Brachytherapy for Patients With Prostate Cancer: American Society of Clinical Oncology/Cancer Care Ontario Joint Guideline Update

Introduction

- The goal of this update is to provide oncologists, other health care practitioners, patients, and caregivers with recommendations regarding the use of brachytherapy for patients with prostate cancer that includes the most recent evidence.

- Prostate cancer is the most commonly diagnosed cancer in men.

- For this reason, there is great interest in finding optimum treatment strategies to reduce the burden of disease in this patient population.

- The scope of this guideline covers brachytherapy boost and monotherapy.

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ASCO Guideline Update Methodology

- For this update, the signal was the presentation of a randomized controlled trial (RCT) reported by Morris et al.[1,2]
- The full Update Committee was then convened to review the evidence.
- The Update Committee contributed to the development of the guideline, provided critical review, and finalized the guideline recommendations.
- All ASCO guidelines are reviewed and approved by the ASCO Clinical Practice Guidelines Committee (CPGC).

The full ASCO Guideline methodology supplement can be found at:

www.asco.org/brachytherapy-guideline

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Clinical Questions

1. In patients with prostate cancer, what is the efficacy of brachytherapy alone for clinical outcomes compared with external beam radiation therapy (EBRT) alone or radical prostatectomy (RP) alone?

2. In patients with prostate cancer, what is the efficacy of brachytherapy combined with EBRT for clinical outcomes compared with brachytherapy alone, EBRT alone, or RP alone?

3. Among the isotopes used for low–dose rate brachytherapy (eg, ^{125}I, ^{103}Pd, and ^{131}Cs), which isotope maximizes clinical outcomes when used in patients with newly diagnosed prostate cancer?

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Target Population and Audience

Target Population

Patients with newly diagnosed prostate cancer who require or choose active treatment and are not considering, or are not suitable for, active surveillance.

Target Audience

Radiation oncologists, urological surgeons, and other clinicians who provide care for patients defined by the target population.

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Summary of Recommendations

- For patients with low-risk prostate cancer who require or choose active treatment, LDR alone, EBRT alone, or RP should be offered to eligible patients

- For patients with intermediate-risk prostate cancer choosing EBRT with or without androgen-deprivation therapy (ADT), brachytherapy boost (LDR or high–dose rate [HDR]) should be offered to eligible patients. For low-intermediate risk prostate cancer (Gleason 7, prostate-specific antigen, 10 ng/mL or Gleason 6, prostate-specific antigen, 10 to 20 ng/mL) LDR brachytherapy alone may be offered as monotherapy. For patients with high-risk prostate cancer receiving EBRT and ADT, brachytherapy boost (LDR or HDR) should be offered to eligible patients.

- ^{125}I and ^{103}Pd are each reasonable isotope options for patients receiving LDR brachytherapy; no recommendation can be made for or against using ^{131}Cs or HDR monotherapy.

- Patients should be encouraged to participate in clinical trials to test novel or targeted approaches to this disease.

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Qualifying Statements

- Patients should be counseled about all their management options (surgery, EBRT, active surveillance, as applicable) in a balanced, objective manner, preferably from multiple disciplines.

- Recommendation for low-risk patients is unchanged from initial guideline, because no new randomized data informing this question have been presented or published since.

- Patients ineligible for brachytherapy may include: moderate to severe baseline urinary symptoms, large prostate volume, medically unfit, prior transurethral resection of the prostate, and contraindications to radiation treatment.

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Qualifying Statements

- ADT may be given in neoadjuvant, concurrent, and/or adjuvant settings at physician discretion. It is noted that neoadjuvant ADT may cytoreduce the prostate volume sufficiently to allow brachytherapy

- There may be increased genitourinary toxicity compared with EBRT alone.

- Brachytherapy should be performed at a center following strict quality-assurance standards.

- It cannot be determined whether there is an overall or cause-specific survival advantage for brachytherapy compared with EBRT alone, because none of the trials were designed or powered to detect a meaningful difference in survival outcomes.

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Cost Considerations

- ASCO recognizes that there is often a wide array of choices for treating many cancer types, with often a wide disparity in cost to patients and payers.

- Further work is needed to articulate cost, cost-effectiveness, and cost-utility differences between the various prostate cancer treatment approaches.

Limitations of the Research

- There are also insufficient data for comment on a meaningful difference in overall survival, because all trials were powered for PFS only.

- The guideline panel will re-evaluate the recommendations as new data emerge, especially from the ASCENDE-RT and Radiation Therapy Oncology Group 0232 trials.

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Additional Resources

More information, including a Data Supplement, a Methodology Supplement, slide sets, and clinical tools and resources, is available at

www.asco.org/brachytherapy-guideline

Patient information is available at www.cancer.net

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References

1. Morris WJ, Tyldesley S, Pai HH, et al: ASCENDE-RT*: A multicenter, randomized trial of dose-escalated external beamradiation therapy (EBRTB) versus low-dose-rate brachytherapy (LDR-B) for men with unfavorable-risk localized prostate cancer. J Clin Oncol 33, 2015 (suppl 7; abstr 3)

2. Morris WJ, Tyldesley S, Rodda S, et al: *ASCENDE-RT: An analysis of survival endpoints for a randomized trial comparing a low dose-rate brachytherapy boost to a dose-escalated external beam boost for high- and intermediate-risk prostate cancer. Int J Radiat Oncol Biol Phys (in press)

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