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Response

To the Editor:

I thank Drs Aberegg and O’Brien for their letter regarding our recent article in CHEST.1 Their concerns focus on two issues that arose in our discussion of cognitive bias: the definitions of availability and anchoring bias and the failure to describe “inadequate search” as the primary cognitive mistake.

Tversky and Kahneman2 describe the availability bias as the assessment of a “probability of an event by the ease with which instances or occurrences can be brought to mind.” The resident in this case was convinced that the diagnosis of pulmonary embolism was correct because he had seen many cases of pulmonary embolism in the past, and these cases were associated with gas exchange abnormalities. The ease with which this diagnosis was brought to mind enhanced the probability (as judged by the resident) of it being correct. Croskerry3 defines availability bias as “the tendency for things to be judged more frequent if they come readily to mind”; I submit this is a fair representation of the original description.

I also describe the resident’s thinking as being affected by anchoring bias. Although the original description of anchoring derived from experiments with numbers, I believe my use of the term here is also an appropriate interpretation in a medical context: “anchoring is the tendency to fixate on specific features of a presentation too early in the diagnostic process.” The problem was not that the resident failed to notice that the patient had bilateral lower extremity amputations or a distended abdomen; rather, he had “fixated” on his original diagnosis and was unwilling to modify his thinking based on these data. Use of the term, anchoring, in this way is in the spirit of Kahneman,4 who writes, “the availability of a diagnostic label... makes it easier to anticipate, recognize and understand.” As a medical educator, I find that identification of this common cognitive error as “anchoring” facilitates teaching students and residents about decision making.

Finally, Drs Aberegg and O’Brien assert that the real problem was an inadequate search for other possibilities, an explanation that could be used for any and every erroneous diagnosis that was based on a list of possibilities, no matter how long, if it did not include the ultimate answer. More importantly, however, many questions in medicine do not lend themselves to an easy search of textbooks or the medical literature. Aberegg et al propose teaching medical students to use Internet searches based on the chief complaint to ensure an adequate search has occurred. Following that strategy for “rising Paco2,” the resident’s description of the major problem in this case, I went through the first five pages of Internet hits and found no references that would give you the correct answer for this case, other than those that cite the article that is the topic of this discussion. I agree that we must slow down and use system II reasoning. But it is my contention, and the focus of the Interactive Physiology Grand Rounds series, that reasoning based on an analysis of a problem using basic principles of physiology and pathophysiology can lead one to an accurate diagnosis in these more complex cases.

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Obesity and Mortality in Critically Ill Patients

Another Case of the Simpson Paradox?

To the Editor:

We read with interest the article of Martino et al1 in a recent issue of CHEST (November 2011) reporting that obese critically ill patients survive at least as often as patients who are of normal weight. However, we believe this conclusion could send a misleading message. Although mortality rate has been adjusted on the APACHE (the Acute Physiology and Chronic Health Evaluation) II score in a multivariate analysis, a strong limit of this study

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