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**Introduction & Objectives:** The low negative predictive value of conventional ultrasound leads to systematic biopsies, and a high rate of under-diagnosis. The new recommendations include the use of targeted biopsies based on multi-parametric MRI (MRI-MRI) that have advantages over routine biopsies alone. This study compares the added value in terms of the diagnostic potential of MRI-MRI with the use of a new 29MHz micro-ultrasound technique.

**Materials & Methods:** 51 patients with elevated PSA and/or abnormal digital rectal examination underwent prostate biopsy guided by the ExactVu micro-ultrasound system (Exact Imaging, Markham, Canada) and were included in our prospective database. MP-MRI was performed in 41 of these 51 patients showed targets for biopsies. Each case was analyzed to determine whether MP-MRI or micro-ultrasound specimens identified the highest Gleason (GG) group for the subject.

**Results:** In 27/51 (53%) subjects, biopsies identified prostate cancer. This cancer was clinically significant ( $GG \geq 2$ ) in 22/51 (43%) patients. The cancer was identified by both MRI and micro-ultrasound targets in 19/27 (70%) cancers and 16/22 (73%)  $GG \geq 2$  cancers. MRI detected 3/27 (11%) cancers ( $GG$  respectively 1, 1, 3) unidentified in micro-ultrasound. Micro-ultrasound alone detected 3/27 (11%) non-visualized cancers in MP-MRI, all clinically significant ( $GG$  2, 2, 4). Systematic biopsies alone identified the highest  $GG$  in 2/27 (7%) patients, although in these 2 cases, the MP-MRI and micro-ultrasound had identified a lower  $GG$  region. Among patients without MP-MRI, 2 had positive biopsies in the areas identified by micro-ultrasound.

**Conclusions:** In this study, imaged-based targeting of prostate biopsies provided important added value with high detection rates. These results do not allow us to affirm the superiority of one imaging modality over another. Micro-ultrasound would be an alternative to MRI for targeted prostate biopsies, especially in cases where MRI is complicated or contraindicated.