The OHSU Lipid Clinic Update

When to Use Coronary Calcium Scoring

SECTION OF PREVENTIVE CARDIOLOGY AND ATHEROSCLEROSIS IMAGING

CARDIOVASCULAR MEDICINE

May 2012

A Word from the Director

Dear Colleagues, I recently received a thought-provoking e-mail from a colleague. He has a patient with a family history of premature coronary heart disease and he ordered a cardiac CT for calcium scoring to more accurately define that patient's absolute risk for a coronary event over the next five to ten years. This patient had a relatively low coronary calcium score of 39, and the question was whether this patient should be considered to have coronary artery disease for insurance purposes. Please see reverse side for answer.

Best regards,
Michael Shapiro, D.O.

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OHSU Preventive Cardiology

Five Key Points Regarding the Appropriate Use of Coronary Calcium Scoring

1. Use for **asymptomatic intermediate risk patients** (men age 45 and older or women age 55 or older with one or more additional risk factor aside from their age) to more accurately define their 5 to 10 year absolute risk of non-fatal MI or CHD risk as compared to Framingham risk scoring.

2. Five year risk of non-fatal MI or CHD death is derived from coronary calcium scoring as follows:

Coronary Calcium Score	Five Year % Risk of CHD Death or Non-Fatal MI
0	0.5
1-99	2.0
100-399	6.5
400 or greater	12.0

3. A coronary calcium score of zero does NOT eliminate the **need for therapeutic lifestyle change therapy in patients with risk factors**. Prudent therapy in such patients would dictate a prolonged trial of diet and exercise before considering drug therapy for an elevated LDL cholesterol level, and in most cases, the use of a generic statin if medication is deemed necessary.

4. A score of **100 or greater** is associated with an increased future CHD risk and should be viewed as an indicator for the need for more intensive risk factor modification. Achievement and maintenance of lipid goals and careful attention to management of other CHD risk factors is warranted. Aspirin therapy should be initiated unless specifically contraindicated.

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Answer

The patient has mild subclinical coronary atherosclerosis. Such a patient should be given counseling on diet, exercise and achievement of weight goals (BMI of 18.5 to 24.9). A reasonable LDL-C goal in such a patient is less than 130 mg/dl, and optimally, less than 100 mg/dl. Thus far, insurers have not recognized patients with subclinical coronary atherosclerosis as having clinical coronary heart disease and have used more traditional clinical parameters for making this diagnosis. The National Cholesterol Education Program Adult Treatment Panel III recommends that intensity of lipid management be determined based upon the patient's absolute risk for a future coronary event. Our approach in patients documented to have any coronary calcium is to initiate appropriate preventive therapy in proportion to the amount of calcium detected.

5. The American Society of Echocardiography recommends stress echocardiography as an acceptable and reasonable test to be performed in patients with calcium of **400 or greater**. When such a test is ordered, a diagnosis code of coronary atherosclerosis (code 414.00) is appropriately utilized. When ischemia is found, medical therapy is warranted except in those patients demonstrating severe ischemia (ST segment elevation, 2.5 mm or more of ST segment depression in the absence of baseline ST segment abnormalities, exercise induced hypotension, or the inability to exercise into stage 2 of the Bruce protocol in the absence of orthopedic or musculoskeletal limitations), in whom cardiology consultation should be obtained.

For questions, please e-mail OHSU Lipid Clinic Director at **shapirmi@ohsu.edu**

To refer a patient or consult with our team, please call toll-free: 800 245-6478

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