ACUTE OTITIS MEDIA

2016 CPS Position Statement Summary

Pathogenesis

Upper Respiratory Tract Infection⇒ Mucosal inflammation & edema ⇒
Eustachian tube obstruction⇒ Fluid stasis in middle ear⇒ Bacterial + viral colonization ⇒ **AOM**

Risk factors

Children related	
1. Higher prevalence of viral infections 2. Shorter and more horizontal Eustachian tube (ET)	
Modifiable risk factors	**Non-modifiable risk factors**
• Household crowding • Cigarette smoke • Shorter duration of breastfeeding • Prolonged bottle feed while lying down • Pacifier use	• Young age • Orofacial abnormalities (eg. cleft palate) • First Nation or Inuit ethnicity • Family history • ↓ levels of IgA

Bacteria

Bacteria	1. *S. pneumoniae** 2. Group A Streptococcus**	3. *M. catarrhalis* 4. *H. influenzae*
Clinical presentation	**More** virulent Less likely to resolve spontaneously	Generally **less** virulent More likely to resolve spontaneously
Antibiotic choice	*Excellent penicillin susceptibility rate* **Amoxicillin**	*More likely to produce beta-lactamases* **Amoxicillin-clavulanate**

* Most common bacteria in AOM. ** More commonly associated with perforated TM.

Diagnostic criteria

1. Middle ear **effusion** + **inflammation**	***Otoscopy***	• Bulging TM
	Pneumatic otoscope	• ↓ TM mobility
2. **Acute onset** symptoms	• Systemic symptoms: ○ Difficulty sleeping, irritability, fever • Otalgia, otorrhea	

Severity criteria: determine need for antibiotic therapy

1. Moderately or severely ill	Irritability, difficulty sleeping, severe otalgia
2. Fever	≥39°C or poor response to antipyretics
3. **Duration** of symptoms	>48 h

Treatment pearls

Vaccination	Pneu C-13
Prevention	↓ **Modifiable risk factors**: ↑ duration of breastfeed, ↓ exposure to cigarette smoke, ↓ bottle feed while lying down
Observation	If absence of severity criteria, "watchful waiting" period acceptable for 24-48 h: 1. Planned reassessment 2. Access to timely reassessment 3. "Expectant" antimicrobial prescription
Analgesia/Antipyretics	Ibuprofen, Acetaminophen
Antibiotics	First line: **Amoxicillin** **See table below*
Reference to other specialists	**Infectious disease**: Antibiotic choice for complicated cases
	ENT: Tympanocentesis to determine etiologic agent and appropriate therapy

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ANTIBIOTIC THERAPY

First line antibiotic therapy		**Amoxicillin**	• **45-60** mg/kg divided **TID** • **75-90** mg/kg divided **BID**	PO: Caps or suspension	x 5 d
		Prolonged therapy criteria: • 6 months old to 2 y.o. • Recurrent AOM • Perforated TM • Failure of initial therapy			x 10 d
Penicillin allergy	**Nonlife-threatening reaction** • E.g. rash	*2nd generation cephalosporin* **Cefuroxime-axetil**	**30** mg/kg **OD**	PO: Tablet or suspension	x10 d
		3rd generation cephalosporin **Ceftriaxone**	**50** mg/kg **OD**	IM/IV	x 3 d
	Life threatening reaction • Angioedema • Bronchospasm • Hypotension	*Macrolide/azalide* **Clarithromycin**	**15** mg/kg divided **BID** (Max 1 g/day)	PO	x 10 d
		Macrolide/azalide **Azithromycin**	**Day 1: 10** mg/kg in one dose (Max 500 mg/day) **Day 2-5: 5** mg/kg **OD** (Max 250 mg/day)	PO	x 5 d
		Clindamycin	**Mild to moderate: 10-25** mg/kg **TID** **Severe**: **30-40** mg/kg divided **TID** (Max 1.8 g/day)	PO	x 10 d
Failure of initial therapy*	• Symptoms **persist** or **worsen** under appropriate amoxicillin treatment ⇒ Infection probably due to beta-lactamases producing bacteria (***M. catharralis*** or ***H. Influenzae***)	**Amoxicillin-clavulanate**	**≤ 35 kg:** **45-60** mg/kg divided **TID** (Specify 400 mg/5 ml suspension of 7:1 formulation)	Suspension	x 10 d
			>35 kg: **500** mg **TID**	PO: tablets	
	• Failure of amoxicillin-clavulanate or • Orals drugs not tolerated	**Ceftriaxone**	**50** mg/kg **OD**	IM/IV	x 3 d
Children > 8 y.o.		**Doxycycline & Quinolones**	**Consultation with an ID physician should be considered before initiation**		

***Antibiotic efficacy criteria**: ↓ Symptoms <24 h, Symptoms resolve 2-3 d