From Gleason to International Society of Urological Pathology (ISUP) grading of prostate cancer.

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Abstract

Gleason grading of prostate cancer has gained worldwide acceptance since its introduction 50 years ago. This system has fulfilled the role of a powerful prognostic indicator for many years and this has influenced treatment. There have been numerous changes to the management and diagnosis of prostate cancer since 1966, including prostate-specific antigen screening, resulting in the early detection of prostate cancer. This has resulted in the evolution of Gleason grading with the informal adoption of a number of alterations. Significant changes to Gleason grading were made in 2005 through a consensus conference convened by the International Society of Urological Pathology (ISUP). In more recent times, the necessity for further changes to prostate cancer grading has been apparent and a follow-up ISUP consensus conference was held in 2014. Changes resulting from this conference included the classifying of all cribriform cancer and glomeruloid patterns as Gleason grade 4, the grading of mucinous adenocarcinoma based on underlying architecture rather than uniformly considering these tumors as pattern 4, and the introduction of a Gleason score (GS)-based 5 grade system, which incorporated the 2014 modifications to the Gleason grading system. Designated ISUP grade, this system consists of five grades: grade 1 (GS ≤3 + 3), grade 2 (GS 3 + 4), grade 3 (GS 4 + 3), grade 4 (GS 4 + 4, 3 + 5, 5 + 3) and grade 5 (GS 9-10). With further advances recently reported in the literature, it is apparent that amendments to the current system are likely to be necessary in the future.

KEYWORDS: Gleason; International Society of Urological Pathology; grade; prognosis; prostatic adenocarcinoma