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(Accepted for publication June 11, 1990.)

Anesthesiology
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Preoperative Predictors of Perioperative Cardiac Morbidity

To the Editor:—Mangano¹ has provided an excellent review on the preoperative cardiac morbidity (PCM), but I believe his conclusions on preoperative predictors deserve some comment.

Mangano concluded that recent (<6 months) myocardial infarction (MI) and current congestive heart failure are the only two consistently proven preoperative predictors of PCM, and that the efficacy and cost effectiveness of specialized nonroutine tests remain controversial. These conclusions raise two questions. The first question is whether all patients with recent (<6 months) MI should have coronary angiography before major vascular surgery regardless of clinical condition. The second question is how the cardiac risk before noncardiac surgery should be evaluated for patients who have old (>6 months) MI or chronic stable angina.

Since it is too hazardous and expensive to perform coronary angiography on all preoperative patients with coronary disease, it would be most reasonable to use a noninvasive test that is sufficiently sensitive to identify the majority of patients likely to suffer PCM. Exercise stress testing is the standard method of revealing myocardial ischemia, but submaximal effort by patients secondary to their poor physical conditions may lead to false-negative results. Preoperative ambulatory Holter monitoring (AHM)² and dipyridamole-thallium imaging (DTI)³ have been proposed as alternatives. Preoperative DTI, when combined with clinical evaluation, seems most useful to stratify the cardiac risk in vascular patients.⁴ The efficacy of preoperative DTI in assessing the cardiac risk for noncardiac surgery has been proven.⁵

Preoperative ischemia detected by AHM has been reported to be the most significant correlate of PCM (the predictive value of negative result 99%).⁶ Among the several advantages of AHM over DTI are its lower cost and wider availability. Although further studies may be needed to confirm the preliminary findings of this study, ambulatory electrocardiographic monitoring has proven successful in detecting ST-segment changes indicative of myocardial ischemia in patients with coronary artery disease.^{6,7} Disadvantages of AHM include false-positive results in patients with cardiac hypertrophy and difficulty of interpretation in those with underlying electrocardiographic abnormalities.⁸ These disadvantages notwithstanding, the efficacy and cost effectiveness of AHM could be tremendous.

A decision to proceed with laboratory testing should be made only after the risk of the noncardiac surgery and the patient's clinical risk profile have been considered. With the use of noninvasive tests, one can stratify the cardiac risk. Patients with low risk need no further testing. In those with high risk, consideration of coronary angiography before noncardiac surgery is warranted.

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(Accepted for publication June 12, 1990.)