Biochemical outcome after radical prostatectomy, external beam radiation therapy, or interstitial radiation therapy for clinically localized prostate cancer.


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Abstract

CONTEXT: Interstitial radiation (implant) therapy is used to treat clinically localized adenocarcinoma of the prostate, but how it compares with other treatments is not known.

OBJECTIVE: To estimate control of prostate-specific antigen (PSA) after radical prostatectomy (RP), external beam radiation (RT), or implant with or without neoadjuvant androgen deprivation therapy in patients with clinically localized prostate cancer.

DESIGN: Retrospective cohort study of outcome data compared using Cox regression multivariable analyses.

SETTING AND PATIENTS: A total of 1872 men treated between January 1989 and October 1997 with an RP (n = 888) or implant with or without neoadjuvant androgen deprivation therapy (n = 218) at the Hospital of the University of Pennsylvania, Philadelphia, or RT (n = 766) at the Joint Center for Radiation Therapy, Boston, Mass, were enrolled.

MAIN OUTCOME MEASURE: Actuarial freedom from PSA failure (defined as PSA outcome).

RESULTS: The relative risk (RR) of PSA failure in low-risk patients (stage T1c, T2a and PSA level < or =10 ng/mL and Gleason score < or =6) treated using RT, implant plus androgen deprivation therapy, or implant therapy was 1.1 (95% confidence interval [CI], 0.5-2.7), 0.5 (95% CI, 0.1-1.9), and 1.1 (95% CI, 0.3-3.6), respectively, compared with those patients treated with RP. The RRs of PSA failure in the intermediate-risk patients (stage T2b or Gleason score of 7 or PSA level >10 and < or =20 ng/mL) and high-risk patients (stage T2c or PSA level >20 ng/mL or Gleason score > or =8) treated with implant compared with RP were 3.1 (95% CI, 1.5-6.1) and 3.0 (95% CI, 1.8-5.0), respectively. The addition of androgen deprivation to implant therapy did not improve PSA outcome in high-risk patients but resulted in a PSA outcome that was not statistically different compared with the results obtained using RP or RT in intermediate-risk patients. These results were unchanged when patients were stratified using the traditional rankings of biopsy Gleason scores of 2 through 4 vs 5 through 6 vs 7 vs 8 through 10.

CONCLUSIONS: Low-risk patients had estimates of 5-year PSA outcome after treatment with RP, RT, or implant with or without neoadjuvant androgen deprivation that were not statistically different, whereas intermediate- and high-risk patients treated with RP or RT did better than those treated by implant. Prospective randomized trials are needed to verify these findings.

Comment in

Comparing treatments for localized prostate cancer--persisting uncertainty. [JAMA. 1998]

Prostatectomy, external beam radiation therapy, or brachytherapy for localized prostate cancer. [JAMA. ....]
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