Consensus Statements of Cohorts from Radiology & Urology

Standard Operating Procedure for Multiparametric Magnetic Resonance Imaging in the Diagnosis, Staging and Management of Prostate Cancer

American Urological Association (AUA)

A Collaborative Initiative by the American Urological Association and the Society of Abdominal Radiology Prostate Disease Focus Panel

Multiparametric MR Imaging (mpMRI) of the prostate has the potential to change the paradigms for prostate cancer diagnosis, staging, and therapy. Given the rapid adoption of prostate MRI in clinical practice, the AUA and other thought leaders have published a Standard Operating Procedure (SOP) for MRI for the prostate.

The SOP offers topics describing the clinical use of mpMRI for a number of patient conditions; including specifics of MRI scan parameters and techniques for best practices.

Recommendations are derived from collaborative messaging from the American Urological Association (AUA) and Society of Abdominal Radiology (SAR) prostate disease focus panel. Revised May 2019

https://www.auanet.org/guidelines/standard-operating-procedures-overview

Journal of American Medical Association JAMA

Closing the Loop on the Role of Multiparametric Magnetic Resonance Imaging–Targeted Prostate Biopsy

This article details commentary from urologists from Ohio State University’s experiences using multiparametric magnetic resonance imaging and targeted prostate biopsy.


https://jamanetwork.com/journals/jamasurgery/article-abstract/2735960

Comparison of Targeted vs Systematic Prostate Biopsy in Men who are Biopsy Naïve

The Prospective Assessment of Image Registration in the Diagnosis of Prostate Cancer (PAIREDCAP) Study

The study suggests that combining systematic sampling of the prostate along with the magnetic resonance imaging-visible targeted lesions resulted in considerable detection rate increases for clinically significant cancer over the use of either method expended alone.


https://jamanetwork.com/journals/jamasurgery/article-abstract/2735965?resultClick=1
Medicine (Baltimore)

Comparisons between magnetic resonance/ultrasound fusion-guided biopsy and standard biopsy in the diagnosis of prostate cancer

A prospective cohort study

This study was conducted on Chinese men who genetically have higher prostate-specific antigen (PSA) levels than those of men from western countries. The study tested viability of using MRI/US fusion-guided biopsy as a diagnostic tool for prostate cancer detection.

https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6133427/
doi: 10.1097/MD.0000000000011962

Journal of Urology

Comparison of Elastic and Rigid Registration during Magnetic Resonance Imaging/Ultrasound Fusion-Guided Prostate Biopsy: A Multi-Operator Phantom Study

This briefing describes comparative results of registration errors (RE) with and without the use of elastic deformation when performing MR/US fusion biopsy. Other studies have had conflicting results due to limitations with realism in experimental settings and numerous factors related to the clinical setting. This controlled study using a phantom model describes elastic deformation algorithms and concludes how RE differences exist based on user experience level, target location and intricacies of prostate volumes between MR and ultrasound.

https://doi.org/10.1016/j.juro.2018.06.028

Diagnostic and Interventional Radiology (DIR)

MRI/US fusion-guided prostate biopsy allows for equivalent cancer detection with significantly fewer needle cores in biopsy-naïve men

This study show signs of elevating the patient experience by detecting significant prostate cancer with cores taken only of MR-targeted areas, aside from the systematic 12-core, extended-sextant TRUS-guided biopsies. It argues that targeted biopsies are more efficient in cancer detection, potentially reducing the morbidity of multiple negative biopsies, and the possibility of septic complications following a procedure.

https://www.dirjournal.org/eng/makale/1850/95/Full-Text

Urology Times

Point: Is MRI fusion biopsy the new gold standard for diagnosis?

Published April 10, 2018, Dr. Kelly L. Stratton, MD, Assistant Professor of Urology at the University of Oklahoma said, “…Its benefits for improving cancer detection, clarifying anatomical detail, and potentially assisting in staging cancer spread make prostate MRI and fusion biopsy the new gold standard for prostate biopsy.” Dr. Stratton further added, “Urologists...should team up with a radiology champion, reviewing cases together and confirming histological diagnosis to quickly build expertise and ensure quality interpretation.”

www.urologytimes.com
New England Journal of Medicine (NEJM)

MRI-Targeted or Standard Biopsy for Prostate-Cancer Diagnosis

Read the results of the PRECISION Study Group on the impact multiparametric MRI and MRI-targeted biopsy has in men undergoing prostate cancer diagnosis. Evaluate workups for men that begin with imaging prior to a first biopsy as opposed to men initially having standard transrectal ultrasonography (TRUS) biopsy. This randomized, international trial allowed participation of nonacademic centers, 1.5T or 3.0T MRI scanners, and various forms of targeted biopsy using both transperineal and transrectal approaches.

doi: 10.1056/NEJMoa1801993

Translational Andrology and Urology

MRI-fusion biopsy: the contemporary experience

Incorporating fusion biopsy in clinical practice has potential to improve reproducibility offering operator’s real-time feedback of actual biopsied locations. Read how NYU adopted fusion biopsy over other MR-guided methods. Learn the how’s and why’s of decisions to incorporate MRI into a standard of care for prostate cancer diagnosis.

http://tau.amegroups.com/article/view/15067/15456
doi: 10.21037/tau.2017.04.30
PMID: 28725590