**Abstract**

**OBJECTIVES:** To compare long-term outcomes of men with adverse pathologic features after adjuvant radiation therapy (ART) versus salvage radiation therapy (SRT) after radical prostatectomy at our institution.

**METHODS:** Patients treated with postprostatectomy radiation therapy with pT3 tumors, or pT2 with positive surgical margins, were identified. Cumulative freedom from biochemical failure (FFBF), freedom from metastatic failure (FFMF), and overall survival rates were estimated utilizing the Kaplan-Meier method. Multivariate analyses were performed to determine independent prognostic factors correlated with study endpoints. Propensity score analyses were performed to adjust for confounding because of nonrandom treatment allocation.

**RESULTS:** A total of 186 patients with adverse pathologic features treated with ART or SRT were identified. The median follow-up time after radical prostatectomy was 103 and 88 months after completion of radiation therapy. The Kaplan-Meier estimates for 10-year FFBF was 73% and 41% after ART and SRT, respectively (log-rank, P=0.0001). Ten-year FFMF was higher for patients who received ART versus SRT (98.6% vs. 80.9%, P=0.0028). On multivariate analyses there was no significant difference with respect to treatment group in terms of FFBF, FFMF, and overall survival after adjusting for propensity score.

**CONCLUSIONS:** Although unadjusted analyses showed improved FFBF with ART, the propensity score-adjusted analyses demonstrated that long-term outcomes of patients treated with ART and SRT do not differ significantly. These results, with decreased effect size of ART after adjusting for propensity score, demonstrate the potential impact of confounding on observational research.

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