Complete Summary

GUIDELINE TITLE

ACR Appropriateness Criteria™ for anal cancer.

BIBLIOGRAPHIC SOURCE(S)

American College of Radiology (ACR), Expert Panel on Radiation Oncology-Rectal/Anal Cancer. Anal cancer. Reston (VA): American College of Radiology (ACR); 2002. 11 p. (ACR appropriateness criteria). [31 references]

COMPLETE SUMMARY CONTENT

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SCOPE

DISEASE/CONDITION(S)

Anal cancer

GUIDELINE CATEGORY

Treatment

CLINICAL SPECIALTY

Oncology
Radiation Oncology
Radiology

INTENDED USERS

Health Plans
Hospitals
Managed Care Organizations

Physicians
Utilization Management

GUIDELINE OBJECTIVE(S)

To evaluate the appropriateness of treatment procedures for anal cancer

TARGET POPULATION

Patients with anal cancer

INTERVENTIONS AND PRACTICES CONSIDERED

1. Surgery, such as abdominoperineal resection
2. Radiation alone--external beam
3. Radiation alone--interstitial radiation (brachytherapy)
4. Chemotherapy, such as 5-fluorouracil, mitomycin, cisplatin, PLUS radiation (chemoradiation)

MAJOR OUTCOMES CONSIDERED

- 5-year survival
- Local control; local recurrence
- Colostomy rate

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: Cancer of Anus/Anal Canal

Variant 1: 73-year-old male, T1N0M0. Karnofsky Performance Status 80.

Treatment	Appropriateness Rating	Comments
Local Excision, Negative Margins		
RT + 5FU/MMC or CDDP	8	
RT alone	4	
APR	2	
Brachytherapy alone	2	
Local Excision, Positive Margins		
RT + 5FU/MMC or CDDP	8	
RT alone	4	
Reexcision	2	
APR	2	
In Patient who Refuses Chemo: External RT Alone, Dose Needed		
55.8 Gy/1.8 Gy	8	
59.4 Gy/1.8 Gy	8	
45 Gy/1.8 Gy	2	
50.4 Gy/1.8 Gy	2	
In Patient who Refuses Chemo: RT Alone: Rx Volume Needed		
Pelvis + primary + medial inguinal LNs	8	
Primary alone	2	

Treatment	Appropriateness Rating	Comments
Pelvis + primary + lateral inguinal LNs	2	
If RT + Chemo: RT Dose Needed		
45 Gy/1.8 Gy	8	
50.4 Gy/1.8 Gy	8	
40 Gy/2.0 Gy	2	
59.4 Gy/1.8 Gy	2	
If RT + Chemo: RT Volume Needed		
Pelvis + primary + medial inguinal LNs	8	
Pelvis + primary + lateral inguinal LNs	2	
Primary alone	2	
Technique: RT +/- Chemo		
AP/PA Photons	6	
PA + laterals + e^- boost to inguinal LNs	6	
4 field box	6	
Appropriateness Criteria Scale 1 2 3 4 5 6 7 8 9 1=Least appropriate 9=Most appropriate		

Abbreviations: RT, radiation therapy; 5FU, 5-fluorouracil; MMC, mitomycin; CDDP, cisplatin; APR, abdominoperineal resection; LNs, lymph nodes; AP/PA, anteroposterior/posteroanterior; PA, posteroanterior

Variant 2: 65-year-old female, T2N0M0. Karnofsky Performance Status 60.

Treatment	Appropriateness Rating	Comments
External beam RT + 5FU	8	Depending on patient's medical status.
External beam RT + 5FU + MMC or CDDP	8	Depending on patient's medical status.

Treatment	Appropriateness Rating	Comments
External beam RT alone	4	
APR	2	
External beam + brachytherapy	2	
If RT + Chemo: RT Dose Needed		
45 Gy/1.8 Gy	8	
50.4 Gy/1.8 Gy	8	
40 Gy/2.0 Gy	2	
59.4 Gy/1.8 Gy	2	
Rx for Residual Disease Post chemo RT within 6 Months		
CDDP + RT	8	
APR	8	
Brachytherapy	4	
Local excision	2	
RT Treatment Volume		
Pelvis + primary + medial inguinal LNs	8	
Pelvis + primary + lateral inguinal LNs	8	
Primary alone	2	
Routine Post-biopsy Treatment		
None if clinical regression	8	
6 weeks	2	
12 weeks	2	
26 weeks	2	
38 weeks	2	
Appropriateness Criteria Scale 1 2 3 4 5 6 7 8 9 1=Least appropriate 9=Most appropriate		

Variant 3: 45-year-old male, T3N0M0. Karnofsky Performance Status 80.

