Extreme Gleason Upgrading From Biopsy to Radical Prostatectomy: A Population-Based Analysis.

Winters BR, Wright JL, Holt SK, Lin DW, Ellis WJ, Dalkin BL, Schade G.

Abstract

OBJECTIVES: To examine the risk factors associated with the odds of extreme Gleason upgrading at RP (defined as a Gleason prognostic group score increase of ≥ 2), we utilized a large, population-based cancer registry.

MATERIALS AND METHODS: The Surveillance, Epidemiologic, and End Results (SEER) database was queried (2010-2011) for all patients diagnosed with Gleason 3+3 or 3+4 on prostate needle biopsy (PNB). Available clinicopathologic factors and the odds of upgrading and extreme upgrading at RP were evaluated using multivariate logistic regression.

RESULTS: A total of 12,459 patients were identified with median age of 61 (IQR 56-65) years and diagnostic PSA 5.5 ng/mL (IQR 4.3-7.5). Upgrading was observed in 34% of men, including 44% of 7,402 patients with Gleason 3+3 and 19% of 5,057 patients with Gleason 3+4 disease. Age, clinical stage, diagnostic PSA, and %PNB cores positive were independently associated with odds of any upgrading at RP. In baseline 3+3 disease, extreme upgrading was observed in 6% with increasing age, diagnostic PSA, and >50% core positivity associated with increased odds. In baseline 3+4 disease, extreme upgrading was observed in 4% with diagnostic PSA and palpable disease remaining predictive. Positive surgical margins were significantly higher in patients with extreme upgrading at RP (p<0.001).

CONCLUSIONS: Gleason upgrading at RP is common in this large population-based cohort, including extreme upgrading in a clinically significant portion. Identifying men at greatest risk of extreme upgrading could improve patient counseling and surgical planning.

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