Complete Summary

GUIDELINE TITLE

ACR Appropriateness Criteria™ for recurrent symptoms following lower extremity angioplasty: claudication and threatened limb.

BIBLIOGRAPHIC SOURCE(S)

American College of Radiology (ACR), Expert Panel on Cardiovascular Imaging. Recurrent symptoms following lower extremity angioplasty: claudication and threatened limb. Reston (VA): American College of Radiology (ACR); 2002. 5 p. (ACR appropriateness criteria). [30 references]

COMPLETE SUMMARY CONTENT

SCOPE
METHODOLOGY - including Rating Scheme and Cost Analysis
RECOMMENDATIONS
EVIDENCE SUPPORTING THE RECOMMENDATIONS
BENEFITS/HARMS OF IMPLEMENTING THE GUIDELINE RECOMMENDATIONS
QUALIFYING STATEMENTS
IMPLEMENTATION OF THE GUIDELINE
INSTITUTE OF MEDICINE (IOM) NATIONAL HEALTHCARE QUALITY REPORT CATEGORIES
IDENTIFYING INFORMATION AND AVAILABILITY

SCOPE

DISEASE/CONDITION(S)

Recurrent symptoms following lower extremity angioplasty: claudication and threatened limb

GUIDELINE CATEGORY

Diagnosis

CLINICAL SPECIALTY

Radiology
Surgery

INTENDED USERS

Health Plans
Hospitals

Managed Care Organizations
Physicians
Utilization Management

GUIDELINE OBJECTIVE(S)

To evaluate the appropriateness of initial radiologic examinations for recurrent symptoms following lower extremity angioplasty: claudication and threatened limb

TARGET POPULATION

Patients with recurrent symptoms following lower extremity angioplasty: claudication and threatened limb

INTERVENTIONS AND PRACTICES CONSIDERED

1. Ankle-brachial indices
2. Peripheral arteriography
3. Other physiologic noninvasive tests
4. Duplex Doppler with color
5. Magnetic resonance angiography (MRA)
6. Duplex Doppler without color
7. Computed tomography (CT) angiography
8. Intravascular ultrasound
9. Peripheral venous ultrasound
10. Intravenous (IV) digital subtraction angiography (DSA)

MAJOR OUTCOMES CONSIDERED

Utility of radiologic examinations in differential diagnosis

METHODOLOGY

METHODS USED TO COLLECT/SELECT EVIDENCE

Searches of Electronic Databases

DESCRIPTION OF METHODS USED TO COLLECT/SELECT THE EVIDENCE

The guideline developer performed literature searches of recent peer-reviewed medical journals, primarily using the National Library of Medicine's MEDLINE database. The developer identified and collected the major applicable articles.

NUMBER OF SOURCE DOCUMENTS

The total number of source documents identified as the result of the literature search is not known.

METHODS USED TO ASSESS THE QUALITY AND STRENGTH OF THE EVIDENCE

Expert Consensus (Delphi Method)
Weighting According to a Rating Scheme (Scheme Not Given)

RATING SCHEME FOR THE STRENGTH OF THE EVIDENCE

Not applicable

METHODS USED TO ANALYZE THE EVIDENCE

Systematic Review with Evidence Tables

DESCRIPTION OF THE METHODS USED TO ANALYZE THE EVIDENCE

One or two topic leaders within a panel assume the responsibility of developing an evidence table for each clinical condition, based on analysis of the current literature. These tables serve as a basis for developing a narrative specific to each clinical condition.

METHODS USED TO FORMULATE THE RECOMMENDATIONS

Expert Consensus (Delphi)

DESCRIPTION OF METHODS USED TO FORMULATE THE RECOMMENDATIONS

Since data available from existing scientific studies are usually insufficient for meta-analysis, broad-based consensus techniques are needed to reach agreement in the formulation of the Appropriateness Criteria. Serial surveys are conducted by distributing questionnaires to consolidate expert opinions within each panel. These questionnaires are distributed to the participants along with the evidence table and narrative as developed by the topic leader(s). Questionnaires are completed by the participants in their own professional setting without influence of the other members. Voting is conducted using a scoring system from 1-9, indicating the least to the most appropriate imaging examination or therapeutic procedure. The survey results are collected, tabulated in anonymous fashion, and redistributed after each round. A maximum of three rounds is conducted and opinions are unified to the highest degree possible. Eighty (80) percent agreement is considered a consensus. If consensus cannot be reached by this method, the panel is convened and group consensus techniques are utilized. The strengths and weaknesses of each test or procedure are discussed and consensus reached whenever possible.

RATING SCHEME FOR THE STRENGTH OF THE RECOMMENDATIONS

Not applicable

COST ANALYSIS

A formal cost analysis was not performed and published cost analyses were not reviewed.

