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Reply by the Authors

Daniel T. Oberlin, M.D.,

University of Southern California Norris Comprehensive Cancer Center, Los Angeles, CA

William J. Catalona, M.D., and

Northwestern University Feinberg School of Medicine, Chicago, IL

Joshua J. Meeks, M.D., Ph.D.

Northwestern University Feinberg School of Medicine, Chicago, IL

TO THE EDITOR

We appreciate the authors' interest in our article and strongly agree that the increased utilization of multiparametric MRI (mpMRI) of the prostate has led to important clinical questions. Our study results are consistent with those of other large institutional outcomes, as well as trials such as PROFUS, which show the superiority in cancer detection of MR-targeted biopsies compared with standard transrectal ultrasound-guided biopsy.¹ In our study, the overall cancer detection rate was significantly higher in the MR-ultrasound (US) fusion biopsy cohort than in both cognitive and standard transrectal ultrasound-guided biopsy, yet there was no significant difference in detection of clinically significant prostate cancer between MR-US fusion biopsy and cognitive biopsy. It is important to recognize that our primary end point was the overall detection of cancer, and our study was likely underpowered to detect a difference in "clinically significant" cancer. Despite this, there was a strong trend toward improved detection of Gleason 7 and higher cancer in the fusion cohort: 29.6% (24 of 81) of MR-US fusion biopsies detected clinically significant cancer vs 16.5% (25 of 150) of biopsies with cognitive targeted biopsy (COG-TB) biopsies ($P = .07$).

The authors reference the PROFUS trial as potential evidence of the equivalence of MR-US fusion and COG-TB. We feel that although the design and execution of the trial was excellent, it too was likely underpowered to show a statistically significant difference in the detection of clinically significant cancers; yet the study still showed a trend toward increased detection of higher grade tumors and demonstrated that fusion biopsy provided better histologic information of visualized lesions.

Ultimately, we must continue to evaluate the best method of targeted biopsy and qualify the role of COG-TB in urologic practice. For those practitioners who have significant experience with prostate mpMRI and the ability to precisely and reliably correlate mpMRI lesions with real-time US images with reasonable fidelity, cognitive biopsy of the prostate is an option, and good results appear in the literature.^{2–4} Caution must be used, however, when encountering small, anterior, or otherwise challenging-to-target location, as these are more likely to be undersampled⁵ and may be difficult to target with cognition alone. Future studies are needed to determine if these difficult-to-target locations are undersampled without the aid of fusion technologies.

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