

This Is Where We Come In

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Those of you who can recall living in the 1940s and 1950s must remember what it was like to go to the movies. There would be a sign out on the marquee proclaiming, "Continuous performances daily." That meant you purchased your tickets, went into the theater, bought your popcorn (unless it was an art house) and sat in on the movie at whatever point it happened to be when you got there. Some two hours, a newsreel, a cartoon, a featurette, coming attractions and an undetermined fraction of the main feature later, you would begin to recognize what was on the screen. At that point you would lean over to your partner and whisper, "This is where we came in" and either leave or treat yourself to a repeat performance of the rest of the film.

I couldn't help but think of this with regards to how antibiotics have been (ab)used to treat otitis media. I ran across a paper published in *Pediatrics* just last year that polled medical physicians as to their prescribing habits for children with otitis media. Despite the fact a set of guidelines had been released by the American Academy of Family Physicians and American Academy of Pediatrics recommending "watchful waiting" rather than the immediate use of antibiotics, only 15 percent of the physicians in the survey reported they actually were following that option. Instead, 83.5 percent stated they chose antibiotics because they were following the dictates of the parents who preferred immediate use of antibiotics.¹ With all due respect, you as a parent should be stepping back and asking yourself: *Which one of us is the physician?*

That being said, you have to go back some nine years to pick up another study that showed us exactly the same thing. Only in this case, it wasn't even what the parents actually said; it was the physician's *belief* of what the parent was thinking. If the physician thought the parent wanted an antibiotic for treating otitis media, the physician prescribed such a pill 62 percent of the time and gave a bacterial diagnosis 70 percent of the time. If, on the other hand, the physician thought the parent was leaning away from using antibiotics, they prescribed the pill only 7 percent of the time, accompanied by a bacterial diagnosis only 31 percent of the time.² Mind games indeed.

But where's the science - to say nothing of four years of medical school? Turns out patients' expectations and physicians' prescribing behavior are big time, having been extensively documented in the literature.³⁻⁷ Patients do seem to expect antibiotics for prescriptions, and their satisfaction rises when these expectations are met.^{8,9}

So, you could argue that we are facing the phenomenon of patient beliefs and expectations influencing the clinical outcome. That, in itself, is a humongous topic which we won't get into here - or, as my uncle often used to say, "Don't get me started." Rather, we have additional problems when it comes to the indiscriminate use of antibiotics for treating childhood otitis media. These include the following:

A major portion of otitis media cases are not even caused by bacteria, rendering antibiotics useless. Polymerase chain-reaction assays indicated in one study that viruses without pathogenic bacteria were found in the middle-ear fluid of the majority

of samples taken from children with otitis media with effusion.¹⁰ Elsewhere, Schmidt outlined earlier studies that indicated anywhere from 20 percent to 40 percent of otitis media cases in which the middle-ear fluid failed to yield bacterial strains in culture.¹¹ These figures have been repeated in the popular press, which established that the cost of these needless prescriptions contributes to the runaway expenses we are experiencing in health care. In fact, the National Committee of Quality Assurance (NCQA) estimates this overuse of antibiotics costs the U.S. more than \$250 million each year. In the words of Margaret O'Kane, NCQA president, "Obtaining powerful antibiotics should be more complicated than ordering a pizza."¹²

The widespread use of antibiotics could lead to calamitous bacterial resistance. A broad cross-section of mechanisms is available and well-documented as to how bacteria can become resistant to antibiotics. To make matters worse, antibiotic resistance might be transferred via plasmids from a resistant bacterial strain to a nonresistant strain that is not even the same species.¹³ Each time an antibiotic is used, there is the risk a resistant mutation may develop and proliferate. This simply tells us, in no uncertain terms, that the use of antibiotics does not come without a price. Increasing U.S. populations of multidrug-resistant bacteria from 1995-1998 have been extensively described.¹⁴

Side effects have been linked to the use of antibiotics for otitis media. By destroying bacteria, antibiotics could wreak havoc upon the ecological balance of the intestinal flora. This could allow proteins normally blocked from absorption to pass through the intestinal wall, leading to what is commonly known as a "leaky gut." In so doing, antibiotics could allow foreign proteins to be introduced into the bloodstream, leading to the increase of antibodies and the creation of allergic responses within the host.¹¹ Reports have linked antibiotics to increasing appearances of asthma^{15,16} and cardiac repolarization, leading to sudden death¹⁷ and even hearing loss (in animal models).^{18,19} Again, there is no free lunch with antibiotics. (And whatever lunch is ingested might lead to problems with the antibiotics.)

The effectiveness of antibiotic use in treating otitis media has been questioned. Within the past decade, a re-evaluation of a major clinical trial, a second clinical trial, and a meta-analysis have all questioned the effectiveness of amoxicillin in managing middle-ear effusions.²⁰⁻²² Given this weak evidence, you would imagine there would be cries for a revision. Indeed, these have appeared in the literature¹⁴ including a review and plea from the International Primary Care Network.²³

So, has any progress been made in managing ear infections in children with standard medical care? This leads us right back to the filmgoer's lament at the beginning of this article: This is where we came in. We know medical progress and acceptance often can be measured in geological time, but not always. Just yesterday, for instance, my physician was of the opinion that all the papers in the nutritional journals claiming the benefits of the B vitamins, folic acid, coenzyme Q, and several minerals had, in just the past two years, been disproven. Thus, these supplements were no longer being recommended.

Given the available conservative alternatives for treating otitis media and the evidence in

chiropractic and osteopathy that is just beginning to accumulate, one would only hope that research in these areas and perhaps doctors' ultimate recommendations could be more widespread. As far as the antibiotics for otitis media is concerned, I'm not sure I want to sit through and watch this same movie to the end without some significant changes.

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