
Active surveillance is now considered the standard of care for most men with low grade prostate cancer, as reflected in many national guidelines. A concern with surveillance is that the small but important subset of patients with biologically aggressive but potentially curable disease are denied the benefits of radical therapy in a timely fashion.

Studies of radical prostatectomy pathology in men who are surveillance candidates indicate that approximately 25 per cent will harbour occult large cancers, usually located anteriorly.6,7 The anterior location of these cancers is predictable, since the transrectal ultrasound (TRUS) guided approach tends to target the posterior, peripheral zone. Early identification of these occult cancers by MRI has the promise of significantly improving the outcome of surveillance by allowing those with co-existent aggressive disease to be identified and treated in a more timely fashion. An additional potential benefit of incorporating MRI would be the avoidance of frequent systematic biopsies if the MRI is negative and has a sufficiently high NPV for significant cancer).

An area of uncertainty in the field is the reliability of MRI for excluding higher grade prostate cancer in men on surveillance. A recent EUA panel emphasized that the NPV of MRI was a function of the patient’s underlying risk, and varied between 67 and 89%. This suggests that systematic biopsies may still be required in many patients to reliably exclude the presence of higher grade cancer in low risk surveillance candidates.

In a recent randomized study we carried out in 270 men on active surveillance, the addition of MRI with targeted biopsies to systematic biopsies did not increase the upgrading rate compared to systematic biopsy alone. Significant differences in upgrading rate were seen between the three sites in the study. At the site with the most experience with the targeted biopsy technique, the upgrading rate on targeted biopsy using two cores was higher than the upgrading rate with 12 core systematic biopsy. Both systematic and targeted biopsies missed significant cancer, in 6 and 8% respectively. In patients at high risk for occult higher grade disease, systematic biopsies should be performed regardless of the MRI findings. Experience with the targeted biopsy technique is essential to achieve accurate targeting.