Survival among men with clinically localized prostate cancer treated with radical prostatectomy or radiation therapy in the prostate specific antigen era.


Abstract

PURPOSE: Radical prostatectomy, external beam radiotherapy and brachytherapy are accepted treatments for localized prostate cancer. However, it is unknown if survival differences exist among treatments. We analyzed the survival of patients treated with these modalities according to contemporary standards.

MATERIALS AND METHODS: A total of 10,429 consecutive patients with localized prostate cancer treated with radical prostatectomy (6,485), external beam radiotherapy (2,264) or brachytherapy (1,680) were identified. Multivariable regression analyses were used to model the disease (biopsy grade, clinical stage, prostate specific antigen) and patient specific (age, ethnicity, comorbidity) parameters for overall survival and prostate cancer specific mortality. Propensity score analysis was used to adjust for differences in observed background characteristics.

RESULTS: The adjusted 10-year overall survival after radical prostatectomy, external beam radiotherapy and brachytherapy was 88.9%, 82.6% and 81.7%, respectively. Adjusted 10-year prostate cancer specific mortality was 1.8%, 2.9% and 2.3%, respectively. Using propensity score analysis, external beam radiotherapy was associated with decreased overall survival (HR 1.6, 95% CI 1.4-1.9, p<0.001) and increased prostate cancer specific mortality (HR 1.5, 95% CI 1.0-2.3, p=0.041) compared to radical prostatectomy. Brachytherapy was associated with decreased overall survival (HR 1.7, 95% CI 1.4-2.1, p<0.001) but not prostate cancer specific mortality (HR 1.3, 95% CI 0.7-2.4, p=0.5) compared to radical prostatectomy.

CONCLUSIONS: After adjusting for major confounders, radical prostatectomy was associated with a small but statistically significant improvement in overall and cancer specific survival. These survival differences may arise from an imbalance of confounders, differences in treatment related mortality and/or improved cancer control when radical prostatectomy is performed as initial therapy.

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