Re: Giorgio Gandaglia, Guillaume Ploussard, Massimo Valerio et al. Prognostic Implications of Multiparametric Magnetic Resonance Imaging and Concomitant Systematic Biopsy in Predicting Biochemical Recurrence After Radical Prostatectomy in Prostate Cancer Patients Diagnosed with Magnetic Resonance Imaging–targeted Biopsy. Eur Urol Oncol 2020;7:739-747

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Abbreviations

BCR; biochemical recurrence

mpMRI; multiparametric magnetic resonance imaging

GGG; gleason grade group

It was a pleasure to read the recent article by Gandalgia and colleagues, in which they used a novel approach to study the use of both multiparametric magnetic resonance imaging (mpMRI) and systematic biopsy to predict the risk of biochemical recurrence (BCR) following radical prostatectomy [1]. mpMRI has become central to prostate cancer diagnosis and risk stratification, replacing prognostic tools based primarily on histopathological features. We commend the authors on their use of robust statistical methods in this study, and the efficacy of their developed predictive model that potentially has considerable clinical significance. This study also draws attention to the potential benefit of an accompanying systematic biopsy. We do, however, offer some comments on specific methodological choices which we feel would strengthen future work in this area.

Here, the authors defined clinically significant cancer as Gleason Grade Group (GGG) 2 and above. However, there is an increasing body of evidence suggesting that clinical significance cannot be ascertained based on Gleason grade alone [2,3]. Indeed, there is increasing need to consider the interplay between tumour volume and the percentage of Gleason 4 pattern. This is well illustrated by the findings of Frankcombe et al. [3] who demonstrated that two different volume groups (≤ 2mL and > 2mL) of intermediate risk disease had a similar risk of BCR when the percentage of Gleason 4 pattern was low, yet at higher percentages (≥ 30%), there was a statistically significant difference in the risk of BCR between the volume groups ($p < 0.001$). Therefore, when attributing clinical risk and MRI conspicuity to a given tumour, it seems pertinent to acknowledge tumour volume.

In this study, the authors reported a median of six cores taken for systematic biopsy, however, this sampling approach may be insufficient, especially in light of their finding that the presence of foci of GGG > 2 disease was an independent predictor of BCR. The use of either systematic 12-core or transperineal template mapping biopsy both have demonstrable utility in the identification and risk stratification of prostate cancer [4,5], and as such, it is likely that sampling a greater number of cores would have increased the likelihood of identifying foci of disease. Also, whilst the authors highlighted that a median of three experienced radiologists were involved in the interpretation of mpMRI scans and subsequent scoring, there was no mention of how inter-observer variation was accounted for, or duration of radiologist experience. As their developed predictive models factored mpMRI Prostate Imaging–Reporting and Data System (PI-RADS) scores > 3,

(erroneously written as 1-3 in Table 2), we believe that data on inter-observer variation would be useful to improve reproducibility and subsequent clinical applicability of this model.

Despite our suggestions on the methods used within this study, we believe that this project represents an important contribution to the literature, and is a promising starting point to further understanding regarding the prognostic capability of prostate mpMRI. Future studies in this field are greatly needed, with significant potential implications for the management of patients with prostate cancer.

References

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