METHOD OF GUIDELINE VALIDATION

Internal Peer Review

DESCRIPTION OF METHOD OF GUIDELINE VALIDATION

Criteria developed by the Expert Panels are reviewed by the American College of Radiology (ACR) Committee on Appropriateness Criteria and the Chair of the ACR Board of Chancellors.

RECOMMENDATIONS

MAJOR RECOMMENDATIONS

ACR Appropriateness Criteria™

Clinical Condition: Recurrent Symptoms Following Lower Extremity Angioplasty

Variant 1: Claudication.

Radiologic Exam Procedure	Appropriateness Rating	Comments
Ankle-brachial indices	9	
Peripheral arteriography	8	
Other physiologic noninvasive tests	8	
Duplex Doppler with color	8	
MRA	8	
Duplex Doppler without color	4	
CT angiography	4	
Intravascular ultrasound	2	
Peripheral venous ultrasound	2	
IV DSA	2	
Appropriateness Criteria Scale 1 2 3 4 5 6 7 8 9		

Radiologic Exam Procedure	Appropriateness Rating	Comments
1=Least appropriate 9=Most appropriate		

Abbreviations: MRA, magnetic resonance angiography; CT, computed tomography; IV DSA, intravenous digital subtraction angiography

Variant 2: Threatened limb.

Radiologic Exam Procedure	Appropriateness Rating	Comments
Peripheral arteriography	9	
Ankle-brachial indices	8	
MRA	6	
Other physiologic noninvasive tests	4	
Duplex Doppler with color	4	
Duplex Doppler without color	4	
Intravascular ultrasound	2	
Peripheral venous ultrasound	2	
CT angiography	2	
IV DSA	2	
Appropriateness Criteria Scale 1 2 3 4 5 6 7 8 9 1=Least appropriate 9=Most appropriate		

Summary

A complete vascular physical examination including measurement of the ankle-brachial indices (ABI) is obviously the first step in assessing a patient with recurrent symptoms after an initially successful endovascular intervention. With this knowledge the clinician/angiographer can decide on appropriate imaging studies, the most commonly obtained being Duplex Doppler ultrasound (US) and contrast angiography (CA). If it is clear that reintervention (whether endovascular or by surgical reconstruction) is necessary, and the site of the problem is certain,

then proceeding directly to angiography may be appropriate. On the other hand, preliminary Duplex Doppler US imaging may more clearly define the problem, confirming a recurrence at the previously treated site or suggesting progression elsewhere. Duplex Doppler scanning is also currently considerably cheaper than CA, magnetic resonance angiography (MRA), and computed tomography angiography (CTA).

Magnetic resonance angiography and CTA are increasingly promising and available imaging techniques but have several limitations: 1) lack of available room time because of high demand for other examinations; 2) poor ability to distinguish mild and moderate degrees of restenosis; 3) time limitation preventing visualization of the entire vascular tree from the abdominal aorta to the pedal arches; 4) artifacts caused by metallic devices such as stents and surgical clips; and 5) poor ability to evaluate the condition of the more "normal" adjacent vessel segments. On the other hand, when available, there can be indications for their use over CA, especially if surgical intervention is likely. Magnetic resonance angiography has been shown to be able to image potentially by-passable infrapopliteal and pedal vessels that may not be visualized by CA. Magnetic resonance angiography and CTA may more easily visualize lesions obscured by overlying bone cortex in the calf. In patients who are at risk for renal function deterioration and significant reactions to iodinated contrast medium, MRA may be the procedure of choice and even warrant sending a patient to another institution with MRA capability.

Anticipated Exceptions

Patients presenting with critical recurrent ischemia with motor and sensory deficit occurring shortly after a percutaneous intervention (<7-10 days), and in whom the anatomy is well understood, may proceed directly to surgical revascularization by bypass or thrombectomy.

CLINICAL ALGORITHM(S)

Algorithms were not developed from criteria guidelines.

EVIDENCE SUPPORTING THE RECOMMENDATIONS

TYPE OF EVIDENCE SUPPORTING THE RECOMMENDATIONS

The recommendations are based on analysis of the current literature and expert panel consensus.

BENEFITS/HARMS OF IMPLEMENTING THE GUIDELINE RECOMMENDATIONS

POTENTIAL BENEFITS

Overall Benefit

Appropriate selection of radiologic imaging procedures for recurrent symptoms following lower extremity angioplasty: claudication and threatened limb

Specific Benefits

- Contrast angiography has the ability to permit accurate localization and quantification of obstructive lesions and may also allow physiological evaluation by determining pressure gradients.
- Magnetic resonance angiography (MRA) is totally noninvasive and without any significant risk.

