



NEW SERIES

Choosing the right coronary test

WHICH TEST IS BEST for patients with known or suspected coronary artery disease? An exercise test alone? Or is that an outdated technology? When is imaging with nuclear or ultrasound methods appropriate? Should the interpretation of exercise stress tests be limited to the ST segment, or do other measures matter? What should be done with patients who have an “abnormal” stress test?

Despite numerous therapeutic advances, atherosclerotic cardiac disease remains the number-one cause of death in the United States. Every year, more than 500,000 Americans die from coronary heart disease or heart failure, and more than 13 million have received one or both of these diagnoses. Death often comes unexpectedly from unheralded myocardial infarction or fatal arrhythmias. Thus, clinicians are frequently faced with patients with known or suspected disease and wonder how best to assess their status.

Thanks to a number of technological advances, noninvasive tests for coronary artery disease have become sophisticated and feasible. The interpretation of exercise tests now goes way beyond the ST segment and includes computerized electrocardiography as well as meaningful measures of functional capacity, heart rate, and rhythm. Nuclear and echocardiographic imaging yield quantitative measures of myocardial scar and ischemia and of left ventricular systolic and diastolic function. Advances in computed tomography make it possible to visualize coronary artery calcification and even coronary artery stenoses, raising the question whether stress testing of any kind is needed anymore.

Although these technological improvements have substantially improved the clinician's ability to find and describe coronary dis-

ease, they also pose a bewildering array of choices.

This series aims to review current practice of noninvasive cardiac stress testing in routine clinical practice. Each article will begin with a clinical case and a question. The article will review how widely available noninvasive stress tests apply to the case and suggest a reasonable evidence-based approach to test selection and interpretation. The first article discusses optimal test selection for a 58-year-old man with typical angina and some cardiac risk factors. Subsequent topics will include:

- Stress testing as part of preoperative assessment
- Stress testing after percutaneous coronary intervention or coronary artery bypass surgery
- Stress testing in asymptomatic patients
- Exercise hemodynamics (functional capacity, heart rate, blood pressure, and rhythm) in stress test interpretation
- Stress testing in patients with severe heart failure
- Special considerations regarding pharmacologic stress testing.

We welcome suggestions for future topics, as our goal is to stimulate discussion and answer questions about the diagnostic and prognostic assessments of one of our society's most serious public health threats.

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