Complete Summary

GUIDELINE TITLE

ACR Appropriateness Criteria™ for recurrent symptoms following lower extremity arterial bypass surgery.

BIBLIOGRAPHIC SOURCE(S)

Hessel SJ, Levin DC, Bettmann MA, Gomes AS, Grollman J, Henkin RE, Higgins CB, Kelley MJ, Needleman L, Polak JF, Stanford W, Wexler L, Abbott W, Port S. Recurrent symptoms following lower extremity arterial bypass surgery. American College of Radiology. ACR Appropriateness Criteria. Radiology 2000 Jun;215(Suppl):89-93. [18 references]

COMPLETE SUMMARY CONTENT

SCOPE

DISEASE/CONDITION(S)

Recurrent symptoms following lower extremity arterial bypass surgery

GUIDELINE CATEGORY

Diagnosis
Evaluation

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 arterial bypass surgery

TARGET POPULATION

Patients with recurrent symptoms following lower extremity arterial bypass surgery

INTERVENTIONS AND PRACTICES CONSIDERED

1. Physiologic noninvasive tests
2. Duplex Doppler with color
3. Peripheral arteriography
4. Magnetic resonance angiography
5. Duplex Doppler without color
6. Computed tomography angiography
7. Peripheral venous ultrasound
8. Intravenous digital subtraction angiography

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 Arterial Bypass Surgery

Variant 1: Claudication/suprainguinal graft.

Radiologic Exam Procedure	Appropriateness Rating	Comments
Physiologic Noninvasive Tests	8	
Duplex Doppler with Color	8	
Peripheral Arteriography	8	
Magnetic Resonance Angiography	6	
Duplex Doppler without Color	4	
Computed Tomography Angiography	4	
Peripheral Venous Ultrasound	2	
Intravenous Digital Subtraction Angiography	2	
Appropriateness Criteria Scale 1 2 3 4 5 6 7 8 9 1=Least appropriate 9=Most appropriate		

Variant 2: Claudication/infrainguinal vein graft.

Radiologic Exam Procedure	Appropriateness Rating	Comments
Physiologic Noninvasive Tests	8	
Duplex Doppler with Color	8	
Peripheral Arteriography	8	
Magnetic Resonance Angiography	6	
Duplex Doppler without Color	4	
Computed Tomography Angiography	4	
Peripheral Venous Ultrasound	2	
Intravenous Digital Subtraction Angiography	2	
Appropriateness Criteria Scale 1 2 3 4 5 6 7 8 9 1=Least appropriate 9=Most appropriate		

Variant 3: Claudication/infrainguinal prosthetic graft.

Radiologic Exam Procedure	Appropriateness Rating	Comments
Physiologic Noninvasive Tests	8	
Duplex Doppler with Color	8	
Peripheral Arteriography	8	
Magnetic Resonance Angiography	6	
Duplex Doppler without Color	4	
Computed Tomography Angiography	4	

Peripheral Venous Ultrasound	2	
Intravenous Digital Subtraction Angiography	2	
Appropriateness Criteria Scale 1 2 3 4 5 6 7 8 9 1=Least appropriate 9=Most appropriate		

Variant 4: Threatened limb/suprainguinal graft.

Radiologic Exam Procedure	Appropriateness Rating	Comments
Ankle-Brachial Indices	9	
Peripheral Arteriography	9	
Duplex Doppler with Color	8	
Other Physiologic Noninvasive Tests	4	
Duplex Doppler without Color	4	
Magnetic Resonance Angiography	4	
Peripheral Venous Ultrasound	2	
Computed Tomography Angiography	2	
Intravenous Digital Subtraction Angiography	2	
Appropriateness Criteria Scale 1 2 3 4 5 6 7 8 9 1=Least appropriate 9=Most appropriate		

Variant 5: Threatened limb/infrainguinal vein graft.

Radiologic Exam Procedure	Appropriateness Rating	Comments

Ankle-Brachial Indices	9	
Peripheral Arteriography	9	
Duplex Doppler with Color	8	
Magnetic Resonance Angiography	6	In selected cases, to determine patency of distal vessels.
Other Physiologic Noninvasive Tests	4	
Duplex Doppler without Color	4	
Peripheral Venous Ultrasound	2	
Computed Tomography Angiography	2	
Intravenous Digital Subtraction Angiography	2	
Appropriateness Criteria Scale 1 2 3 4 5 6 7 8 9 1=Least appropriate 9=Most appropriate		

Variant 6: Threatened limb/infrainguinal prosthetic graft.