Subgroups Most Likely to Benefit:

Patients with restenosis and/or occlusion

POTENTIAL HARMS

Contrast angiography (CA) is an invasive technique that has a small but definite risk in any patient.

Subgroups Most Likely to be Harmed:

Contrast angiography (CA) has a variable higher risk in patients with severe widespread vascular disease, diabetes, renal insufficiency, and other contraindications to the use of contrast media.

QUALIFYING STATEMENTS

QUALIFYING STATEMENTS

An American College of Radiology (ACR) Committee on Appropriateness Criteria and its expert panels have developed criteria for determining appropriate imaging examinations for diagnosis and treatment of specified medical condition(s). These criteria are intended to guide radiologists, radiation oncologists, and referring physicians in making decisions regarding radiologic imaging and treatment. Generally, the complexity and severity of a patient's clinical condition should dictate the selection of appropriate imaging procedures or treatments. Only those exams generally used for evaluation of the patient's condition are ranked. Other imaging studies necessary to evaluate other co-existent diseases or other medical consequences of this condition are not considered in this document. The availability of equipment or personnel may influence the selection of appropriate imaging procedures or treatments. Imaging techniques classified as investigational by the U.S. Food and Drug Administration (FDA) have not been considered in developing these criteria; however, study of new equipment and applications should be encouraged. The ultimate decision regarding the appropriateness of any specific radiologic examination or treatment must be made by the referring physician and radiologist in light of all the circumstances presented in an individual examination.

IMPLEMENTATION OF THE GUIDELINE

DESCRIPTION OF IMPLEMENTATION STRATEGY

An implementation strategy was not provided.

INSTITUTE OF MEDICINE (IOM) NATIONAL HEALTHCARE QUALITY REPORT CATEGORIES

IOM CARE NEED

Getting Better
Living with Illness

IOM DOMAIN

Effectiveness

IDENTIFYING INFORMATION AND AVAILABILITY

BIBLIOGRAPHIC SOURCE(S)

American College of Radiology (ACR), Expert Panel on Cardiovascular Imaging. Recurrent symptoms following lower extremity angioplasty: claudication and threatened limb. Reston (VA): American College of Radiology (ACR); 2002. 5 p. (ACR appropriateness criteria). [30 references]

ADAPTATION

Not applicable: The guideline was not adapted from another source.

DATE RELEASED

1998 (revised 2002)

GUIDELINE DEVELOPER(S)

American College of Radiology - Medical Specialty Society

SOURCE(S) OF FUNDING

The American College of Radiology (ACR) provided the funding and the resources for these ACR Appropriateness Criteria™.

GUIDELINE COMMITTEE

ACR Appropriateness Criteria™ Committee, Expert Panel on Cardiovascular Imaging

COMPOSITION OF GROUP THAT AUTHORED THE GUIDELINE

Panel Members: Julius Grollman, MD; Michael A. Bettmann, MD; Lawrence M. Boxt, MD; Antoinette S. Gomes, MD; Martin J. Lipton, MD; Heriberto Pagan-Marin,

MD; Joseph F. Polak, MD, MPH; Neil M. Rofsky, MD; David Sacks, MD; William Stanford, MD; Jack A. Ziffer, MD, PhD; Gregory L. Moneta, MD; Michael Jaff, MD

FINANCIAL DISCLOSURES/CONFLICTS OF INTEREST

Not stated

GUIDELINE STATUS

This is the current release of the guideline. It updates a previously published version: Recurrent symptoms following lower extremity angioplasty: claudication and threatened limb. American College of Radiology. ACR Appropriateness Criteria. Radiology 2000 Jun;215(Suppl):95-9.

The ACR Appropriateness Criteria™ are reviewed after five years, if not sooner, depending upon introduction of new and highly significant scientific evidence. The anticipated next review date for this topic is 2007.

GUIDELINE AVAILABILITY

Electronic copies: Available in Portable Document Format (PDF) from the American College of Radiology (ACR) Web site.

Print copies: Available from American College of Radiology, 1891 Preston White Drive, Reston, VA 20191. Telephone: (703) 648-8900.

AVAILABILITY OF COMPANION DOCUMENTS

None available

PATIENT RESOURCES

None available

NGC STATUS

This summary was completed by ECRI on February 20, 2001. The information was verified by the guideline developer on March 14, 2001. This summary was updated by ECRI on March 31, 2003. The updated information was verified by the guideline developer on April 21, 2003.

COPYRIGHT STATEMENT

This NGC summary is based on the original guideline, which is subject to the guideline developer's copyright restrictions.

Appropriate instructions regarding downloading, use and reproduction of the American College of Radiology (ACR) Appropriateness Criteria™ guidelines may be found at the American College of Radiology's Web site, www.acr.org.

© 1998-2004 National Guideline Clearinghouse

Date Modified: 11/8/2004