

Coronary Artery Disease/Angina	Referral Guide: Page 1 of 2	Cardiology
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Diagnosis/Definition:

Narrowing of the coronary arteries reducing blood supply to the myocardium. The narrowing is usually caused by atherosclerosis; and it may progress to the point where the heart muscle is damaged due to lack of blood supply. Pain in some may radiate to the either shoulder or arm. The pain may also radiate to the back, jaw or abdomen. Patients often describe their symptoms as a discomfort, pressure or heaviness rather than pain. Patients may or may not have pain radiation, or associated complaints such as shortness of breath, nausea, diaphoresis, and lightheadedness.

Angina usually occurs with exertion and is relieved with rest and/or nitroglycerin.

Angina may also be precipitated by emotional stress or cold.

The pain from myocardial ischemia is generally not positional or pleuritic.

Coronary artery disease is not uncommon in middle aged and elderly adults, even those without some of the traditional risk factors (male gender, DM, hypertension, smoking, hyperlipidemia, family history of CAD).

Patients with chest pain at rest are worrisome, as they may be having an acute coronary syndrome (unstable angina or a myocardial infarction) for which emergent hospitalization is warranted. In some cases, patients may have an atypical presentation of myocardial ischemia (especially women and the elderly). On the other hand, there are many other causes of chest pain besides coronary artery disease, some benign (e.g. costochondritis) and other life-threatening (pulmonary embolus, aortic dissection).

When a patient has pain from myocardial ischemia at rest, it is uncommon for them to subsequently perform substantial physical activity without symptoms, unless they have been revascularized or treated medically in the interim.

Initial Diagnosis and Management:

History (see above) and physical. A detailed chest pain history is imperfect, but this is still the best way to determine who to admit, who to exercise, and who to manage expectantly. The physical examination in a patient with atherosclerosis may be relatively normal. Arterial bruits and other signs of peripheral vascular disease raise the odds of concomitant CAD, but the absence of bruits is not reassuring.

12 Lead EKG. One should have a very low threshold for obtaining this test in a patient with chest pain. However, an ECG is often normal in a patient with CAD, especially if the patient is pain free during the test.

PA and LAT CXR, if none obtained in recent past, or if there is new evidence of congestive heart failure.

Establish the presence or absence of rest angina. Not all rest pain is due to myocardial ischemia, but one should always consider whether rest pain may be cardiac. If, after thorough evaluation, the clinician still wonders whether a patient is having rest angina, transfer to an emergency room is warranted. Urgent referral to cardiology clinic is not a substitute for this, and stress testing is contraindicated when rest angina is present.

History of cold or emotion induced angina should be sought.

It is important to determine whether prior diagnostic procedures to evaluate coronary disease (Stress testing, Cardiac Catheterizations) were performed.

Consider precipitating factors like CHF, severe anemia, uncontrolled HTN, dysrhythmia, hyperthyroidism, smoking and drug abuse.

Aspirin and statins are warranted in the vast majority of patients with established or suspected CAD.

Patients generally should be prescribed sublingual nitroglycerin and be instructed about their use (as well as use of the 911 system for any rest pain).

Beta-blockers should generally be given to patients with angina or a previous myocardial infarction, unless there are contraindications such as significant bradycardia or heart block, significant reactive airway disease, or decompensated CHF. Patients with compensated CHF benefit from beta blockade, but these should be started at the lowest dose and increased gradually (usually every two weeks as tolerated).

Long acting nitrates (Isordil, nitropatch) and calcium blockers (e.g. amlodipine) may be useful antianginals, although certain calcium blockers (verapamil, diltiazem) may be harmful for patients with decreased LV systolic function (EF<50%).

ACE inhibitors are helpful to the majority of patients with coronary artery disease, when there are no contraindications. This is especially true for patients with depressed LV systolic function, diabetes, hypertension, and LVH.

Most patients with stable exertional angina should be considered for exercise stress testing. When the patient cannot exercise on a treadmill, pharmacologic imaging (such as dobutamine echo or Persantine Cardiolute) may be necessary. When the ECG has certain abnormalities (LBBB, digoxin effect, WPW pattern, ST depression more than 0.5 mm) stress imaging is necessary since a "plain" exercise treadmill test may be uninterpretable. For patients with established coronary artery disease, stress imaging is generally preferred over "plain" exercise stress testing.

Disclaimer: Adherence to these guidelines will not ensure successful treatment in every situation. Further, these guidelines should not be considered inclusive of all accepted methods of care or exclusive of other methods of care reasonably directed to obtaining the same results. The ultimate judgment regarding the appropriateness of any specific procedure, therapy, or referral must be made by the physician/provider in light of all circumstances presented by an individual patient.