Treatment	Appropriateness Rating	Comments
External beam RT + 5FU + MMC or CDDP	9	
APR	2	
External beam RT alone	2	
External beam RT + 5FU	2	
External beam + brachytherapy	2	
If RT + Chemo: RT Dose Needed		
45 Gy/1.8 Gy	8	
50.4 Gy/1.8 Gy	8	
59.4 Gy/1.8 Gy	8	
40 Gy/2.0 Gy	2	
If Patient Refuses Chemo, External RT Alone Dose		
59.4 Gy/1.8 Gy	8	
55.8 Gy/1.8 Gy	6	
45 Gy/1.8 Gy	2	
50.4 Gy/1.8 Gy	2	
Treatment for Residual Disease Post-chemo RT within 6 Months		
APR	8	
CDDP + RT	6	
Brachytherapy	2	
Local excision	2	
RT + Chemo: Drugs (for Salvage Rx)		
RT + 5FU + CDDP or MMC	8	
RT + 5FU alone	2	
RT + 5FU (2 cycles) +	2	

Treatment	Appropriateness Rating	Comments
MMC (2 cycles)		
Appropriateness Criteria Scale 1 2 3 4 5 6 7 8 9 1=Least appropriate 9=Most appropriate		

Clinical Condition: Cancer of Anus/Anal Canal

Variant 4: 50-year-old female, T1N2M0 right inguinal 2-cm node + M0. Karnofsky Performance Status 90.

Treatment	Appropriateness Rating	Comments
RT + 5FU + MMC or CDDP	9	
APR	2	
RT alone	2	
Groin dissection + RT + chemo	2	Not appropriate in routine cases.
In Patient who Refuses Chemo, Total Dose to Primary (External RT Alone)		
50.4 Gy/1.8 Gy	8	
55.8 Gy/1.8 Gy	8	
59.4 Gy/1.8 Gy	8	
45 Gy/1.8 Gy	2	
40 Gy/2.0 Gy	2	
Dose to Right Inguinal Node with RT + Chemo		
50.4 Gy/1.8 Gy	8	
45 Gy/1.8 Gy	6	
59.4 Gy/1.8 Gy	6	
40 Gy/2.0 Gy	2	
Technique: RT +/- Chemo, No Surgery		
AP/PA photons	6	
PA + laterals + e-	6	

Treatment	Appropriateness Rating	Comments
boost to inguinal nodes		
4 field box	6	
Appropriateness Criteria Scale 1 2 3 4 5 6 7 8 9 1=Least appropriate 9=Most appropriate		

Abbreviations: RT, radiation therapy; 5FU, 5-fluorouracil; MMC, mitomycin; CDDP, cisplatin; APR, abdominoperineal resection; AP/PA, anteroposterior/posteroanterior; PA, posteroanterior

Variant 5: 45-year-old male, T4N3M0. Karnofsky Performance Status 80.

Treatment	Appropriateness Rating	Comments
Induction Chemotherapy		
5FU/CDDP	6	
5FU/MMC	2	
Primary Treatment		
RT + 5FU + MMC or CDDP	9	
APR + node dissection	2	
RT alone	2	
APR + node dissection + chemo RT	2	
RT + Chemo: RT Dose		
55.8 Gy/1.8 Gy	8	
59.4 Gy/1.8 Gy	8	
50.4 Gy/1.8 Gy	2	
70.2 Gy/1.8 Gy	2	
Salvage Treatment (If Not Used in Induction)		
APR	8	
APR + postoperative	6	

Treatment	Appropriateness Rating	Comments
RT + chemo		
5FU + CDDP + RT	2	
Brachytherapy	2	
Appropriateness Criteria Scale 1 2 3 4 5 6 7 8 9 1=Least appropriate 9=Most appropriate		

Variant 6: 56-year-old male, T3N0M0, dose 50.4 Gy with 5FU + MMC with initial CR, now with biopsy of primary at 7 months = positive (recurrent).

Treatment	Appropriateness Rating	Comments
APR	8	
Postoperative chemo + APR	6	
Brachytherapy alone	2	
Additional RT + chemo	2	
Local excision	2	
Appropriateness Criteria Scale 1 2 3 4 5 6 7 8 9 1=Least appropriate 9=Most appropriate		

Abbreviations: 5FU, 5-fluorouracil; MMC, mitomycin; CR, complete response; APR, abdominoperineal resection; RT, radiation therapy

Summary

Tumors of the Anal Margin

Patients with very early stage (T1M0N0) anal margin cancer are very well managed by local wide excision or by radiotherapy alone. The recommended radiation dose in these cases is between 60 and 65 Gy in 6 to 7 weeks. More advanced diseases at the anal margin are managed with treatment options similar to those for anal canal cancers, stage for stage.

