The Antibiotic Dilemma

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The *British Medical Journal* published a paper from Little, Gould, et al., titled "Predictors of Poor Outcome from Antibiotics in Children with Acute Otitis Media: Pragmatic Randomized Trial." The objective of the trial was to identify which children with acute otitis media were at risk of poor outcome, and to assess benefit from antibiotics in those children.[1]

Otitis media is the most common upper respiratory condition treated in managed care. The treatment of this condition continues to bring controversy within medical primary care.[2-4] The majority of children with otitis media are automatically placed on antibiotics, although systematic review suggests is only marginal benefit from this form of care.[5]

The medical community is being confronted primarily by mounting evidence that the standard use of antibiotics may be outdated, with little value and possibly greater risk to the child. The primary care provider using antibiotics must be willing to answer this question: "Does this case warrant a prescription?"

With the increase of antibiotic resistance, the result of overprescribing of antibiotics,[4] the overprescription or unnecessary prescription of antibiotics, or the influence of parents' hopes of receiving a prescription on a doctors' perception,[6-8] should all be called into question.

Every time the doctor pulls out a script pad, the doctor should ask, "When do you prescribe an antibiotic?" It appears that the research community is attempting to give doctors the answer.

What does the literature say about otitis media?

- Most children with the condition will **not** benefit symptomatically from immediate use of antibiotics.
- It is unclear which children are more likely to benefit from antibiotics and which features predict poor outcome.

Another previous study from Little, Gould, et al., comparing immediate to delayed antibiotics, showed that for most children, the benefit with immediate antibiotics was only marginal, with no significant differences in pain or distress.[9] Their conclusion was that immediate antibiotic prescription provided symptomatic benefit mainly after 24 hours, when symptoms were already resolving. For children who are not very ill systemically, a "wait-and-see" approach seems feasible clinically, and acceptable to parents, and should substantially reduce the use of antibiotics for acute otitis media.

The latest trial by Little was conducted in primary health care facilities with 315 participating children, ages six months to 10 years. The sample group was selected when the general practitioner was able to evaluate for acute otalgia and otoscopic evidence of acute inflammation (dullness, cloudiness, erythema or bulging and

perforation).[1]

During the trial, the children were randomized into two groups: those who were placed on immediate antibiotics (amoxicillin or erythromycin for those allergic to penicillin) or delayed antibiotics. Parents of the children in the delayed group were asked to wait for 72 hours after seeing the doctors before considering using the prescription.

The conclusion in this study adds the following information:

"Children with high temperatures or vomiting were more likely to be distressed or have night disturbances three days after seeing the doctor;

"Children with high temperatures or vomiting are more likely to benefit from antibiotics, although it is still reasonable to wait 24 to 48 hours, as many children will settle anyway;

"Children without high temperature or vomiting are unlikely to have poor outcome and unlikely to benefit from immediate antibiotics.

"This study discussed that parents' greatest concerns were the symptoms of distress and night disturbance as a result of high fever and vomiting. The question of treating systemic features immediately is also under debate, when as many as half the children will settle within 72 hours after the onset of symptoms."[1]

With new evidence mounting, here are a few questions to pose:

- Will medical practitioners continue to prescribe antibiotics due to past indoctrination and habits, although empirical evidence suggests that antibiotics make little difference?
- Do these physicians continue to have concerns that there is a risk for dangerous suppurative complications? One fear held by many, that acute mastoiditis may develop, has been documented.

What do our parents need to know?

1. There is mounting evidence from the research community that the use of antibiotics has very little influence on acute otitis media.
2. Doctors may be prescribing antibiotics based on old indoctrination or the concern of developing acute mastoiditis, proven to be rare.
3. Parents should consider delaying the use of antibiotics for 72 hours, even if their children are manifesting systemic features of fever and vomiting (considering that 50 percent will settle down within that time period).
4. Research has shown that children with otitis media, but without fever and vomiting, had little benefit from the use of antibiotics. These children should **not** begin antibiotics unless their conditions worsen.
5. Parents need to take the initiative to question their pediatricians about waiting 72 hours before introducing antibiotics.

Consider asking the following of the parents of your patients:

- When was the last time you discussed the risk factors (e.g., developed resistance) of antibiotics?
- Did you know that it takes treating 18 children with antibiotics to help one child?

The True Prescription:

- Parents need to change their behavior when they go into the pediatrician's office. If they go in with the expectation to receive a prescription, it is more likely to influence their doctor's opinion, even if their child may not need antibiotics.
- Parents should take a common-sense approach to otitis media and consider chiropractic care. The Fallon study with 332 participating children suggests that chiropractic care may be more effective than drug therapy.[10]
- Parents should also be informed that their chiropractor is not opposed to antibiotics when necessary, but that our profession acknowledges that overmedication is prevalent in our country, and that the habits of our medical doctors may not have caught up with the latest research.

For the overall wellness of their children, encourage parents to participate in all decisions when it comes to the usage of antibiotics, and to seek noninvasive forms of care.

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