Magellan HEALTHCARE®

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Advanced Imaging Digest

Prostate risk identification

Prostate risk identification using micro-ultrasound (PRI-MUS™)

Micro-ultrasound is a relatively new imaging platform that uses high-resolution ultrasound at 29 MHz compared to 9-12 MHz for conventional urological ultrasound. The higher resolution provides superior imaging, improving lesion targeting for biopsies.

PRI-MUS is the grading system for assessing prostatic lesions and their likelihood of being malignant. Unlike multiparametric magnetic resonance imaging (mpMRI), micro-ultrasound is performed in real-time during in-office biopsy procedures. It is therefore expected to maintain the cost-effectiveness of conventional ultrasound. Micro-ultrasound provides a sensitivity similar to mpMRI for clinically significant prostate cancer and can visualize all significant mpMRI targets that conventional ultrasound cannot.

A recent study by Claros et al. reaffirmed the role of micro-ultrasound visualization and the PRI-MUS score as reliable in the detection of clinically significant prostate cancer when compared to robotic ultrasound MRI fusion biopsy, but larger prospective studies are needed. A recent presentation by Dr. Lughezzani at the American Urological Association 2020 meeting compared mpMRI to micro-ultrasound. Micro-ultrasound has greater sensitivity (95% vs. 89% for mpMRI) and negative predictive value (87% vs. 77% for mpMRI), but micro-ultrasound was less specific than mpMRI (21% and 23%, respectively). Both had similar positive predictive values (44% vs. 43% for mpMRI). The study also concluded that larger scale studies are needed to validate findings.

While this upcoming technology is a promising tool for detecting and targeting prostate cancer in active surveillance, larger multisite/multi-reader studies are needed. Currently, the American Urological Association guidelines do not support this modality. Magellan Healthcare will continue to monitor the literature as new studies are reported.

Magellan Healthcare clinical leaders continually review imaging trends and needs in light of current medical concerns, available literature, and society and Centers for Disease Control and Prevention recommendations and guidelines. This document is a summary of our latest findings. Please consult references for detailed information.

Quantib® Prostate

Quantib® Prostate recently received FDA clearance for artificial intelligence (AI) detection in prostate imaging. The release of Quantib's prostate solution follows the PROMIS and Precision trials which indicated the added value of incorporating MRI into the prostate cancer workflow. This is one of several such AI systems available and approved by the FDA. Quantib's prostate cancer software provides tools to improve diagnosis, including image-based calculation of prostate-specific antigen density that is incorporated into the final radiology report and a heat map that identifies suspicious areas to the radiologist. Quantib is currently used by only 10 facilities, and there are plans for later expansion.

Initial literature shows promising results for AI algorithms and programs, but additional studies are needed to evaluate the clinical benefits. Magellan will continue to monitor the literature as new studies are published.

About the authors

M. Atif Khalid, M.D., senior medical director, Magellan Healthcare

Dr. Khalid joined Magellan in 2014. As a board-certified diagnostic radiologist with a career spanning more than twenty years, he has a thorough understanding of the complexities of the U.S. healthcare system and current standards of care. In his current role, Dr. Khalid is involved in training new physicians, auditing, continuing education and policy development.

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Dr. Mazzie, a board-certified radiologist with over 19 years of experience, joined Magellan in 2014. He is a graduate of the New York Institute of Technology College of Osteopathic Medicine, where he is currently an associate professor of radiology.

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