

Cardiac Stress Testing for Diagnosis of Coronary Artery Disease

Robert Carlisle, MD, MPH

This month's quiz is based on the article "Cardiac Stress Testing for Diagnosis of Coronary Artery Disease in Adults with Acute Chest Pain," which begins on page 21 of this issue. Choose the single best answer for each question.

- 1. A 40-year-old man presents to the outpatient setting for an annual physical examination. He has no symptoms of coronary artery disease (CAD). Evaluation does not reveal hypertension, obesity, peripheral vascular disease, a history of smoking, or a family history of early CAD. His blood glucose and cholesterol levels are unknown. Which of the following is the most appropriate approach to address his potential for CAD?**
 - (A) Computed tomography (CT) coronary artery calcium scoring or CT angiography
 - (B) Exercise stress electrocardiogram testing
 - (C) No testing but primary prevention with the combination medication dipyridamole-aspirin
 - (D) Pharmacologic cardiac stress testing with imaging
 - (E) Risk stratification for CAD and optimal management of CAD risk factors
- 2. A 47-year-old woman complains of a 2-month history of burning-like substernal chest pain that occurs when lying flat after eating fatty meals or smoking. She and her husband are concerned about her heart health. She smokes cigarettes, has a body mass index of 28 kg/m², and has a brother who had a myocardial infarction at age 55 years. She does not have hypertension, hyperlipidemia, diabetes mellitus, or peripheral vascular disease. Which of the following best determines this patient's pretest probability of CAD prior to consideration of cardiac stress testing?**
 - (A) Active use of hormone replacement therapy
 - (B) Age, gender, and location of chest pain
 - (C) Brachial artery reactivity
 - (D) Coronary artery calcium score < 100
 - (E) C-reactive protein level
- 3. For which of the following patients would coronary artery calcium scoring hypothetically be of benefit in risk stratification of CAD?**
 - (A) A 40-year-old man with no symptoms of angina and a Framingham risk estimate for CAD less than 2% in the next 10 years
 - (B) A 45-year-old man with atypical angina at intermediate risk for CAD who has an indeterminate stress test imaging result and is fearful of interventions
 - (C) A 47-year-old woman with chest pain at low risk for CAD by age, gender, and description of symptoms
 - (D) A 55-year-old man with a high Duke treadmill posttest probability for CAD
 - (E) An 85-year-old woman with unstable angina
- 4. A 64-year-old woman with severely advanced chronic obstructive pulmonary disease (COPD) and recent intubation for respiratory failure complains of a 72-hour history of intermittent chest pain not associated with exertion. In the emergency department, her pretest probability for CAD is intermediate by multiple stratification methods. Which of the following is true regarding her intermediate risk status?**
 - (A) Compared with those at high and low risk for CAD, she will benefit less from stress testing
 - (B) Coronary artery angiography is warranted if stress testing is normal
 - (C) Further testing is warranted regardless of her interest in percutaneous intervention or bypass surgery
 - (D) Stress echocardiogram is deemed cost-effective by usual medical economic analysis
- 5. Which of the following is a contraindication to the use of adenosine myocardial perfusion imaging?**
 - (A) Aortic valve stenosis
 - (B) Electrocardiogram findings consistent with Wolff-Parkinson-White preexcitation syndrome
 - (C) Pacemaker-dependent cardiac rhythm
 - (D) Severe COPD

For answers, see page 12.

Dr. Carlisle is an interim residency program director, Department of Family Medicine, West Virginia University, Morgantown, WV.

Answers to the Clinical Review Quiz, which appears on page 30. The article on cardiac stress testing begins on page 21.

1. (E) Risk stratification for CAD and optimal management of CAD risk factors
2. (B) Age, gender, and location of chest pain
3. (B) A 45-year-old man with atypical angina at intermediate risk for CAD who has an indeterminate stress test imaging result and is fearful of interventions
4. (D) Stress echocardiogram is deemed cost-effective by usual medical economic analysis
5. (D) Severe COPD

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