A multivariate analysis of clinical and pathological factors that predict for prostate specific antigen failure after radical prostatectomy for prostate cancer.


Abstract

A Cox regression multivariate analysis was done to determine the clinical and pathological indicators that predict for prostate specific antigen (PSA) failure in 347 patients who underwent radical prostatectomy for clinically localized prostate cancer between 1989 and 1993. In the patient subgroups (PSA less than 20 ng./ml. and biopsy Gleason sum 5 to 7 or PSA more than 10 to 20 ng./ml. and biopsy Gleason sum 2 to 4) not classifiable into those at high and low risk for postoperative PSA failure using PSA and biopsy Gleason sum, the status of the seminal vesicles and prostatic capsule on endo-rectal coil magnetic resonance imaging (MRI) allowed for this categorization. Specifically, 2-year actuarial PSA failure rates were 84% versus 23% in patients with and without seminal vesicle invasion, respectively, on MRI (p < 0.0001) and 58% versus 21% in those with and without extracapsular extension, respectively (p = 0.0001). In patients with extracapsular extension but without pathological involvement of the seminal vesicle(s) or poorly differentiated tumors (pathological Gleason sum 8 to 10), the 2-year actuarial PSA failure rates were 50% (margin positive), 28% (margin negative with established extracapsular disease) and 9% (margin negative with focal microscopic extracapsular disease). Therefore, endo-rectal coil MRI showing seminal vesicle invasion or extracapsular extension when the PSA level is less than 20 ng./ml. and the biopsy Gleason sum is 5 to 7 or the PSA level is more than 10 but less than 20 ng./ml. and the biopsy Gleason sum is 2 to 4 predicted for PSA failure. In patients with extracapsular extension who had pathological Gleason sum less than 8 disease with uninvolved seminal vesicles, the margin status and extent of extracapsular disease predicted for PSA failure.

Comment in

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