Radiologic Exam Procedure	Appropriateness Rating	Comments
Ankle-Brachial Indices	9	
Peripheral Arteriography	9	
Duplex Doppler with Color	8	
Magnetic Resonance Angiography	6	In selected cases, to determine patency of distal vessels.
Other Physiologic Noninvasive Tests	4	
Duplex Doppler without Color	4	
Peripheral Venous Ultrasound	2	
Computed Tomography	2	

Angiography		
Intravenous Digital Subtraction Angiography	2	
Appropriateness Criteria Scale 1 2 3 4 5 6 7 8 9 1=Least appropriate 9=Most appropriate		

The evaluation of patients at and subsequent to lower extremity vascular reconstruction treads a fine line between clinical utility and limb salvage on the one hand and overutilization on the other. The variants of this condition which are most clearly delineated in the literature are the short-term post operative follow-up of two-three weeks versus the longer term follow up of months to years. Several investigators have clearly delineated the value of Doppler ultrasound in assessing vascular integrity during and at the completion of vascular surgical procedures. In general, this is compared with the "gold standard" of completion arteriography. In a study comparing patients who underwent completion arteriography with those who did not, the data indicates that completion arteriography provides insights into the immediate effects of surgery which cannot be obtained with clinical evaluation and palpation. Some investigators have recommended the use of angioscopy as a tool for evaluation at the completion of vascular surgical procedures. However, a significant body of prospective data comparing angioscopy with other techniques is not available. Additionally, due to the limited utilization of angioscopy in other clinical settings, that equipment is not readily available in all facilities.

In the longer term follow up of patients with lower extremity vascular reconstruction, the general consensus is that clinical and pressure measurement parameters are useful but have significant limitations. Sophisticated serial duplex Doppler ultrasonic scanning of the lower extremity, while not ideal, is the procedure of choice for detecting vascular lesions prior to complete occlusion. Opinion varies as to the frequency of such evaluation. The general trend, however, is to lengthen the interval between evaluations when there is stability in the ultrasound data. However, there are those who suggest that surveillance may be of limited value, or should be performed for only a finite period, for example one year since the vast majority of graft related lesions will occur in that period. Regardless of the protocols used, in the majority of instances, when abnormalities are detected on ultrasound, the patient undergoes arteriography in order to optimally delineate the nature and severity of any new lesions as well as to assess the progress of native disease. In instances where patients present with threatened limbs, arteriography remains the procedure of choice.

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

Appropriate selection of radiologic exam procedures to aid in differential diagnosis of patients with recurrent symptoms following lower extremity arterial bypass surgery

POTENTIAL HARMS

None identified

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)

Hessel SJ, Levin DC, Bettmann MA, Gomes AS, Grollman J, Henkin RE, Higgins CB, Kelley MJ, Needleman L, Polak JF, Stanford W, Wexler L, Abbott W, Port S. Recurrent symptoms following lower extremity arterial bypass surgery. American College of Radiology. ACR Appropriateness Criteria. Radiology 2000 Jun;215(Suppl):89-93. [18 references]

ADAPTATION

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

DATE RELEASED

1998

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

Names of Panel Members: Samuel J. Hessel, MD; David C. Levin, MD; Michael A. Bettmann, MD; Antoinette S. Gomes, MD; Julius Grollman, MD; Robert E. Henkin, MD; Charles B. Higgins, MD; Michael J. Kelley, MD; Laurence Needleman, MD;

Joseph F. Polak, MD, MPH; William Stanford, MD; Lewis Wexler, MD; William Abbott, MD; Steven Port, MD

FINANCIAL DISCLOSURES/CONFLICTS OF INTEREST

Not stated

GUIDELINE STATUS

This is the current release of the guideline.

The ACR Appropriateness Criteria™ are reviewed after five years, if not sooner, depending upon introduction of new and highly significant scientific evidence. The next review date for this topic is 2003.

GUIDELINE AVAILABILITY

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

Print copies: Available from ACR, 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.

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