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<p>Stable angina patients who are able to exercise should generally have an exercise test (rather than a pharmacologic stress test). Patients with LBBB are an exception; most cardiologists favor Persantine Cardiolite testing (over exercise testing) in chest pain patients with LBBB.</p> <p>Certain patients with angina should be considered for catheterization without stress testing. Examples include patients with rest angina, crescendo angina, or typical angina at a low workload. This consideration is especially true for patients already on reasonable medical therapy, or those whose blood pressure and heart rate preclude increases in medical therapy.</p> <p>Occasionally, patients with angina may be managed without any diagnostic testing (ETT or cath). For example, some elderly patients with mild exertional angina at a high workload may prefer empiric treatment for CAD to diagnostic testing.</p> <p>Echocardiography may be helpful, especially in patients with a prior MI and no assessment of LV function, or in patients with evidence of CHF. Of note, normal wall motion on a resting echocardiogram does not exclude severe coronary artery disease.</p> <p>Cardiac rehabilitation, in conjunction with other modalities, may be highly beneficial for patients with angina.</p> <p>Smoking cessation and nutritional counseling are warranted.</p>				
<p>Ongoing Management and Objectives:</p> <p>Elimination or reduction of anginal symptoms with improvement in ability to carry out activities of daily living. If this cannot be achieved to the patient's satisfaction through medications, cardiac rehab and lifestyle modifications, patients may opt for revascularization in order to improve symptoms. In patients with mild-moderate stable angina, revascularization will not necessarily decrease the likelihood of death or myocardial infarction, however.</p> <p>Identification of higher risk patients who should undergo catheterization. This may include patients with "early positive" stress tests, stress imaging tests with large areas of ischemia or multiple areas of ischemia, stress tests complicated by hypotension or significant arrhythmia, angina with heart failure/LV dysfunction, rest angina, crescendo angina, angina with previous MI, and angina with significant valvular heart disease.</p> <p>Reduction of LDL cholesterol to below 100 (or 70 for the highest risk patients).</p> <p>Treatment of diabetes and hypertension per existing guidelines.</p> <p>Avoidance of tobacco and illicit drugs.</p>				
<p>Indications for Specialty Care Referral:</p> <p>Identification of higher risk patients, or patients with mild-moderate exertional angina on medical therapy who desire revascularization in an effort to reduce anginal symptoms.</p> <p>Echocardiograms and stress tests (including nuclear perfusion tests, stress echocardiograms, and plain exercise treadmill tests) do not need cardiology approval or a cardiology clinic visit. These can be ordered by faxing the appropriate form to 303-436-7739 and calling 303-436-5499 to confirm the appointment time. Do not use scheduling.com to order stress tests or echos. Note that ordering a stress test or echocardiogram does not automatically result in ongoing management by a cardiologist. The ordering clinician is responsible for following up on test results.</p> <p>Cardiac rehabilitation for patients with angina, patients s/p recent MI or recent CABG, can be ordered by faxing a paper referral to 303-436-7739 and calling 303-436-5499 to confirm appointment time. Cardiac rehabilitation cannot be ordered through scheduling.com. Note that cardiac rehabilitation does not automatically include ongoing management by a cardiologist.</p>				
<table border="0"> <tr> <td data-bbox="99 1423 706 1692"> <p>Test(s) to Prepare for Consult:</p> <p>12 lead ECG if never done, or if symptoms have worsened since previous ECG.</p> <p>Consider exercise stress testing (see initial diagnosis and management)</p> <p>Consider echocardiography for patients with previous MI and/or CHF symptoms.</p> </td> <td data-bbox="706 1423 1534 1692"> <p>Test(s) Consultant May Need to Do:</p> <p>Further stress testing if indicated.</p> <p>Cardiac catheterization if indicated.</p> </td> </tr> </table>			<p>Test(s) to Prepare for Consult:</p> <p>12 lead ECG if never done, or if symptoms have worsened since previous ECG.</p> <p>Consider exercise stress testing (see initial diagnosis and management)</p> <p>Consider echocardiography for patients with previous MI and/or CHF symptoms.</p>	<p>Test(s) Consultant May Need to Do:</p> <p>Further stress testing if indicated.</p> <p>Cardiac catheterization if indicated.</p>
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<p>Criteria for Return to Primary Care:</p> <p>Stabilization or elimination of anginal symptoms, particularly when ongoing treatment of smoking, hyperlipidemia and hypertension can be accomplished in the primary care setting.</p>				
<p>Revision History: Created Revised:</p>				

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