A Multi-Institutional Randomized Controlled Trial Comparing Novel First-Generation High-Resolution Micro-Ultrasound with Conventional Frequency Ultrasound for Transrectal Prostate Biopsy

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METHODS:

Clinically-significant prostate cancer (csPCa).

TRANSRECTAL MICRO-ULTRASOUND 29 MHZ

BACKGROUND:


RESULTS:

No effect seen in ITT analysis (34.6% vs. 36.6%), due to errors in sampling of apical horn using prototype transducer.

Significantly greater csPCa detection in per-protocol group (PP) with micro-US (43.7% vs. 36.6% conv-US, p=0.02) after PRI-MUS training. PRI-MUS training provided guidance on relevant imaging characteristics not previously seen with conventional ultrasound.

After PRI-MUS training, sensitivity improved to 63.4% from 24.7% for micro-US (p<0.01), at cost of lower specificity (63.2%).

CONCLUSIONS:

First-generation micro-US with PRI-MUS achieved greater sensitivity to detect significant prostate cancers than conventional TRUS.

Instruction on micro-US interpretation using PRI-MUS and proper systematic biopsy technique further improved cancer detection rates of clinically significant cancer with the same number of biopsy samples.

REFERENCES: