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POEM*

BNP improves outcomes in evaluation of dyspnoea

Question Does use of the test for B-type natriuretic peptide (BNP) in the diagnosis of acute dyspnoea improve patients' outcomes?

Synopsis Too often, new tests are introduced without a careful examination of their effect on patient oriented outcomes. Accuracy alone is not reason enough to adopt a test; a more important reason is that its use helps patients live better or longer lives. We should also know whether is adds or reduces cost. There is previous convincing evidence that B-type natriuretic peptide is accurate in diagnosing heart failure in patients presenting with acute dyspnoea (*N Engl J Med* 2002;106:416-22). This latest randomised controlled trial (single blinded) study is the first to look at the larger impact of this test's use in clinical practice. Of 665 consecutive adults presenting to a Swiss emergency department with acute dyspnoea, 452 met the inclusion criteria. Patients with an obvious traumatic cause, serum creatinine levels greater than 2.8 mg/dl, cardiogenic shock, or who requested transfer to another hospital were excluded. The mean age of patients was 71 years, and half were women. Patients were randomly assigned (allocation concealed) to usual care supplemented by a rapid BNP level, or the usual diagnostic protocol without knowledge of BNP level. Clinicians were advised that a BNP level less than 100 pg/ml made heart failure unlikely, a result greater than 500 pg/ml made heart failure very likely, and that intermediate values required additional information and clinical judgment to make the diagnosis. The BNP was not measured during any subsequent hospitalisation. All patients underwent a careful history and physical examination, electrocardiogram, chest x ray, and blood tests other than BNP. Echocardiography and pulmonary function testing were strongly recommended for all patients, whether or not they were admitted, although the percentage actually having the tests was not reported. Outcomes were assessed by a group blinded to treatment assignment. The BNP test provided additional information that clearly improved patient outcomes. The likelihood of admission to the hospital was lower in the BNP group (75% *v* 85%; P = 0.008; absolute risk reduction 10%; number needed to treat (NNT) = 10), as was the likelihood of admission to the intensive care unit (15% *v* 24%; P = 0.01; NNT = 1). Patients in the BNP group were treated more quickly (63 *v* 90 mins; P = 0.03), spent less time in the hospital (8 *v* 11 days; P = 0.001), and their care cost less ($5410 *v* $7264; P = 0.006) than those whose physicians did not have that test result. There was no difference in either in-hospital or 30 day mortality and no difference in 30 day readmission rates.

Bottom line Knowing the level of B-type natriuretic peptide during initial evaluation in the emergency department is associated with more rapid initiation of appropriate treatment, less need for hospitalisation and intensive care, a shorter length of stay, and lower costs. The next question is whether the BNP can replace other tests like the chest x ray or echocardiogram for some patients.

Level of evidence 1b (www.infopoems.com/levels.html). Independent blind comparison of an appropriate spectrum of consecutive patients, all of whom have undergone both the diagnostic test and the reference standard; or a clinical decision rule not validated on a second set of patients.

Mueller C, Scholer A, Laule-Kilian K, et al. Use of B-type natriuretic peptide in the evaluation and management of acute dyspnea. *N Engl J Med* 2004;350:647-54.

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* Patient-Oriented Evidence that Matters. See editorial (*BMJ* 2002;325:983)

Editor's choice

Cataclysm and departure

You ought to have a theme issue on "America as a global threat to health" suggested one of our correspondents, perhaps facetiously. Imagining the downcast face of our North American editor, the plummeting circulation of *BMJUSA*, and the wagging finger and circumlocutions of Donald Rumsfeld, we promptly decided against. But this issue could have provided the beginnings for such a theme.

A serious response to global warming needed American leadership. Instead, we got the opposite. The United States, which produces a quarter of the world's greenhouse gases, turned its back on the Kyoto agreement. As a result we are not responding adequately to global warming, and our grandchildren will find themselves in an increasingly degraded world. Now the American creativity and flair, which most of us admire, has produced not a solution to the problem but a film to scare us witless.

Our cover picture, taken from the film *The Day After Tomorrow*, shows New York under water. Global warming is causing disasters. New Delhi is snow covered, and Britain is in the grip of an ice age because the Gulf Stream has switched off. Shakoor Hajat writes that the film presents "the worst case scenario" (p 1323), but Jonathan Patz tells us that global warming means not just a gradual climb in temperature but also an increased frequency and intensity of extreme climatic events—heat waves, droughts, floods, and storms (p 1269). It is also likely to increase the number of hungry people by 90 million this century (p 1324).

Peter Drahos and David Henry are upset by the United States because it is using its trade powers to undermine rational drug policies in Australia (p 1271). The Australians have a tough policy on subsidising only drugs that are cost effective, but a new trade agreement creates a body to dispute decisions of the committee that decides on subsidies. This agreement, argue the editorialists, is one of several that is diluting the Doha declaration of the World Trade Organisation that aimed "to protect public health and, in particular, to promote access to medicines for all."

Before I'm accused of being "anti-American" I must tell you that I will be leaving the *BMJ* to become chief executive of a European company being created by the UnitedHealth Group, the largest health and wellbeing company in the United States, to work with European public health systems, including the NHS (p 1276). The company will be aiming to help speed modernisation of the NHS.

My main reason for leaving is that a quarter of a century is enough. I've had a wonderful time, and, like Woody Allen sweeping the floors in a strip club, I would have paid for the privilege of editing the *BMJ*. I hope that I hand the journal on in as a good a shape as I found it, and I thank the *BMJ* staff, authors, and readers for tolerating my eccentricities for so long. (PS. I'm not going just yet.)

Richard Smith *editor rsmith@bmj.com*