The impact of discordance between biopsy and pathological Gleason scores on survival after radical prostatectomy.

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Abstract

PURPOSE: Although discordance in the Gleason score between biopsy and radical prostatectomy specimens has been well recognized, the prognostic importance of this discrepancy has not been definitively established. We investigated the association of Gleason score discordance with postoperative systemic progression and death from prostate cancer.

MATERIALS AND METHODS: We evaluated the records of 8,054 consecutive patients who underwent radical prostatectomy between 1987 and 2003. Gleason score at biopsy and prostatectomy was categorized as 6 or less, 3 + 4, 4 + 3 and 8 to 10. Cox proportional hazard regression models were used to analyze the impact of biopsy Gleason score on postoperative survival in patients in each pathological Gleason score stratum.

RESULTS: Discordance in Gleason score was associated with adverse pathological features, including advanced tumor stage, lymph node metastasis and positive surgical margins (each p <0.001). On multivariate analysis increasing biopsy Gleason score was significantly associated with systemic progression in patients with pathological 3 + 4 and 8 to 10 cancer (HR 1.44, 95% CI 1.17-1.76, p <0.001 and HR 1.24, 95% CI 1.03-1.48, p = 0.023, respectively). It was also an independent predictor of death from prostate cancer in patients with pathological Gleason 3 + 4 tumors (HR 1.62, 95% CI 1.23-2.15, p <0.001). However, adding biopsy Gleason score to our institutional Gleason score, prostate specific antigen, and seminal vesicle and margin status scoring algorithm minimally increased the concordance statistic for the association of that algorithm with cancer specific mortality from 0.827 to 0.842.

CONCLUSIONS: Biopsy Gleason score predicts systemic progression and cancer death in patients with pathological Gleason 3 + 4 tumors. Nevertheless, adding biopsy Gleason score to Gleason score, prostate specific antigen, and seminal vesicle and margin status did little to increase the predictive value of the model, which emphasizes the relative importance of pathological criteria for risk stratification.

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