

# Evidence or bias?

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**H**ow do we use evidence? To objectively guide patient care or to support our biases?

At a recent conference on evidence-based medicine, we reviewed a meta-analysis that found inhaled beta-agonists ineffective for acute cough or bronchitis.<sup>1</sup> During the discussion, some physicians thought the idea of using beta-agonists to treat acute cough was mainly a pharmaceutical advertising gimmick; one participant stated this article was the information needed to debunk that propaganda.

During another evidence-based medicine event, a critique of an article on spironolactone in heart failure<sup>2</sup> revealed divergent opinions. The study in question reported significant mortality improvement when patients with New York Heart Association class III and IV heart failure were given spironolactone. Some felt the low cost and demonstration of clear benefit justified applying information from sicker patients to those with milder (class I and II) disease, while others argued this was an unjustified leap of faith.

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## How do values shape decisions?

These 2 discussions raise an important question: To what extent is our clinical application of evidence shaped by our values, biases, or expectations? Values shape decisions as to which research to pursue, which articles to read, and which patient-oriented outcomes are most important—both the search for evidence and the application of evidence are value-directed endeavors.

Nevertheless, if the goal of evidence-based medicine is “the conscientious, explicit, and judicious use of current best evidence in making decisions about the care of individual patients,”<sup>3</sup> then it is our duty to conscientiously present evidence so that our patients’ decisions may be truly reflective of their own values.

## Asking the right clinical question

An important step in practicing evidence-based medicine is asking a “well-built” clinical question that is “directly relevant to the problem at hand” and facilitates “searching for a precise answer.”<sup>4</sup> Thus, the application of evidence to a particular case depends on the precision of the clinical question, the precision of the evidence-based answer, and the degree to which the answer fits the question.

The meta-analysis of beta-agonists addressed the broad question of their use for cough in general but not the more precise question of their use in patients with cough and wheeze, though this subgroup was found to benefit in 2 individual studies.<sup>5,6</sup> The study of spironolactone addressed a more precise question, but the issue in discussion was the applicability of the evidence more broadly beyond the initial scenario.

### Matching evidence to patients

My point is not to challenge the findings of the 2 articles, but to highlight the role values and biases can play in the application of evidence. Whether the issue is using evidence from a broad set of studies (cough in general) to address a more specific clinical scenario (cough with wheeze), or applying information from sick patients (class III and IV heart failure) to less severely ill (class I and II heart failure) patients, biases and values can play a significant role in the application of evidence to patient care.

If solid evidence-based medicine was readily available to answer every possible clinical question, medical practice would be straightforward. But for now we are faced with a wide array of medical practices and patient problems and a relative paucity of evidence. When we cannot find the information that directly answers a particular clinical question, patient and clinician values become a factor. If evidence suggests abandoning a treatment, we must be sure that the evidence directly addresses the clinical scenario we might use that treatment for. If there is evidence supporting a new treatment, we must ask how much more evidence we need before broadening the use of that treatment to other, slightly different scenarios.

Whatever the clinical scenario, we must bear in mind that applying evidence-based medicine to patient care involves a complex interplay of evidence and values. To be "conscientious, explicit, and judicious" in our practice of evidence-based medicine, we must be precise in framing clinical questions, diligent in searching for precise

answers, honest in understanding the role of our own values as we assess evidence, and faithful to our patients in translating evidence into information they can use to form decisions.

### REFERENCES

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