Ann Surg Oncol (2021) 28:9188–9189
https://doi.org/10.1245/s10434-021-10335-0

Annals of
SURGICAL ONCOLOGY
OFFICIAL JOURNAL OF THE SOCIETY OF SURGICAL ONCOLOGY

ASO AUTHOR REFLECTIONS

ASO Author Reflections: Is There Any Difference Among Various Gleason Scores Classified as Grade Group 4 Prostate Cancer?

Keiichiro Mori, MD[1,2], Vidit Sharma, MD[3,4], Shin Egawa, MD[2], Derya Tilki, MD[5,6], Stephen A. Boorjian, MD[3], and Shahrokh F. Shariat, MD[1,7,8,9,10,11,12]

[1]Department of Urology, Medical University of Vienna, Vienna, Austria; [2]Department of Urology, The Jikei University School of Medicine, Tokyo, Japan; [3]Department of Urology, Mayo Clinic, Rochester, MN; [4]Department Of Urology, VA Health Services Research and Development Fellowship, University of California, Los Angeles, CA; [5]Martini-Klinik Prostate Cancer Center, University Hospital Hamburg-Eppendorf, Hamburg, Germany; [6]Department of Urology, University Hospital Hamburg-Eppendorf, Hamburg, Germany; [7]Institute for Urology and Reproductive Health, Sechenov University, Moscow, Russia; [8]Division of Urology, Department of Special Surgery, The University of Jordan, Amman, Jordan; [9]Department of Urology, Weill Cornell Medical College, New York, NY; [10]Department of Urology, University of Texas Southwestern, Dallas, TX; [11]Karl Landsteiner Institute of Urology and Andrology, Vienna, Austria; [12]Department of Urology, Second Faculty of Medicine, Charles University, Prague, Czech Republic

PAST

Currently, grade group (GG) 4 prostate cancer (PC) is equivalent to Gleason score (GS) 8 PC, which consists of GS 4+4, 3+5, and 5+3. Grade group 4 still is considered a homogeneous entity with regard to its associated prognosis and treatment. However, some reports have raised questions as to whether GS 8 or GG 4 is a heterogeneous entity in terms of prognosis, and hence whether there is merit in reclassifying GG 4 into separate GGs.[1] The authors have shown prognostic differences in patients who have PC in GG 4 treated with radical prostatectomy (RP) based on different Gleason scores for RP specimens, suggesting that considerable heterogeneity exists within GG 4 regarding oncologic and surgical pathologic outcomes.[2] However, discrepancy exists between the biopsy and RP GS, with the two specimens matching exactly in approximately 50% of cases.[3] Thus, it remains unclear whether our findings on RP specimens also hold true for biopsy specimens.

PRESENT

This study was conducted to investigate the prognostic differences between GS 3+5, GS 4+4, and GS 5+3 in biopsy specimens from patients with PC classified as GG 4 based on the association with oncologic and surgical pathologic outcomes.[4] In this multicenter retrospective study, 1791 patients (GS 3+5: 190; GS 4+4: 1557; and GS 5+3: 44) with biopsy GG 4 were included. During a median follow-up period of 75 months, 750 patients experienced biochemical recurrence (BCR), 146 died of any cause, and 57 died of PC. The results indicate that GS 5+3 was associated with significantly higher rates of GS upgrading in RP specimens than GS 3+5 or GS 4+4. In contrast, no association was found between GS and lymph node metastases, non-organ-confined disease, positive surgical margin, or extraprostatic extension disease. Moreover, GS was not associated with overall survival or cancer-specific survival, but was associated with BCR-free survival ($P = 0.03$).

FUTURE

In this study, the patients with biopsy GG 4 exhibited some limited but clinically significant heterogeneity. Indeed, significant differences were seen in association with GS upgrading, downgrading, and BCR. The absence of central reviews involving expert pathologists is

First Received: 4 June 2021
Accepted: 9 June 2021;
Published Online: 21 June 2021

S. F. Shariat, MD
e-mail: shahrokh.shariat@meduniwien.ac.at

a limitation of this study given that earlier studies lacking central reviews indeed were associated with high proportions of patients with GS 3+5 and GS 5+3 and that a high percentage of GS 3+5 and GS 5+3 has been re-categorized upon expert review.[5] Well-designed prospective studies with prolonged follow-up evaluation and central pathologic review are warranted to validate the differential prognostic and biologic impact of the different GS within GG 4 in the clinical setting.

FUNDING Open access funding provided by Medical University of Vienna.

DISCLOSURE There are no conflicts of interest.

REFERENCES

1. Mori K, Miura N, Comperat E, et al. A systematic review and meta-analysis of prognostic impact of different Gleason patterns in ISUP grade group 4. *Minerva Urol Nephrol.* 2021;73(1):42–49.
2. Mori K, Sharma V, Comperat EM, et al. Differential prognostic impact of different Gleason patterns in grade group 4 in radical prostatectomy specimens. *Eur J Surg Oncol.* 2021;47(5):1172–1178.
3. 3. Kvåle R, Møller B, Wahlqvist R, et al. Concordance between Gleason scores of needle biopsies and radical prostatectomy specimens: a population-based study. *BJU Int.* 2009;103:1647–54.
4. Mori K, Sharma V, Comperat EM, Sato S, Laukhtina E, Schuettfort VM, et al. Prognostic impact of different Gleason patterns on biopsy within grade group 4 prostate cancer. *Ann Surg Oncol.* 2021. https://doi.org/10.1245/s10434-021-10257-x.
5. 5. Kryvenko ON, Williamson SR, Schwartz LE, Epstein JI. Gleason score 5+3=8 (grade group 4) prostate cancer: a rare occurrence with contemporary grading. *Hum Pathol.* 2020;97:40–51.