Not all Gleason pattern 4 prostate cancers are created equal: A study of latent prostatic carcinomas in a cystoprostatectomy and autopsy series.

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Abstract

BACKGROUND: The Gleason grading system represents the cornerstone of the management of prostate cancer. Gleason grade 4 (G4) is a heterogeneous set of architectural patterns, each of which may reflect a distinct prognostic value.

METHODS: We determined the prevalence of the various G4 architectural patterns and intraductal carcinoma (IDC) in latent prostate cancer in contemporary Russian (n = 220) and Japanese (n = 100) autopsy prostates and in cystoprostatectomy (CP) specimens (n = 248) collected in Italy. We studied the association of each G4 pattern with extraprostatic extension (EPE) and tumor volume to gain insight into their natural history. Presence of IDC and nine architectural features of Gleason grade 4 and 5 cancer were recorded.

RESULTS: The prevalence of Gleason score ≥7 PC was higher in the autopsy series (11%) compared to the CP series (6.5%, P = 0.04). The prevalence of IDC and carcinoma with a cribriform architecture was 2.2% and 3.4% in the autopsy series and 0.8% and 3.6% in the cystoprostatectomy series, respectively. In multivariable analysis, cribriform architecture was significantly associated with increased tumor volume (P < 0.001) and EPE (OR:11.48, 95%CI:2.30-57.16, P = 0.003). IDC was also significantly associated with EPE (OR:10.08, 95%CI:1.58-64.28, P = 0.014). Small fused glands had a strong negative association with EPE in the autopsy series (OR:0.06, 95%CI:0.01-0.58, P = 0.015).

DISCUSSION: Our study revealed that in latent prostate cancer both cribriform architecture and IDC are uniquely associated with poor pathological outcome features. In contrast, Gleason score 7 (3+4) cancers with small-fused gland pattern might possibly include some prostate cancers with a more indolent biology. Prostate © 2015 Wiley Periodicals, Inc.

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KEYWORDS: Gleason grading; cribriform architecture; intraductal carcinoma; latent cancer; prostate

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