriate treatment:

- Trimethoprin-sulfamethoxazole and erythromycin-sulfisoxazole are not appropriate therapies if patients fail to improve on amoxicillin, because of substantial pneumococcal resistance.
- Macrolides, such as erythromycin and azithromycin, have limited efficacy against *H. influenzae* and *S.pneumoniae*.

Antibiotic drops:

- Consider adding drops if otorrhea is present.
- Recommended drops:
  - Ciprofloxacin-dexamethasone or Ofloxacin
    (See Appendix A for dosing instructions)
- ***IF tympanostomy tubes are present, use ear drops only – NO oral antibiotics***
  - ***Avoid*** drops containing the following:
    - Gentamycin, neomycin, erythromycin, tobramycin – due to risk for ototoxicity
      - e.g. Corticosporin, Cortomycin, Garamycin, Tobradex
    - lidocaine, or benzocaine

Duration of antibiotic therapy:

- For children < 2 years, and those with severe symptoms: 10-day course
- For children 2-5 years, with mild-moderate AOM: 7-day course is equally effective
- For children > 6 years, with mild-moderate AOM: 5-7 day course is adequate

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Disclaimer: *The guideline is not intended to impose standards of care preventing selective variation in practice that is necessary to meet the unique needs of individual patients. The physician must consider each patient and family's circumstance to make the ultimate judgment regarding best care.*

Appendix A

Antibiotic Treatment for Acute Otitis Media: Dosing Recommendations

Medication	Dosing	Max Daily Dose
Amoxicillin	80-90 mg/kg/day in 2 doses	4000 mg
Amoxicillin-clavulanate (Augmentin*)	90 mg/kg/day (amoxicillin component) in 2 doses	4000 mg (amoxicillin component)
Cefdinir (Omnicef)	14 mg/kg/day in 1-2 doses	600 mg
Cefuroxime (Ceftin)	30 mg/kg/day in 2 doses	1000 mg – oral suspension 500 mg – tablet
Cefpoxodime (Vantin)	10 mg/kg/day in 2 divided doses	400 mg
Ceftriaxone (Rocephin) IM	50 mg/kg/day (for 1-3 days)	1000 mg
Clindamycin (Cleocin)	30-40 mg/kg/day in 3 doses	1800 mg
Antibiotic Drops**		
Ciprofloxacin & Dexamethasone (Ciprodex)	4 gtts to affected ear(s) BID for 7 days	N/A
Ofloxacin (Floxin) For patients 1-2 years of age	5 gtts to affected ear(s) BID for 10 days	N/A
Ofloxacin (Floxin) For patients > 12 years	10 gtts to affected ear(s) BID for 14 days	N/A

* If available, Augmentin ES is preferable to Augmentin, since the lesser clavulanate dose in the ES formulation reduces the risk for diarrhea.

** Ear drops containing aminoglycosides, peroxide, lidocaine and benzocaine are contraindicated for patients with intact tympanostomy tubes, due to the risk for ototoxicity.

References

1. Lieberthal, A.S., Carroll, A.E. Chonmaitree, T., et al. "The Diagnosis and Management of Acute Otitis Media." Pediatrics. 2013; DOI: 10.1542/peds.2012-3488.
2. Chee, J., Pang, K.W., Yong, J.M, et al. "Topical versus oral antibiotics, with or without corticosteroids, in the treatment of tympanostomy tube otorrhea." International Journal of Pediatric Otorhinolaryngology. 2016 Jul; 86:183-8. DOI: 10.1016/j.ijporl.2016.05.008. Epub 2016 May 11.