The Interval to Biochemical Failure Is Prognostic for Metastasis, Prostate Cancer-Specific Mortality, and Overall Mortality After Salvage Radiation Therapy for Prostate Cancer.


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Abstract

PURPOSE: To investigate the utility of the interval to biochemical failure (IBF) after salvage radiation therapy (SRT) after radical prostatectomy (RP) for prostate cancer as a surrogate endpoint for distant metastasis (DM), prostate cancer-specific mortality (PCSM), and overall mortality (OM).

METHODS AND MATERIALS: A retrospective analysis of 575 patients treated with SRT after RP from a single institution. Of those, 250 patients experienced biochemical failure (BF), with the IBF defined as the time from commencement of SRT to BF. The IBF was evaluated by Kaplan-Meier and Cox proportional hazards models for its association with DM, PCSM, and OM.

RESULTS: The median follow-up time was 85 (interquartile range [IQR] 49.8-121.1) months, with a median IBF of 16.8 (IQR, 8.5-37.1) months. With a cutoff time of 18 months, as previously used, 129 (52%) of patients had IBF ≤18 months. There were no differences among any clinical or pathologic features between those with IBF ≤ and those with IBF >18 months. On log-rank analysis, IBF ≤18 months was prognostic for increased DM (P<.0001, HR 4.9, 95% CI 3.2-7.4), PCSM (P<.0001, HR 4.1, 95% CI 2.4-7.1), and OM (P<.0001, HR 2.7, 95% CI 1.7-4.1). Cox proportional hazards models with adjustment for other clinical variables demonstrated that IBF was independently prognostic for DM (P<.001, HR 4.9), PCSM (P<.0001, HR 4.0), and OM (P<.0001, HR 2.7). IBF showed minimal change in performance regardless of androgen deprivation therapy (ADT) use.

CONCLUSION: After SRT, a short IBF can be used for early identification of patients who are most likely to experience progression to DM, PCSM, and OM. IBF ≤18 months may be useful in clinical practice or as an endpoint for clinical trials.

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