

International agreement on how to evaluate MRI scans "likely to change how we detect prostate cancer"

October 1 2015

International radiological bodies have agreed on a standard for how doctors evaluate MRI to confirm a diagnosis of prostate cancer. This promises to reduce the number of over diagnosis of insignificant cancers by to up to 89%. The new procedure also allows radiologists to identify up to 13% more life-threatening tumors than current procedures. The standards of how to acquire the MR-images and how to report them are published today in the peer-reviewed journal, *European Urology*, the journal of the European Association of Urology.

Prostate cancer is the most common cancer in men, with a European incidence rate of 214 cases per 1000 men and a mortality of over 70,000, outnumbering lung and colorectal cancer. Research shows that half of all men in Europe have a microscopic cancer at the age of 55 increasing to 80% at the age of 80.

The last few years have seen the introduction of new MRI scans into prostate cancer diagnosis, using an imagining technique called multiparametric prostate Magnetic Resonance Imaging (mpMRI). MpMRI has been developed, tested, and refined by many radiologists around the world over the past few decades. However, acquiring good images is only half the battle in identifying prostate cancer. The draft global guidelines were first released online in December 2014 by the American College of Radiology (ACR), AdMeTech Foundation, and European Society of Urogenital Radiology based on their five-year joint

project. The current version has been revised and updated for publication, making it the version which can be recommended to the clinical community.

In clinical trials, an early version of the Prostate Imaging and Reporting and Data System (PI-RADS) system has been shown to facilitate improvements in the diagnosis of intermediate- to high-grade cancers. The second version, called PI-RADS version 2 updates, and simplifies the way that the mpMRI scans are acquired, interpreted, and reported, and it provides detailed instructions so that mpMRI can be standardized.

Lead authors on the document are Professor Jeffrey Weinreb (Yale School of Medicine, New Haven, USA) and Professor Jelle Barentsz (Radboud University Medical Centre, Nijmegen, The Netherlands),

Current procedures for confirming prostate cancer use ultrasound-guided transrectal biopsy, where 10 to 12 prostate samples are taken via an ultrasound-guided needle, with the samples then being checked to see if they are cancerous. Often they are not, and are simply caused by a non-cancerous swelling of the prostate or the types of cancers that are very unlikely to result in harm to the patient. Numerous studies have shown that mpMRI improves the recognition and exclusion of the most dangerous tumours so that fewer men may have to undergo a biopsy, and when they do have a biopsy it is more likely to identify clinically significant cancers. In a further refinement, mpMRI allows MRI-targeted biopsies, which yield improved results compared with current ultrasound guided biopsy protocols.

Professor Barentsz commented:

"Early results have shown that mpMRI is an enormous help in detecting significant cancers. But to allow more wide-spread use, standardisation of image acquisition and interpretation is needed. The new PIRADS

protocols have the potential to bring real benefits to many patients, throughout the world".

Professor Barentsz continued:

"This work means we will see increasing use of good quality MRI scans in prostate diagnosis. These MRI-scanners are big expensive beasts, but in fact we have also found that, when you consider the savings made by reducing unnecessary treatment, that mpMRI is cost-effective. We don't suggest that mpMRI will completely replace the current ultrasound-biopsy method, but they are a powerful new diagnostic tool to the urologists in the [diagnosis](#) and treatment of prostate cancer. The next step is to take the system into the mainstream, which will mean an extensive training and educational programme".

Commenting for the European Association of Urology, Adjunct Secretary General responsible for Education, Professor Hendrik Van Poppel (University of Leuven, Belgium) said:

"PSA screening decreases prostate cancer mortality but exposes to overdiagnosis and overtreatment. mpMRI will not only simplify this screening, it will also play an important role in the follow-up of patients under active surveillance. It should be the first exam a patient at risk of significant [prostate cancer](#) should have. As for the costs of mpMRI, these should be weighed against the saving of costs of unnecessary biopsies, coping with complications and possible unnecessary treatments."

More information: "PI-RADS Prostate Imaging – Reporting and Data System: 2015, Version 2." [DOI: 10.1016/j.eururo.2015.08.052](https://doi.org/10.1016/j.eururo.2015.08.052)

Provided by European Association of Urology

Citation: International agreement on how to evaluate MRI scans "likely to change how we detect prostate cancer" (2015, October 1) retrieved 25 August 2024 from

<https://medicalxpress.com/news/2015-10-international-agreement-mri-scans-prostate.html>

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