Outcomes of Gleason score 3 + 4 = 7 prostate cancer with minimal amounts (<6%) vs ≥6% of Gleason pattern 4 tissue in needle biopsy specimens.

Kır G, Seneldir H, Gumus E.

Abstract

OBJECTIVE: The International Society of Urological Pathology Gleason grading system was modified in 2005. Since the modified system was introduced, many cancers that previously would have been categorized as Gleason score (GS) 6 are now categorized as GS 7 based on biopsy specimens that only contain minimal amounts (<6%) of Gleason pattern (GP) 4 tissue. However, the clinical significance of observing <6% of GP 4 tissue in biopsies of GS 7 prostate cancer has not been studied.

MATERIAL AND METHODS: This study was based on needle biopsy specimens that were categorized as GS 6 or GS 7 and were obtained from patients who underwent radical prostatectomy (RP) with available follow-up data. We assessed the quantity of GP 4 tissue in biopsy specimens of GS 7 prostate cancer. Further, we evaluated the correlation between the quantity of GP 4 tissue and disease progression after RP.

RESULTS: GP 4 comprising 26-49% of the specimen, GS 4+3 and percentage of total core tissue scored as positive were significant and independent predictors of prostate-specific antigen (PSA) failure after RP, as assessed using a multivariate Cox regression model that included the quantity of GP 4 in the prostate biopsy specimen, preoperative PSA, perineural invasion, clinical stage, number of positive cores, and percentage of core tissue scored as positive. Cases with GS 3+3 and cases in which the observed GP 4 area was <6% did not differ significantly in terms of biochemical PSA recurrence (BPR) status. In contrast, cases with 6-25% GP 4 tissue, 26-49% GP 4 tissue, and GS 4+3 showed more frequent BPR than cases with GS 3+3.

CONCLUSIONS: Our data suggest that the quantity of GP 4 tissue in GS 7 cancer has clinical significance. However, there is a need for larger studies of the clinical significance of biopsy specimens that include <6% GP 4 tissue. We should reconsider whether the amount of GP 4 should be included in standard pathology reports.

Copyright © 2015 Elsevier Inc. All rights reserved.

KEYWORDS: Biopsy; Gleason pattern 4; Modified Gleason grading; Prostate cancer; Radical prostatectomy

PMID: 26750655 [PubMed - in process]