Stage T1-2 prostate cancer with pretreatment prostate-specific antigen level < or = 10 ng/ml: radiation therapy or surgery?

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Abstract

PURPOSE: To detect differences in biochemical failure rates by treatment modality (radiation therapy or radical prostatectomy) in patients with early-stage prostate cancer presenting with pretreatment prostate-specific antigen (PSA) levels < or = 10.0 ng/ml.

METHODS AND MATERIALS: A total of 1467 consecutive patients with prostate carcinoma were treated with either radiotherapy (RT) or radical prostatectomy (RP) between January 1987 and June 1996. Patients with the following were excluded from the present study: initial PSA (iPSA) level > 10 ng/ml (n = 444), clinical Stage T3 disease (n = 73), adjuvant or neoadjuvant treatment (n = 173), no available iPSA level (n = 31), no available biopsy Gleason score (GS) (n = 33), incomplete pathologic information (n = 16), and no available follow-up PSA levels (n = 90). The analysis was performed on 607 cases: 354 treated with RP and 253 with RT (median dose 68.4 Gy). The outcome of interest was biochemical relapse-free survival (bRFS), with biochemical relapse being defined as either a detectable PSA level after RP or elevation in PSA levels of > or = 1.0 ng/ml above the nadir after RT. Proportional hazards were used to analyze the effect of treatment modality and confounding variables (i.e., age, stage, biopsy GS, iPSA levels) on treatment outcome.

RESULTS: Seventy-nine percent of patients (n = 478) had clinical Stage T1 or T2A disease at presentation (RP vs. RT: 84% vs. 71%, p < 0.001). Twenty-one percent of patients (n = 127) had iPSA levels < or = 4 ng/ml (RP vs. RT: 24% vs. 17%, p = 0.027). Seventy-six percent of patients (n = 460) had biopsy GS < or = 6 (RP vs. RT: 79% vs. 71%, p = 0.014). The median follow-up time was 24 months (range 3-110). For the 607 patients, the 5-year bRFS rate was 76%. The 5-year RFS rates for RP versus RT were 76% versus 75%, respectively (p = 0.09). After adjustment for all confounding variables, iPSA levels (p < 0.001) and biopsy GS (p = 0.001) were the only independent predictors of relapse, whereas age, clinical stage, and treatment modality were not (p = 0.20; p = 0.09; and p = 0.10, respectively).

CONCLUSION: In patients with clinical Stage T1-2 prostate cancer and pretreatment PSA < or = 10 ng/ml, there is no difference in biochemical failure rates between those treated with radiation and those treated with surgery.