

MRI helps identify patients with prostate cancer who may benefit from active surveillance

September 24 2012

PSA screening has resulted in improved prostate cancer survival, but the high rate of diagnosis and treatment side effects raise concerns about overtreatment. In the quest to prevent overtreatment, "active surveillance" has emerged as a plausible option, encouraged for men whose tumors may not need immediate treatment and may never progress to more serious illness. Appropriate criteria for selecting patients for active surveillance are continuously debated. A group of investigators from Memorial Sloan-Kettering Cancer Center in New York report that adding endorectal magnetic resonance imaging (MRI) to the initial clinical evaluation of men with clinically low prostate cancer risk helps assess eligibility for active surveillance. Their results are published in *The Journal of Urology*.

"Among [patients](#) initially diagnosed with clinically low risk [prostate cancer](#), those with tumors not clearly visualized on MRI were significantly more likely to demonstrate low risk features when a confirmatory biopsy was performed, while patients with tumors clearly visualized on MRI were significantly more likely to have their disease status upgraded on confirmatory biopsy," says lead investigator Hebert Alberto Vargas, MD, Department of Radiology, Memorial Sloan-Kettering Cancer Center.

Researchers evaluated 388 patients who had an initial [prostate biopsy](#) performed between 1999 and 2010, had a [Gleason score](#) (measures

prostate cancer aggressiveness) of 6 or less, and had a biopsy to confirm the assessment within 6 months of initial diagnosis. An endorectal MRI was performed in all patients between the initial and confirmatory biopsies.

MRI studies were interpreted by three radiologists with different levels of experience. One was a fellowship trained radiologist who had read only about 50 prostate MRI examinations before the study (reader 1). The second was a fellow with dedicated training in prostate imaging who had read approximately 500 prostate MRI examinations (reader 2). The third was a fellowship trained radiologist who had interpreted over 5,000 prostate MRI examinations (reader 3). They each assigned a score of 1 to 5 for the presence of tumor on MRI, with 1 being definitely no tumor and 5 being definitely tumor.

On confirmatory biopsy, Gleason scores were upgraded in 79 (20%) cases. Patients with higher MRI scores were more likely to have disease upgraded on confirmatory biopsy. An MRI score of 2 or less was highly associated with low risk features on confirmatory biopsy. Agreement on MRI scores was substantial between readers 2 and 3, but only fair between reader 1 and readers 2 and 3. "These results suggest that MRI of the prostate, if read by radiologists with appropriate training and experience, could help determine active surveillance eligibility and obviate the need for confirmatory biopsy in substantial numbers of patients," notes Dr. Vargas.

Active surveillance allows patients with low grade tumors avoid negative side effects of prostate cancer treatment including erectile dysfunction and bladder problems. The success of active surveillance relies primarily on the accurate identification of patients with low risk disease unlikely to have disease progression. "The fact that clear tumor visualization on MRI was predictive of upgrading on confirmatory prostate biopsy suggests that prostate MRI may contribute to the complex process of

assessing patient eligibility for [active surveillance](#)," Dr. Vargas concludes.

In an editorial in the same issue of *The Journal*, Guillaume Ploussard, MD, PhD, of the CHU Saint-Louis, APHP, Paris, France, notes "The primary issue is to reduce the number of clinical settings in which the urologist and the patient face the situation of an increased PSA and an uncertain diagnosis. MRI might help to limit the risk of biopsy under grading. In cases of normal signal in the whole gland, the patient might be reassured and re-biopsy delayed. In cases of a suspicious nodule, re-biopsy would be better justified, and biopsy cores could target specific zones."

More information: "The Value of Magnetic Resonance Imaging in Predicting Confirmatory Prostate Biopsy Findings in Patients Being Considered for Active Surveillance of Clinically Low Risk Prostate Cancer," H.A. Vargas, O. Akin, A. Afaq, et al. ([DOI: 10.1016/j.juro.2012.076.024](#)).

"How Much Should We Pursue an Elevated Prostate Specific Antigen," G. Ploussard. ([DOI 10.1016/j.juro.2012.08.061](#)).

Both appear online in advance of publication in *The Journal of Urology*, Volume 188, Issue 5 (November 2012) published by Elsevier.

Provided by Elsevier

Citation: MRI helps identify patients with prostate cancer who may benefit from active surveillance (2012, September 24) retrieved 18 April 2024 from <https://medicalxpress.com/news/2012-09-mri-patients-prostate-cancer-benefit.html>

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