

CARDIOLOGY

Bedside Assessment Skills Still Important

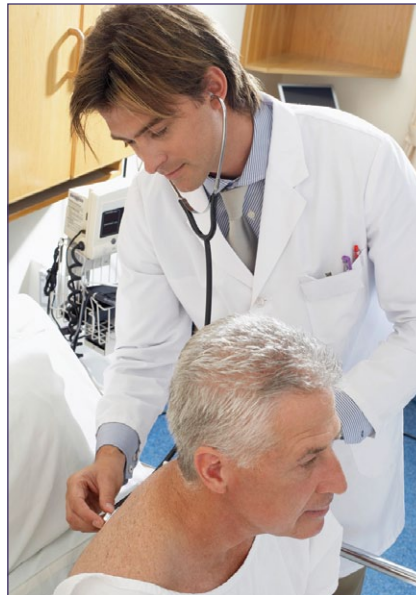
Have bedside assessment skills deteriorated and become weakened by technology? Studies suggest that the more physicians rely on new technologies, the more their examination skills dwindle. Research has shown, for instance, that clinicians' accuracy in identifying left heart filling pressure is poor—hovering below 60%. That's unfortunate, say Mayo Clinic researchers, because most of the time, good bedside examination skills may be all that's needed. They conducted a study that found right and left heart filling pressures can be estimated with moderate accuracy based solely on the physical examination.

Nine physicians (3 faculty cardiologists and 6 cardiovascular trainees) made 215 observations in 116 patients referred for cardiac catheterization. Each patient was examined by 1 to 3 physicians. The physicians prospectively assessed right and left heart filling pressures as "normal" or "abnormal," based on physical examination alone or examination coupled with echocardiographic and B-natriuretic peptide data (BNP).

Right and left heart pressures were accurately predicted from examination alone in 71% and 60% of observations, respectively. However, accuracy was enhanced by experience: Cardiologists did better than trainees in predicting central hemodynamics more accurately for both right heart filling pressure (82% vs 67%) and left heart filling pressure (71% vs 55%). The researchers say this may relate to the practitioner's ability to accurately identify key findings, such as jugular distention or

the ability to properly incorporate the findings in the final assessment.

"High confidence" predictions from the examinations were correct in 49 of 61 observations (80%). Compared with trainees, staff cardiologists reported greater confidence from examination. Confidence increased after the physicians viewed noninvasive data;



the magnitude of increase was greater in trainees. The number of "high confidence" predictions rose from 28% to 46% of all observations after exposure to noninvasive data. Still, echocardiographic and BNP data did not alter the overall accuracy of the examination-based predictions (71% before data vs 72% after, for right heart filling pressure and 60% before data vs 59% after, for left heart filling pressure).

The noninvasive data may have increased physician confidence in their assessments, the researchers say, but did not necessarily add incremental value in prediction. Overreliance on echocardiographic and BNP data, they add, may "engender a false sense

of certainty when physicians might be better served to accept an element of uncertainty, keeping the differential diagnosis sufficiently broad."

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MENTAL HEALTH

Cognitive Decline After Coronary Catheterization

Patients and their families often notice "mental changes" after cardiac procedures, and in fact, cognitive decline is a common aftermath of coronary artery bypass grafting (CABG). But is the same true of coronary catheterization?

To find out, researchers from Justus Liebig University Giessen and Kerckhoff Clinic in Bad Nauheim, Germany, analyzed neuropsychologic data from 84 patients who underwent cardiac catheter intervention or CABG and compared results with that of 33 healthy volunteers. The researchers performed cranial magnetic resonance imaging (MRI) 1 week to 1 day before and within the first 3 days after surgery. They also conducted a battery of cognitive examination tests 1 to 4 weeks before the procedures and 3 months after.

The CABG group showed post-interventional cognitive dysfunction (PICD) in 7 of 10 tests, compared with the healthy controls. The catheter group showed cognitive dysfunction in 2 (verbal and nonverbal memory) of 10 tests.

The CABG group also had a higher rate of acute ischemic brain lesions (18%) compared with the cardiac catheter group (3.3%). Most lesions were singular, small, and widely distributed among vascular brain territories. Ischemic lesions correlated

with decline in 3 tests (pictorial memory delayed recall, pictorial retrieval, and total recall), as well as the global score of all averaged change scores. All patients with microlesions on MRI declined from their baseline performance after 3 months.

The researchers note that cerebral microemboli are known to significantly contribute to PICD after CABG. Assuming that aortic plaques might be disrupted by the catheter tip and release solid microemboli and that intra-arterial injection of contrast agents could give rise to gaseous bubbles, it's possible that, as in CABG, large numbers of microemboli might

enter the cerebral circulation during catheterization and lead to neuropsychologic impairment. And because eliminating gaseous microemboli has been shown to improve neuropsychologic performance after CABG, that might represent a meaningful target for neuroprotection during cardiac catheterization, the researchers say.

Depression and anxiety scores improved in the CABG group after 3 months, as did depression scores in the cardiac catheter group. Health-related quality of life (HQL) scores did not change in either intervention group after 3 months. The researchers say their findings do not support

the idea that PICD is associated with emotional factors, such as anxiety. Depression, anxiety, and HQL were not associated with intervention-related cognitive decline. ●

Source: *Am Heart J.* 2011;162(4):756-763.
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