Editorials

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Data Grow in Support of Micro-Ultrasound for Prostate Cancer Diagnosis

Evidence supporting the use of micro-ultrasound for prostate cancer diagnosis continues to expand. In this retrospective study by Castilho Borges et al,[1] real-world data demonstrate a higher detection rate of clinically significant prostate cancer compared with MRI fusion biopsy. These findings build on results from the recently reported OPTIMUM randomized trial, which demonstrated noninferiority between MRI fusion–guided and micro-ultrasound–guided biopsy.[2]

While this study further strengthens support for micro-ultrasound, it raises at least 2 important questions. First, what explains the lower detection rate of clinically significant prostate cancer among men undergoing MRI fusion biopsy? In the OPTIMUM trial, detection rates were comparable between micro-ultrasound (47%) and MRI fusion (42.6%). By contrast, Castilho Borges et al reported a similar detection rate for micro-ultrasound (45%) but a lower rate for MRI fusion (34%). Selection bias and differences in biopsy approach likely contribute. In this study, patients were not randomized. Biopsy approach was influenced by patient preference, clinical characteristics, and physician judgment. Moreover, micro-ultrasound biopsies were performed transrectally, whereas MRI fusion biopsies were transperineal. Prior work suggests that biopsy approach can affect detection rates, especially for anterior and apical tumors.[3] These factors temper conclusions about the superiority of micro-ultrasound over MRI fusion.

Second, this study prompts reflection on the role of MRI in the context of micro-ultrasound.[4] All participants underwent MRI with at least 1 suspicious lesion, and clinicians were not blinded to MRI findings. Prior studies comparing MRI fusion with cognitive fusion biopsies show similar detection rates, suggesting that simply knowing MRI results can improve performance.[5] At the same time, in the OPTIMUM trial, patients who underwent micro-ultrasound biopsy without MRI achieved noninferior detection of clinically significant prostate cancer compared with those who had MRI. Whether micro-ultrasound can replace MRI in the prostate cancer diagnostic pathway remains uncertain.

As the authors note, important limitations remain, and additional research is needed to define how micro-ultrasound can best improve patient outcomes. Future work should evaluate the costs of implementing micro-ultrasound technology and training clinicians to proficiency, as well as its impact on biopsy rates and detection of indolent disease. Nonetheless, Castilho Borges et al contribute meaningfully to the growing evidence base supporting the use of micro-ultrasound in prostate cancer diagnosis.

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