

Abstract

BACKGROUND: Salvage radiotherapy (SRT) has been successfully used for recurrent prostate cancer after radical prostatectomy; however, the optimal timing of SRT remains controversial. Our objective was to identify the risk factors for disease progression after SRT, with a focus on the pre-SRT prostate-specific antigen (PSA) levels in the modern era of PSA testing.

PATIENTS AND METHODS: We performed a retrospective review of 551 consecutive patients who had undergone postradical prostatectomy SRT for recurrent prostate cancer from 2000 to 2013. The exclusion criteria were hormonal therapy before or concurrent with SRT, adjuvant RT, distant metastases, and missing data. Disease progression was defined as a repeat PSA level of ≥ 0.2 ng/mL greater than the post-SRT nadir, a continued increase in the PSA level despite SRT, initiation of systemic therapy, local recurrence, nodal failure, and/or distant metastases. Univariate and multivariable Cox regression analysis were performed to identify the predictors of disease progression. Secondarily, PSA kinetics were evaluated in the model and compared using the Akaike information criterion.

RESULTS: Of the 551 patients, 307 underwent SRT, of whom 134 experienced subsequent disease progression. The median interval to recurrence was 6.03 years (95% confidence interval, 3.74-8.36 years). On multivariable analysis, Gleason score, T stage, positive surgical margins, and pre-SRT PSA level were associated with progression; PSA kinetics did not independently predict for progression. When the pre-SRT PSA level was stratified (≤ 0.30, 0.31-0.50, 0.51-1.00, and > 1 ng/mL), incremental elevations were associated with an increased risk of disease progression.

CONCLUSION: Multiple factors predict for progression after SRT. These risk factors could help identify those who would derive the greatest benefit from additional systemic treatment. The findings of the present study also support initiation of early SRT, irrespective of the PSA kinetics.

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Risk Factors for Disease Progression After Postprostatectomy Salvage...

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