Treatment of Acute Otitis Media

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Treatment of acute otitis media (AOM) is challenging. First important recommendation is to take care of the pain, the ear ache of the child, and this is also the first recommendation of the American Academy of Pediatrics (AAP) and the American Academy of Family Physicians (AAFP). Anti-inflammatory analgesics are primary medication and they are easy in the way that in most countries the parents can buy them without prescription. Topical agents can give some additional benefits to children who are over five years of age. With serious pain a relief may sometimes be achieved by myringotomy or tympanostomy.

A real issue is whether antibiotic is needed at the time of diagnosis in children with uncomplicated AOM. The antibiotic rates for AOM varied between countries from 31% in Netherlands to almost 100% in the USA. The data on the usefulness of antibiotics is based on a relatively small amount of children, there are only 8 randomized, placebo-controlled studies. In these papers the main interest was pain reduction. Unfortunately complications were too rare for further analysis. On problem with these studies is that children who have severe ear ache are excluded from the study. Looking retrospectively these may be the children who have AOM while the others may be suffering the common cold related ear symptoms. Based on Cochrane review, it was found that during the first twenty-four hours, the antibiotic did not provide more pain reduction than the placebo. After that there was a relative reduction in pain between days 2 and 7. Considering that in 80% of the children the pain would heal spontaneously. 15 children should be then treated with antibiotics, to prevent one child having some pain after two days. However, the final conclusions were that antibiotics still provide a small benefit for AOM in children. This benefit must be weight against the possible adverse reactions. Children have diarrhea, and of course antibiotics are expensive. One important matter is that if the child once gets the diagnosis of AOM, when the child had a common cold, then the next time the diagnosis may again be AOM during common colds. In Cochrane study it was suggested that antibiotics may play an important role in reducing the risk of mastoiditis in populations where it is more common. Watchful waiting is not, however, for children who are immuno-compromised, or for children who have cochlear implants, or any thing that is not counted as normal.

When deciding to treat with antibiotics or not, age is important. Watchful waiting

is not for children under 6 months of age. From 6 months to 2 years children with AOM must be treated if the diagnosis is sure but in unsure cases – if the parents are willing and the control may be organized - a watchful waiting may be an option. Children older than 2 years, when the diagnosis is easier, a severe AOMs must be treated by antibiotics. Observation is an option if the AOM is not severe. In delayed prescription the prescription of antibiotics is given for the parents, and the parents may have the possibility to start it, if the child's symptoms are severe. If antibiotics are used, what antibiotics? This is heavily dependent on bacterial findings. *Streptococcus pneumoniae* is the most important, and the second is *Haemophilus influenzae*. The streptococcus pneumoniae vaccine which is widely used nowadays may change the pattern. Bacterial sensitivity is also geographically dependent as well bata-lactamase positivity. Amoxicillin is the fist-line antibiotics. If there are risk factors, amoxicillin should be used in high doses (90mg/kg/day) but otherwise amoxicillin 40mg per kilo per day should be enough. Cephalosporins can be safely used for those children who have penicillin allergy, because a cross reaction risk is very low.

In summary the "wait-and-see" policy is good, but then a control must be organized. The symptomatic treatment is important and sometimes delayed prescriptions may help. However, there certainly are situations where AOM is severe and then antibiotics are needed.

Recommended readings

1. Garbutt J, Gene J, May A, Storch GA, Shakelford PG. Developing community-specific recommendations for first-line treatment of acute otitis media: Is high-dose amoxicillin necessary? Pediatrics 2004;114:342-347.
2. Glasziou PP, Sanders CB, Hayem M. Antibiotics for acute otitis media in children. The Cochrane Database of systematic reviews 2005.
3. Little P, Gould C, Williamson I, Moore M, Warner G, Dunleavey J. Pragmatic randomized controlled trail of two prescribing strategies for childhood acute otitis media. BMJ 2001;322:336-342.
4. Pichichero ME. A review of evidence supporting the American Academy of Pediatrics recommendation for prescribing cephalosporin antibiotics for penicillin-allergic patients. Pediatrics 2005;115:1048-1057.
5. Subcommittee on management of acute otitis media. Diagnosis and management of acute otitis media. Pediatrics 2004;113:1451-1465.