Purpose: Algorithms have been developed to predict time to biochemical failure (BF) following radical prostatectomy (RP) for patients with clinically localized prostate cancer. The purpose of this study was to validate an algorithm based on prostatectomy findings and to evaluate whether the preoperative serum prostate specific antigen (PSA) enhances the predictive ability of the algorithm.

Materials and Methods: Between 1988 and 2002, 2417 patients underwent RP for clinically localized prostate cancer at one of 2 large university hospitals. Patients were retrospectively stratified into 4 risk groups based upon prostatectomy grade, stage, and margin status, and were then dichotomized by the preoperative PSA level (cut point 10 ng/mL). Cox regression multivariable analyses were performed to evaluate the ability of the risk group and preoperative PSA level to predict time to BF (PSA more than 0.2 ng/mL) following RP.

Results: The preoperative PSA level (P < 0.0001) and risk group (P < 0.0001) were significant predictors of time to BF following RP. Estimates of the BF rates 7 years following RP were 13%, 30%, 51%, and 72% for groups 1-4, respectively (pairwise P values <or=0.0002). Further stratification within each risk group using the preoperative PSA level with a cut point at 10 ng/mL revealed BF rates of 8% versus 35%, 25% versus 54%, 31% versus 73%, and 63% versus 86% for risk groups 1-4, respectively (all P values <0.0001).

Conclusions: An algorithm to predict BF based on prostatectomy findings has been validated, and the addition of the preoperative PSA level improved its ability to identify high risk patients who may benefit from entry into adjuvant treatment trials.

PMID: 16144663 [PubMed - indexed for MEDLINE]

MeSH Terms, Substances

LinkOut - more resources