

## Evidence in Action

### Evidence-based management of otitis media

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#### *Clinical Scenario*

A mother brings her 18-month-old daughter into your office for evaluation. Her daughter has been waking through the night, crying, and guarding her right ear. The mother thinks it is an ear infection, since her child was seen 3-4 times already the past year for the same problem. Each time, the child was given antibiotics, with successful resolution of her pain. The mother is concerned about the constant use of antibiotics and seeks your thoughts.

You are practicing as an evidence-based practitioner. What do you do?

#### *Evidence-Based Consideration*

With your knowledge of evidence-based practice, you recognize the need for finding current literature about a patient's condition and incorporating that information into your approach to management (and education) of your patient. The familiar Venn diagram (right) is a reminder that evidence-based care involves an intersection of patient preferences, clinical experience, and research evidence.

You conduct a quick search on Google Scholar for "chiropractic" and "otitis media." The top finding is a 1999 feasibility study (published in *JMPT*) comparing chiropractic adjusting to sham manipulation for otitis media with effusion (OME). The study, conducted by Sawyer et al., has no results but also reports no side effects.<sup>1</sup> When you narrow your search to the most recent year and "sort by date," you locate a literature review by Pohlman and Brown in the *Journal of Chiropractic Medicine*, published in 2012.<sup>2</sup> This review appears thorough, searching 6 separate databases for relevant articles, and giving inclusion criteria for the articles reviewed. The authors assess the articles for quality (rated poor, fair, good, or excellent) according to percent

adherence to research quality checklists (*Canadian Medical Association Journal* checklist for case reports, Yang et al. for case series, CONSORT for clinical trials, and QUORUM for review articles).<sup>34-6</sup> Of 1489 papers, 49 were ultimately reviewed, including 15 case reports, 5 case series, 4 clinical trials, 8 reviews, and various commentaries, letters to editors, cross-sectional surveys, and protocols. The authors find limited quality of evidence and a broad variety of interpretations, ranging from "promising" or "inconclusive" to "no credible solid evidence" and "insufficient evidence."



In an evidence-based approach to care, we place significant emphasis on "best research evidence." We must consider the evidence hierarchy, where case reports and case series are placed "lower" in that hierarchy.<sup>7</sup> We look at the structure of the paper, its abstract, background, methods, results, limitations, and conclusions sections. We look closely at the statistics. We should check to see whether any reported confidence intervals cross zero (or 1 for ratios), that the p-values are significant, that the decrease in the measurable outcome is clinically meaningful (as opposed to statistically significant), that the statistical analysis matches the study design, etc. Based upon Pohlman and Brown's literature review, our only "favorable" results came from "low"-level case reports and case-series while the few "high"-level RCTs had non-significant results.<sup>2</sup>

Thus, should an evidence-based practitioner tell the mother that chiropractic care is "promising" or "inconclusive" for her daughter's ear infection? Or do we assume that the mother wants chiropractic care anyway, considering that she made an appointment to see us?



Look at the more elaborate Venn diagram on your left. Patient values include not just values, but also characteristics and circumstances.

Intersections occur within levels and at multiple levels, and clinical decision-making occurs throughout all 3 areas. Are you addressing this area? Do you think you've addressed it?

Consider a paper by Dartmouth University researchers published last year in the *British Medical Journal*, "Stop the silent misdiagnosis: patients' preferences matter."<sup>8</sup> They begin by challenging "the widespread assumption that the right treatment choice is a matter of science alone" and whether doctor always knows best.

How does one make a *preference diagnosis*? I might believe that my patient is fully and confidently informed prior to coming into my office. But is this realistic? Even studious patients come to us for advice, lacking confidence in their decisions. Is that advice coming from the perspective of information or from the perspective of our belief system in what we hope is true regarding the available treatment and regardless of existing evidence?

To truly be "evidence informed," we must follow 3 steps to make a preference diagnosis:

- Mindset of scientific detachment
- Use scientific data to formulate a provisional diagnosis, and
- Engage the patient in conversation and deliberation

**Mindset of scientific detachment:** This is a difficult natural instinct to override. Simply asking what we would do or what we would have a loved one pursue is not enough. We must truly be objective and respect our patient.

**Formulate a data-driven provisional diagnosis:** While this seems analogous to

assembling a list of treatment options and potential benefits/risks/side effects (see below), the authors suggest consulting a data-based predictor of preference to ascertain what the patient's preference might be (such information may or may not be available).

**Engage the patient in conversation:**

*Team talk.* Is our patient looking for a diagnosis, alternative treatment option, or has he or she already decided on a preferred treatment approach? It is important as "portal of entry" providers that we acknowledge the possibility of all 3 before moving forward. No patient should feel judged or pressured into making a treatment decision without being aware of all of the options.

*Option talk.* After trust and conversation are established, we can present a list of treatment options and potential risks, benefits, and the side effects of each. Before this disclosure seems too scary, remember that they are in our offices because they are interested in non-invasive, minimal side-effect options. Respecting your patient's judgment and intelligence will only provide for a longer term, mutually respectful doctor-patient relationship.

*Decision talk.* I used to ask my patients, "How do you want to proceed?" It's as simple as that. If your patient asks for your recommendation, give it. This could also be a perfect time for engaging the patient in rehabilitation or lifestyle modification to address a chronic problem.<sup>8</sup>

**Application of what we've learned**

What about the mother with a child who is suffering from otitis media? Let's say she found us through the Yellow Pages© and has limited experience with chiropractic care, although she has listened (with some skepticism) to other parents regarding potential benefits of chiropractic care for children. Do we know that she wants her 18-month-old child treated? Through a thorough case history and examination, we must evaluate and correctly differentiate acute vs. chronic otitis media as well as otitis media with effusion. Of course, we must

also perform an appropriate chiropractic evaluation to determine the need for chiropractic treatment (and subsequent etiology).

Ideally, have an informational sheet prepared with treatment options, including potential side effects/risks. In this case, I would tell the mother that current best evidence is unclear regarding chiropractic management for ear infections, but that no adverse effects have been reported. When she asks about my personal experience treating such cases, I would share how much of my practice is devoted to children and how often I have seen resolution of similar cases. I would not suggest that spinal manipulation is the definitive answer, but that is a reasonable initial approach to management in conjunction with investigation into other contributing factors.

So, does a lack of evidence restrict me from taking care of children with otitis media or addressing the concerns of their parents? Not if I am interested in focusing on the care of children. Evidence-based practice helps educate our patients about the lack of certainty that exists in health care and also about the potential for benefit regarding treatment decisions. It will also help provide information on risk, allowing for an informed risk-benefit analysis by the patient. Thus, our patient is best respected.

## References

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