Presurgical Cardiac Screens Are Often Unneeded

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Baltimore — Preoperative screening to identify potential cardiac complications is often unnecessary and may not help a surgeon to reduce risk during an elective procedure, said Dr. Richard Lange at a cardiovascular conference sponsored by Johns Hopkins University, Baltimore.

There are many reasons to focus on patients who are at highest risk for complications. Nuclear stress testing alone costs about $10 billion each year, said Dr. Lange, chief of clinical cardiology at Johns Hopkins. There are 27 million people who undergo noncardiac surgeries each year in the U.S., but only 8 million have coronary artery disease or risk factors, and 50,000 will have a perioperative MI, he said.

Patients undergoing low- or intermediate-risk procedures aren't likely to need stress testing, he said. Endoscopic, superficial, cataract, and breast procedures are considered low risk, with a less than 1% complication rate. Procedures with an intermediate risk (1%-5% complication rate) include carotid endarterectomy, as well as head and neck, intraperitoneal, intrathoracic, orthopedic, and prostate procedures.

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The highest-risk procedures (more than 5% complication rate) include emergent major operations, especially in elderly patients, in the aorta or other major vessels, in peripheral vasculature, and in procedures with large fluid shifts or blood loss, said Dr. Lange.

Usually, older patients and those with rhythm disorders, abnormal ECGs, a low functional capacity, or uncontrolled hypertension are considered to be at risk for cardiac complications. But none of these is an independent risk factor, said Dr. Lange.

However, six predictors have been identified as independent risk factors: a high-risk surgical procedure; a history of ischemic heart disease; a history of heart failure; a history of transient ischemic attack or stroke; insulin therapy; and a preoperative serum creatinine level greater than 2 mg/dL (Circulation 1999;100:1043-9). According to this Revised Cardiac Risk Index, the focus for work-ups should be on patients who have more than three of these risk factors.

Not all tests provide valuable information, either. A 2003 metaanalysis of the predictive ability of noninvasive tests found varying sensitivity and specificity results (Heart 2003;89:1327-34). Perfusion imaging, for instance, had a high sensitivity, but very low specificity. Dobutamine stress echocardiography had an 85% sensitivity and 70% specificity. Tests should provide a high positive predictive value, and—more importantly—should give the clinician information beyond what can be determined by the clinical risk factors, said Dr. Lange. And tests should lead to a strategy that reduces the risk of perioperative MI.

If a diagnostic test seems warranted and indicates increased risk, it's not always advisable to perform coronary revascularization, said Dr. Lange. Several studies have shown that patients who had a percutaneous coronary intervention (PCI) or coronary bypass artery graft (CABG) to minimize risk actually ended up in worse condition. The Coronary Artery Revascularization Prophylaxis trial found that high-risk patients who received a PCI or CABG followed by vascular surgery did no better than those who were given medical therapy (N. Engl. J. Med. 2004;351:2795-804). And, said Dr. Lange, there was a 9% rate of death or myocardial infarction during the revascularization procedure.

Stenting before noncardiac surgery may put patients at even higher risk, he said, citing three trials showing increased major bleeding, cardiac events, and death if the follow-on procedure was done within a few weeks. Drug-eluting stents may put patients at higher risk because of delayed endothelialization and increased risk of subacute and late thrombosis. The evidence suggests that noncardiac surgery should be done a minimum of 3-6 months after drug-eluting stent placement, he said. ■