Treatments

Surgical Management

Radical surgery in the form of abdominoperineal resection (APR) that resulted in permanent colostomies was the standard treatment of choice for anal cancers until the 1970s, before radiotherapy alone and then chemoradiation supplanted this procedure. Abdominoperineal resection yielded 5-year survival rates of approximately 50% and local recurrence rates of approximately 30%. The role of APR for chemoradiation failures is discussed with salvage treatment.

Local excision with wide margins may be an alternative to radiotherapy in the treatment of selected patients with T1N0M0 anal canal cancers as long as sphincter function can be preserved. The cure rates are markedly lower, however: approximately 60% at 5 years with local recurrences at about 40%. The reciprocal figures for radiotherapy alone are 90% to 100% 5-year survival and 10% to 20% local failure.

Biopsies for initial diagnosis and for establishing local residual/recurrent disease should also be done with caution in the interest of sphincter function.

Radiation Alone--External Beam

The efficacy of radiation alone in patients with anal cancer has been well studied. Despite encouraging results of radiation alone, chemoradiation has been shown to be superior to radiation in patients with anal canal cancer.

Radiation Alone--Interstitial Radiation (Brachytherapy)

Few studies have reported on the efficacy of brachytherapy alone. No direct comparison of brachytherapy versus chemoradiation has been made; however, the results that are available are clearly inferior to those of combined modality treatment.

Radiation Alone Versus Chemoradiation

Concurrent chemotherapy and radiation yield results superior to those of radiation alone or radical surgical resection. Consequently, chemoradiation is now the standard of care.

Dose of Radiation

The appropriate radiation dose for anal cancer has not been fully elucidated. Several studies suggest that doses in excess of 55.8 Gy result in higher local control rates than lower doses of radiation. However, increased radiation dose did not increase local control when given in a split-course fashion in a Phase 2 Radiation Therapy Oncology Group (RTOG) study. A split course resulted in less grade 3 or higher toxicity; however, the colostomy rate was also noted to be higher. Therefore, a pre-planned split-course of radiation is not recommended.

Nodal Metastasis

Anal cancers spread to the perirectal, inguinal, and internal and external iliac groups of lymph nodes, and this occurs in about 30% of patients in surgical

series. Consequently, all three groups of lymph nodes are included in radiotherapy fields described in chemoradiation series.

Salvage Treatment

The appropriate time to assess local response to treatment, the determination of the existence of a local failure and whether salvage is needed, and the appropriate salvage treatment have not been fully established.

Treatment of Adenocarcinoma

The Rare Cancer Network (RCN) study concluded that combined treatment modality with chemotherapy and radiotherapy was the treatment of choice, giving the best survival rates and that APR was to be reserved for salvage treatment of persistent or recurrent disease.

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 treatment procedures for patients with anal cancer

POTENTIAL HARMS

- Mitomycin was associated with increased frequency and severity of toxicity, particularly hematologic toxicity.
- Significant toxicity occurred when combined bolus cisplatin with infusional 5-fluorouracil (5FU) and radiation therapy were used.

Subgroups Most Likely to be Harmed:

Suitability for Definitive Treatment

- Known human immunodeficiency virus (HIV) infection per se is not necessarily a contraindication to the use of standard recommended treatments. Patients with cytopenias or with frank manifestations of acquired immunodeficiency syndrome (AIDS), however, may have a decreased ability to tolerate treatment. A patient's overall performance status, complete blood

count (CBC), and T cell counts (CD3/CD4 status) should be considered in selecting therapy.
- Other relative reasons that might preclude definitive treatment include previous pelvic radiotherapy/surgery or underlying medical, psychiatric, and/or social reasons.

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 Radiation Oncology-Rectal/Anal Cancer. Anal cancer. Reston (VA): American College of Radiology (ACR); 2002. 11 p. (ACR appropriateness criteria). [31 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 Radiation Oncology-Rectal/Anal Cancer Work Group

COMPOSITION OF GROUP THAT AUTHORED THE GUIDELINE

Panel Members: Madhu J. John, MD; Bruce D. Minsky, MD; Nora A. Janjan, MD; Seth A. Rosenthal, MD; Joel E. Tepper, MD; David Ota, MD; Leonard Saltz, MD; Steven Leibel, MD

FINANCIAL DISCLOSURES/CONFLICTS OF INTEREST

Not stated

GUIDELINE STATUS

This is the current release of the guideline. It updates a previously published version: Anal cancer. American College of Radiology. ACR Appropriateness Criteria. Radiology 2000 Jun;215(Suppl):1501-11.

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 March 31, 2003. The information was verified by the guideline developer on April 21, 2003.

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