



Magellan Healthcare		
Clinical guidelines HEART CATHETERIZATION	Original Date:	February 2010
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INTRODUCTION:

Heart Catheterization is an invasive angiographic procedure used to evaluate the presence and extent of coronary artery disease (CAD) as well as ventricular and valvular function. It can be used to perform various tests, including angiography, intravascular ultrasonography, and measurement of cardiac output (CO), detection and quantification of shunts, endomyocardial biopsy, and measurements of myocardial metabolism.

It should be primarily used in acute coronary syndromes and when an intervention is anticipated. These guidelines apply to patients with chronic stable conditions or new but stable conditions. In many but not all of these patients, exercise testing should be done prior to consideration of a left heart catheterization. However, a positive stress test should not automatically lead to cardiac catheterization since angioplasty/stenting may not be the best first-line therapy for stable coronary artery disease.

This guideline **may also** apply to patients in the acute setting, e.g. patients with acute coronary syndrome or unstable angina, who should receive emergency medical care.

Initial Clinical Reviewers (ICRs) and Physician Clinical Reviewers (PCRs) must be able to apply criteria based on individual needs and based on an assessment of the local delivery system.

INDICATIONS FOR LEFT HEART CATHETERIZATION:

- Acute coronary syndromes:
 - ST elevation or non-ST elevation myocardial infarction.
 - Acute chest pain suspicious for unstable angina with or without ECG changes.
- Identification of clinical syndromes in which revascularization may result in prolonged survival:
 - Left main coronary artery disease.
 - Three vessel coronary artery disease with left ventricular Ejection Fraction (EF) < 50%.
 - Strongly positive stress study, [abnormal hemodynamics, reduced exercise tolerance, strongly positive symptoms, (chest pain/ashen complexion)] and multiple wall motion defects on imaging.
- The clinical diagnosis of unstable angina, even in cases lacking additional supportive noninvasive cardiac testing.

- Evaluation of patients with known CAD :
 - results of noninvasive cardiac studies are equivocal or non-diagnostic, AND
 - symptoms are not responding adequately to optimized medical therapy
- Evaluation of patients who:
 - are unresponsive to optimized medical therapy, AND
 - require invasive procedures for pain relief.
- Further evaluation of the presence and/or extent of coronary artery disease, identified by noninvasive imaging studies, for those cases in which the results of catheterization will have a material impact on the patient management.
- Causal evaluation of left ventricular dysfunction (congestive heart failure) (EF<50%) in patients suspected of having coronary artery disease.
- Further evaluation of patients in whom non-invasive testing raised concerns for potential significant (>10%) jeopardized myocardium.
- Further evaluation in cases where recent noninvasive cardiac testing resulted in:
 - inability to delineate the clinical problem, or
 - indication for intervention or evaluation of the following conditions:
 - suspicion of cardiomyopathy, or myocarditis.
 - progression of known CAD when symptoms are worsening.
 - coronary grafts.
 - previously placed coronary artery stents.
 - structural disease.
- To rule out coronary artery disease prior to non-coronary cardiac or great vessel surgery (cardiac valve surgery, aortic dissection, aortic aneurysm, congenital disease repair such as atrial septal defect, or pericardial surgery).
- Significant ventricular arrhythmia such as Ventricular Tachycardia/Ventricular Fibrillation (VT/VF).
- Assessment of cardiac transplant for rejection.
- For evaluation of coronary anatomy, with consideration of percutaneous coronary intervention, prior to TAVR (Transcatheter Aortic Valve Replacement.)
- Based upon a high pretest probability of significant ischemia-producing coronary artery disease, coronary arteriography is indicated. Such high pretest probability of stable coronary artery disease requires specific details of the symptoms, to ascertain whether the presentation truly meets the ACC definition of typical angina, in appropriate age and gender categories, which would result in a pretest likelihood of ischemia-producing coronary artery disease above 80%.

ADDITIONAL INFORMATION:

Persistent symptoms indicative of CAD can include typical angina (e.g. exertional chest pain), atypical angina (e.g. arm or jaw pain, chest pressure or tightness), or angina equivalent (e.g. shortness of breath)

Optimized Medical Therapy Optimized Medical Therapy is defined as medical therapy for patients with known CAD consisting of at least an antiplatelet, antianginal, and lipid lowering agent. If a patient has a documented contraindication to any of these medications, they have met the criteria for being on OMT. Pharmaceutical agents may include (where

tolerated): antiplatelet agents, calcium channel antagonists, partial fatty acid oxidase inhibitors (e.g. ranolazine), statins, short-acting nitrates as needed, long-acting nitrates, beta blocker drugs (if no contraindication and patient can tolerate), angiotensin converting enzyme (ACE) inhibitors/angiotensin receptor blocking (ARB) agents (if no contraindication and patient can tolerate).

* NOTE: For those patients in whom heart catheterization is being requested for the diagnosis of CAD, this may not be required.

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