Long-term results of adjuvant versus early salvage postprostatectomy radiation: A large single-institutional experience.

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Abstract

PURPOSE: The purpose of this study was to evaluate freedom from biochemical failure (FFBF), freedom from androgen deprivation therapy (FFADT), freedom from distant metastases (FFDM), and overall survival (OS) after adjuvant radiation therapy (ART) versus early salvage radiation therapy (ESRT) in men with prostate cancer and adverse pathologic features (pT3 and/or positive surgical margins).

METHODS AND MATERIALS: Of 718 patients consecutively treated with postoperative radiation therapy (RT) for prostate cancer between 1992 and 2013, we retrospectively identified 171 men receiving ART and 230 receiving ESRT (RT delivered at a prostate-specific antigen level ≤0.5 ng/mL) who had adverse pathologic features. Postirradiation FFBF (BF was defined as prostate-specific antigen level rise to ≥0.2 ng/mL), FFADT, FFDM, and OS were compared using Kaplan-Meier and Cox regression methods. Propensity score (PS)-matching was performed to estimate treatment effects while accounting for covariates predicting treatment allocation.

RESULTS: Median follow-up was 7.4 and 8.0 years for patients treated with ART and ESRT, respectively. Ten-year FFBF (69% vs 56%, P = .003) and 10-year FFADT (88% vs 81%, P = .046) rates were higher after ART; however, FFDM and OS did not significantly differ. After PS-matching, ART was associated with improved FFBF (P < .0001), FFADT (P = .0001), and FFDM (P = .02). Findings were confirmed in multivariable analyses in unmatched and PS-matched cohorts. Sensitivity analyses showed that FFBF benefit associated with ART lost statistical significance only after 38% of ART patients were assumed to have been cured by surgery and excluded from the model. This corresponds to the upper bound of patients with adverse pathologic features who did not recur after observation in prior randomized trials.

CONCLUSIONS: Postoperative RT confers excellent long-term cancer control. These results suggest ART may be associated with improved FFBF, FFADT, and FFDM, but comparable OS. Given the retrospective study design, these findings should be interpreted with caution. Optimal timing of postoperative RT further awaits results of ongoing trials.

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