Percent of prostate needle biopsy cores with cancer is significant independent predictor of prostate specific antigen recurrence following radical prostatectomy: results from SEARCH database.


Abstract

PURPOSE: Recent studies have suggested that the percent of positive cores in the prostate needle biopsy is a significant predictor of outcome among men undergoing radical prostatectomy or radiation therapy for prostate cancer. We evaluate whether either percent of cores with cancer or percent of cores positive from the most and least involved side of the prostate needle biopsy was associated with a worse outcome among men treated with radical prostatectomy.

MATERIALS AND METHODS: A retrospective survey of 1,094 patients from the SEARCH Database treated with radical prostatectomy at 4 different equal access medical centers in California between 1988 and 2002 was undertaken. We used multivariate analysis to examine whether total percent of prostate needle biopsy cores with cancer, percent of cores positive from each side of the prostate and other clinical variables were significant predictors of adverse pathology and time to prostate specific antigen (PSA) recurrence following radical prostatectomy.

RESULTS: On multivariate analysis serum PSA and percent of positive cores were significant predictors of positive surgical margins, nonorgan confined disease and seminal vesicle invasion. Percent of positive cores (p <0.001), serum PSA (p = 0.008) and biopsy Gleason score (p = 0.014) were significant independent predictors of time to biochemical recurrence. On a separate multivariate analysis that included the variables of total percent of positive cores, percent of positive cores from the most involved side of the biopsy, percent of positive cores from the least involved side of the biopsy and whether the biopsy was positive unilaterally or bilaterally, only the percent of positive cores from the most involved side of the biopsy was a significant independent predictor of PSA failure following radical prostatectomy. Percent of positive cores was used to separate patients into a low risk (less than 34%), intermediate risk (34% to 50%) and high risk (greater than 50%) groups, which provided significant preoperative risk stratification for PSA recurrence following radical prostatectomy (p <0.001). Percent of positive cores cut points were able to further risk stratify men who were at low (p = 0.001) or intermediate (p = 0.036) but not high (p = 0.674) risk for biochemical failure based on serum PSA and biopsy Gleason score.

CONCLUSIONS: Percent of positive cores in the prostate needle biopsy was a significant predictor of adverse pathology and biochemical failure following radical prostatectomy, and the cut points of less than 34%, 34% to 50% and greater than 50% can be used to risk stratify patients preoperatively. The finding that percent of positive cores from the most involved side of the biopsy was a stronger predictor of PSA failure than the total percent of cores involved suggests that multiple positive biopsies from a single side might be a better predictor of a larger total cancer volume and thus correlate with clinical outcome.