ACUTE OTITIS MEDIA

ETIOLOGY

- Bacterial (92%)
  - *S. pneumoniae*
  - *H. influenza*
  - *M. catarrhalis*
- Viral (70%)
- Co-infection (66%)

RISK FACTORS

- Day care attendance
- Older siblings
- Household crowding
- Young age (6 – 18 months)
- Family history of AOM
- First Nations or Inuit ethnicity
- Absence or short duration of breastfeeding (<3 months)
- Supine feeding
- Pacifier use
- Male gender
- Craniofacial anomaly
- Immunologic deficiency
- Lower socioeconomic status
- Environmental tobacco smoke
- Seasonal (fall and winter months)

PREVENTION

- Vaccination against AOM pathogens (i.e. pneumococcal conjugate vaccine)
- Risk factor modification
  - Exposure to tobacco smoke
  - Exposure to other children
  - Feeding child with head elevated
  - Breastfeeding (protective)
  - Avoid pacifiers
- Avoid settings that increase a child's exposure to cold virus
- Prophylaxis antibiotic (NNT = 5), likely will lead to bacterial resistance

REFERRAL

- Treatment failures or recurrences unresponsive to therapy
- Frequent, recurrent episodes of AOM (≥ 3 ep in 6 m or (≥ 4 ep in 12 m)
  - ENT specialist
  - Audiology assessment (monitor for hearing loss)

GOALS OF THERAPY

- Relieve symptoms (e.g. fever, irritability, pain)
- Eradicate bacteria
- Prevent complications
- Avoid inappropriate abx therapy
- Prevent or minimize ADRs

COMPLICATIONS

- Bullous myringitis
- Acutely perforated tympanic membrane with purulent otorrhea
- Mastoiditis (rare)
- Otitis media with effusion
  - Can persist up to 3 months
  - Evaluate for hearing loss

SYMPTOMS

- Fever
- Symptoms of viral URTI (e.g. cough)
- Otalgia
  - In infants, may be communicated by irritability, tugging ear, rubbing head
- Malaise
- Decreased playfulness
- Difficulty sleeping

SIGNS

- Red erythematous, displaced or building, opaque and immobile tympanic membrane
- Presence of fluid in middle ear cavity (*middle ear effusion)*
- Acute perforation with purulent discharge *(otorrhea)*
- Check head and neck region to rule out other causes of referred pain to ear

WATCHFUL WAITING

- 60% of AOM cases resolve spontaneously within 24 hours
- Consider watchful waiting for first 48 hours in children > 6 months of age if:
  - Non-severe illness (mild otalgia, fever > 39° C)
  - Uncomplicated AOM
  - Parents capable of recognizing worsening illness with ready access to medical care

IMMEDIATE ANTIBIOTIC USE

- Bulging TM who are febrile (>39° C) and moderately-severe systemically ill
- Severe otalgia or significantly ill for 48 hours
- Perforated TM and purulent discharge
- Children 6 weeks – 6 months old
  - Children < 6 weeks = refer or ER

ANTIBIOTIC TREATMENT

< 6 weeks old	→	REFER		
< 6 weeks – 6 m old	→	SD amoxicillin HD amoxicillin x 10 days	TXT failure →	HD amox/clav Cefprozil Cefuroxime axetil x 10 days CTX IV/IM x 3 days
≥ 6 m with no risk factors	→ Consider watchful waiting for 48 hours	SD amoxicillin HD amoxicillin x 5 days (≥ 2 y) x 10 days (< 2 y)	TXT failure →	HD amoxicillin Cefprozil Cefuroxime axetil x 5 days (≥ 2 y) x 10 days (< 2 y or txt failure) CTX IV/IM x 3 days
≥ 6 m with risk factors	→ Consider watchful waiting for 48 hours	HD amoxicillin x 5 days (≥ 2 y) x 10 days (< 2 y)	TXT failure →	HD amox/clav Cefprozil Cefuroxime axetil x 5 days (≥ 2 y) x 10 days (< 2 y or txt failure) CTX IV/IM x 3 days
Recurrent AOM	→	HD amox/clav x 5 days (≥ 2 y) x 10 days (< 2 y)	TXT failure →	HD amox/clav Cefprozil Cefuroxime axetil x 10 days CTX IV/IM x 3 days
Penicillin allergy	→	Clarithromycin x 10 d Azithromycin x 3 d	TXT failure →	Clindamycin x 10 d ID specialist

ACUTE OTITIS MEDIA

MONITORING

- Routine follow-up of patients diagnosed with AOM once they are asymptomatic is discouraged
- If symptoms persist or worsen, reassess for complications or persistent AOM
- If AOM persists despite amoxicillin given in recommended doses with good compliance, *H. flu* and *M. cat* may be causative pathogens
    - Use amox/clav

RECOMMENDED DOSES

Antibiotics	SD amoxicillin	45 - 60 mg/kg/day PO div BID
	HD amoxicillin	75 – 90 mg/kg/day PO div TID
	HD amox/clav (7:1 ratio)	75-90 mg/kg/day PO div BID-TID
	Cefprozil	30 mg/kg/day PO div BID (max 1 g/day)
	Ceftriaxone	50 mg/kg/day IM/IV (max 1 g/day)
	Cefuroxime axetil	30 mg/kg/day PO div BID-TID (max 1 g/day)
	Clindamycin	30 mg/kg/day PO/IV div TID (max 1.8 g/day) May increase to 40 mg/kg/day IV div TID-QID (max 2.7 g/day)
	Azithromycin	10 mg/kg PO once daily (max 500 mg) for 3-day treatment
	Clarithromycin	15 mg/kg/day PO div BID (max 1 g/day)
Analgesics	Acetaminophen	10-15 mg/kg every 4-6 h (max 75 mg/kg/day or 4 g/day)
	Ibuprofen	10 mg/kg every 6-6 h (max 40 mg/kg/day or 2.4 g/day)

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