

ACR Appropriateness Criteria[®]

Post-treatment Follow-up Prostate Cancer

Expert Panel on Urologic Imaging: Adam T. Froemming, MD^a, Sadhna Verma, MD^b, Steven C. Eberhardt, MD^c, Aytekin Oto, MD^d, Lauren F. Alexander, MD^e, Brian C. Allen, MD^f, Fergus V. Coakley, MD^g, Brian J. Davis, MD, PhD^h, Pat F. Fulgham, MDⁱ, Keyanoosh Hosseinzadeh, MD^j, Christopher Porter, MD^k, V. Anik Sahni, MD^l, David M. Schuster, MD^m, Timothy N. Showalter, MD, MPHⁿ, Aradhana M. Venkatesan, MD^o, Carolyn L. Wang, MD^p, Erick M. Remer, MD^q

Abstract

Diagnosis and management of prostate cancer post treatment is a large and complex problem, and care of these patients requires multidisciplinary involvement of imaging, medical, and surgical specialties. Imaging capabilities for evaluation of men with recurrent prostate cancer are rapidly evolving, particularly with PET and MRI. At the same time, treatment options and capabilities are expanding and improving. These recommendations separate patients into three broad categories: (1) patients status post–radical prostatectomy, (2) clinical concern for residual or recurrent disease after nonsurgical local and pelvic treatments, and (3) metastatic prostate. This article is a review of the current literature regarding imaging in these settings and the resulting recommendations for imaging.

The American College of Radiology Appropriateness Criteria are evidence-based guidelines for specific clinical conditions that are reviewed annually by a multidisciplinary expert panel. The guideline development and revision include an extensive analysis of current medical literature from peer reviewed journals and the application of well-established methodologies (RAND/UCLA Appropriateness Method and Grading of Recommendations Assessment, Development, and Evaluation or GRADE) to rate the appropriateness of imaging and treatment procedures for specific clinical scenarios. In those instances where evidence is lacking or equivocal, expert opinion may supplement the available evidence to recommend imaging or treatment.

Key Words: Appropriateness Criteria, Appropriate Use Criteria, AUC, Choline and fluciclovine PET, Metastatic prostate cancer, MRI, Prostate cancer, Recurrent prostate cancer

J Am Coll Radiol 2018;15:S132-S149. Copyright © 2018 American College of Radiology

^aPrincipal Author, Mayo Clinic, Rochester, Minnesota.

^bCo-author, University of Cincinnati Medical Center, Cincinnati, Ohio.

^cPanel Chair, University of New Mexico, Albuquerque, New Mexico.

^dPanel Vice Chair, University of Chicago, Chicago, Illinois.

^eMayo Clinic, Jacksonville, Florida.

^fDuke University Medical Center, Durham, North Carolina.

^gOregon Health & Science University, Portland, Oregon.

^hMayo Clinic, Rochester, Minnesota.

ⁱUrology Clinics of North Texas, Dallas, Texas; American Urological Association.

^jWake Forest University School of Medicine, Winston Salem, North Carolina.

^kVirginia Mason Medical Center, Seattle, Washington; American Urological Association.

^lBrigham & Women's Hospital, Boston, Massachusetts.

^mEmory University Hospital, Atlanta, Georgia.

ⁿUniversity of Virginia, Charlottesville, Virginia.

^oUniversity of Texas MD Anderson Cancer Center, Houston, Texas.

^pUniversity of Washington, Seattle Cancer Care Alliance, Seattle, Washington.

^qSpecialty Chair, Cleveland Clinic, Cleveland, Ohio.

Corresponding author: Adam T. Froemming, MD, Mayo Clinic, Attn: Abdominal Imaging, Mayo Clinic, 200 1st ST SW, Rochester, MN 55905-0002; e-mail: froemming.adam@mayo.edu.

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Dr. Coakley reports other from Omnicell Instruments, Inc., outside the submitted work; in addition, Dr. Coakley has a patent filed for the Omnicell device described above pending. Dr. Oto reports grants from Profound Healthcare, grants from Guerbet, grants from Philips Healthcare, personal fees from Profound Healthcare, and personal fees from Abbott, outside the submitted work.

Disclaimer: The 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 examinations 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 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.

Variant 1. Prostate cancer follow-up. Status post radical prostatectomy. Clinical concern for residual or recurrent disease.

Procedure	Appropriateness Category	Relative Radiation Level
C-11 choline PET/CT skull base to mid-thigh	Usually Appropriate	⚙⚙⚙
MRI pelvis without and with IV contrast	Usually Appropriate	0
F-18 fluciclovine PET/CT skull base to mid-thigh	Usually Appropriate	⚙⚙⚙⚙
CT abdomen and pelvis with IV contrast	May Be Appropriate	⚙⚙⚙⚙
MRI-targeted biopsy prostate	May Be Appropriate	0
Tc-99m bone scan whole body	May Be Appropriate	⚙⚙⚙
TRUS guided biopsy prostate	May Be Appropriate	0
MRI abdomen and pelvis without and with IV contrast	May Be Appropriate (Disagreement)	0
CT abdomen and pelvis without IV contrast	Usually Not Appropriate	⚙⚙⚙⚙
CT chest abdomen pelvis with IV contrast	Usually Not Appropriate	⚙⚙⚙⚙
FDG-PET/CT skull base to mid-thigh	Usually Not Appropriate	⚙⚙⚙⚙
MRI abdomen and pelvis without IV contrast	Usually Not Appropriate	0
MRI pelvis without IV contrast	Usually Not Appropriate	0
CT abdomen and pelvis without and with IV contrast	Usually Not Appropriate	⚙⚙⚙⚙
CT chest abdomen pelvis without and with IV contrast	Usually Not Appropriate	⚙⚙⚙⚙
CT chest abdomen pelvis without IV contrast	Usually Not Appropriate	⚙⚙⚙⚙
TRUS prostate	Usually Not Appropriate	0
X-ray skeletal survey	Usually Not Appropriate	⚙⚙⚙

FDG = fluorine-18-2-fluoro-2-deoxy-D-glucose; IV = intravenous; TRUS = transrectal ultrasound.

Variant 2. Prostate cancer follow-up. Clinical concern for residual or recurrent disease after nonsurgical local and pelvic treatments.

Procedure	Appropriateness Category	Relative Radiation Level
C-11 choline PET/CT skull base to mid-thigh	Usually Appropriate	⚙⚙⚙
MRI pelvis without and with IV contrast	Usually Appropriate	0
F-18 fluciclovine PET/CT skull base to mid-thigh	Usually Appropriate	⚙⚙⚙⚙
MRI-targeted biopsy prostate	Usually Appropriate	0
TRUS guided biopsy prostate	Usually Appropriate	0
CT abdomen and pelvis with IV contrast	May Be Appropriate	⚙⚙⚙⚙
MRI abdomen and pelvis without and with IV contrast	May Be Appropriate (Disagreement)	0
Tc-99m bone scan whole body	May Be Appropriate (Disagreement)	⚙⚙⚙

(continued)

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