Assessment of clinical and pathologic characteristics predisposing to disease recurrence following radical prostatectomy in men with pathologically organ-confined prostate cancer.


Abstract

OBJECTIVE: To identify risk factors for biochemical failure after radical prostatectomy (RP) in men with pathologically organ-confined (OC) prostate cancer (PCa).

METHODS: Clinical and pathological characteristics of 331 consecutive men with pT2N0 PCa treated solely with RP were used in Cox proportional hazard models to identify independent predictors of prostate specific antigen (PSA) failure (PSA > or = 0.1 ng/ml). All pathologic specimens were step sectioned at 3 mm.

RESULTS: Twelve patients (3.6%) failed at a median follow-up of 26 months (range 0.2-99.6 months) and 120 men remained at risk 3 years after RP. In univariate Cox models PSA (P < 0.001), percentage of high-grade cancer (P < 0.001) total and high-grade cancer volume (P = 0.001 and P < 0.0001, respectively) and RP Gleason sum (P = 0.003) represented significant predictors of PSA failure. Clinical stage (P = 0.4), surgical margin status (P = 0.3), age (P = 0.2), and pathologic evidence of unilateral versus bilateral PCa (P = 0.6) failed to reveal significance. In receiver operator curve (ROC) analyses, high-grade cancer volume achieved highest outcome predictive accuracy (area under the curve (AUC 0.93)), which was not exceeded by Cox regression-based nomogram combining serum PSA, RP Gleason sum, margin status and pathologic evidence of unilateral versus bilateral PCa (AUC 0.91). Predictive accuracy of this multivariate nomogram was not enhanced by adding total cancer volume (AUC 0.93), high-grade cancer volume (AUC 0.90), or percentage of high-grade cancer (AUC 0.90).

CONCLUSIONS: In pT2N0 PCa high-grade cancer volume appears to represent the most important pathologic factor for prediction of outcome following RP. However, similar predictive accuracy may be achieved by combining routinely available tumor characteristics.

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