Clinical Topic 2: Management of Acute Otitis Media

Background
Acute otitis media (AOM) is inflammation of the middle ear most common in children less than 10 years old peaking between the ages of 3 and 6 years. It usually has a rapid onset and presents with signs and symptoms such as pain, tugging or rubbing of the ear, fever and irritability. AOM may be due to viral or bacterial infection, but in either case it is normally a self limiting illness that will resolve without antibiotics in around 3-4 days in 80% of children.

When *not* to prescribe an antibiotic?
Antibiotics should **not** routinely be prescribed for AOM in children. There are some subgroups which may benefit more from antibiotics but the groups outlined below are most likely to have favourable outcomes without antibiotic treatment

- If > 2 years old with AOM but no otorrhoea
- Systemically well without e.g. fever or vomiting

When to consider prescribing an antibiotic?

- For children under 3 months have a low threshold for admitting or prescribing antibiotics
- For children who have had symptoms for 4 days or more and are not improving.
- When the patient is systemically very unwell. Children with systemic features e.g. fever or vomiting are more likely to benefit from antibiotics, although it is still reasonable to wait 24-48 hours as many children will improve spontaneously within this time.[1]
- when the patient has symptoms and signs of serious complications
- when the patient is at high risk of serious complications due to serious co-morbidity or age
- bilateral AOM in children < 2 years
- AOM in children with otorrhoea
- Local policy is
    - Amoxicillin 40mg/kg/day in 3 divided doses for 5 days
    - Clarithromycin

Other management strategies

- There is insufficient evidence to support the use of decongestants or antihistamines in children with AOM.
- Paracetamol and ibuprofen have been shown to reduce earache and should be used to reduce pain and fever if there are no contra-indications

Points of note

- Antibiotics slightly reduce the number of children with acute middle ear infection experiencing pain after a few days. However, most (78%) settle spontaneously in this time, meaning 16 children must be treated to prevent one suffering ear pain.[2]
- For every 17 children treated with antibiotics, one suffered an adverse effect such as vomiting, diarrhoea or rash.[3]
- Antibiotics do not prevent hearing problems after the acute episode.
- Complications include mastoiditis, labyrinthitis and meningitis, but these are rare in otherwise healthy children from developed countries.
- Children prescribed amoxicillin for AOM are about 50% more likely to have recurrence of this over the following three years, compared with those given placebo. For every 5 children treated, one had a recurrence of AOM who would not have done so otherwise without any significant effects on rates of related referrals or ENT surgery.[4]

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[1] Ttle P, Gould C, Moore M et al. Pragmatic randomised controlled trial of two prescribing strategies for childhood acute otitis media. BMJ 2001;322:336-42.
[2] Sanders S, Glasziou PP, Del Mar CB, Rovers MM. Antibiotics for acute otitis media in children. *Cochrane Database of Systematic Reviews* 2004, Issue 1. Art. No.: CD000219.DOI:10.1002/14651858.CD000219.pub2. Accessed from http://onlinelibrary.wiley.com/o/cochrane/clsysrev/articles/CD000219/frame.html
[3] O'Neill P, Roberts T, Stevenson CB. Acute otitis media. Clinical Evidence. September 2006.
[4] Bezakova N, Damoiseaux RAMJ, Hoes AW, et al. Recurrence up to 3.5 years after antibiotic treatment of acute otitis media in very young Dutch children: survey of trial participants. BMJ 2009;338:b2525.

Patient information

- The average duration of symptoms is 4 days.
- Regular analgesia will help the immediate pain more quickly than an antibiotic
- If antibiotics are given, take them regularly and complete the treatment. Analgesia may still be required in the first few days of treatment.
- Offer plenty of fluids

What should we do in practice?

- Diagnosis should be based on otoscopy and not history alone.
- All patients should be advised on adequate analgesia whether antibiotics are given or not.
- Avoid antibiotic treatment unless **documented**
    - bilateral AOM in <2years,
    - presence of otorrhoea
    - high risk of complications or very unwell
- Peer review and audit of management of AOM is encouraged