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## **A Story Goes with It: Otitis Media and the Sanctity of Medical Guidelines**

By Anthony Rosner, PhD

Here's a good one. The story begins as we take a look at the full spectrum of the types of evidence by which we live - from the meta-analysis on down to the lowliest of anecdotes or the hot tip at the racetrack. For those of you who think the latter is easily dispensed with and digested, think again.

There's a wonderful short story ("A Story Goes with It") by one of my favorite writers (Damon Runyon) that bemoans that the most carefully constructed odds do not necessarily convey all the key information needed to pick a likely winning horse. Consideration must also be given to extenuating circumstances. It can turn out that one of our presumed icons of stability - the medical guideline - is not so very different.

"Established" medical guidelines are often based on little evidence and highly subject to change. One statistic that I have quoted until blue in the face is that, in terms of the proportion of patients receiving evidence-based care, only 15 percent of medical procedures are supported by any published literature at all,<sup>1</sup> and only one percent are considered scientifically rigorous.<sup>2</sup> Medical guidelines may also have detrimental effects that are only belatedly discovered.

A quick look at the *Merck Index* tells us how mutable mainstream medical practices are over the long term. The following outlandish guidelines, accepted without question at the end of the 19th century, would be chastening indeed to anyone wishing to brand such conservative interventions as chiropractic "harmful" or "unfounded:"<sup>3</sup>

1. formaldehyde for the common cold;

2. arsenic or ammonia for baldness;

3. opium and morphine for typhoid fever

4. blood-letting and chloroform for streptococcal infections; and

5. strychnine, ice and lemon juice for diphtheria.

Within recent times, however, we need only consider otitis media as an example of the extreme volatility of medical guidelines. A complete reversal appears to have taken place within just the past six years! Traditionally, the initial recommended intervention in the United States has been tympanostomy with the option to use antibiotics,<sup>4</sup> despite that in the United Kingdom, the Scandinavian countries and the Netherlands, physicians have embarked upon a policy of watchful waiting with no deleterious consequences from their reluctance to use antibiotics.<sup>5</sup>

What has emerged within the past decade are reports that cast doubt on the effectiveness of these treatments. Regarding tympanostomy, one study revealed that one quarter of the tubal insertions were judged inappropriate, and another third equivocal.<sup>6</sup> Another study pointed out that complications such as infection, healing problems or pain occurred in 27 percent of tubal insertions, with 30 percent of the current tubes functioning as replacements for previous ones.<sup>7</sup>

Treatment with **antibiotics**, on the other hand, is likewise associated with risks and complications. The chance of incurring asthma, for example, has been shown to increase fourfold if antibiotics are used in the first year of life, and this risk is dose-dependent.<sup>8</sup> Unpublished work by Jochen Schacht from the University of Michigan has suggests that streptomycin, gentamicin and neomycin cause hearing loss by damaging the inner ear hair cells.<sup>9</sup> Finally, rapidly increasing levels of bacterial resistance to antibiotics are seen with their increasing use.<sup>10,11</sup> Because the effectiveness of antibiotic treatment is scant or equivocal in most recent studies,<sup>12-14</sup> the International Primary Care Network recently concluded that "clinicians should immediately reconsider the routine use of antimicrobials for children with otitis media and consider treating

symptoms with analgesics and observation for lack of improvement."<sup>14</sup> This sentiment was echoed in a commentary published in *Pediatrics*,<sup>7</sup> and in a study sponsored by the federal Agency for Healthcare Research and Quality, the latter pointing out that in the Netherlands (where a waiting period is observed before antibiotics are given for otitis media), occurrence of antibiotic resistance is one percent, whereas in the United States (where antibiotics are given immediately), the rate is 25 percent.<sup>15</sup>

What does all this tell us? For one, this entire discussion is offered as but one example of how medical guidelines, presumably evidence-based, can rest upon rather insecure foundations and undergo a complete reversal with the accrual of additional evidence within only a few years. Secondly, it points out that the field for managing otitis media is by no means a closed shop, and gives strong encouragement for exploring the more conservative alternatives for managing this condition, such as chiropractic. Finally, it makes it clear in no uncertain terms that for some to categorically accuse chiropractic as having a system of clinical evaluation and guideline development inferior to that of allopathic medicine smacks of an egregious double standard.

Even the loftiest of guidelines, therefore, need to be grounded in clinical reality and open to modification on a daily basis. A story does indeed go with the data, and it needs to be appreciated in its proper context.

Indeed, the spirit of Damon Runyon lives on and is bound to leave the purveyors of conventional wisdom disgruntled more than somewhat.

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