‘Don’t let the perfect be the enemy of the good’ – time to embrace MRI before first prostate biopsy

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Drs Gorin & Walsh[1], ask ‘Are we there yet?’ regarding MRI prior to first prostate biopsy. The editorial is welcome, and the question important. The PRECISION data show that MRI-targeted prostate biopsy, compared to standard biopsy in men with a raised PSA, leads to the detection of more clinically significant cancer and less overdetection of indolent cancer, using fewer biopsies in fewer men and with fewer side-effects[2].

Should PRECISION have undertaken standard biopsy in men in the MRI arm? Firstly, the combination of biopsy approaches (targeted and standard) could have compromised the second approach, as gland swelling and needle tracks from the first approach can reduce the effectiveness of the second. Secondly, Panebianco and colleagues have already reported little clinical utility in adding standard biopsy to an MRI-targeted approach[3]. Their study of 1140 men, with 570 randomised to MRI first, showed 440 (77%) with a positive MRI, of whom 410/440 (93%) showed cancer. In 130 MRI-negative men, saturation TRUS biopsy was performed, yielding 37 (28%) Gleason 6 cancers, but no higher risk disease. Panebianco has also published an elegant study of 5 year follow up in 1255 MRI-negative men[4] – showing a 5% risk of clinically significant cancer at 5 year follow up, reducing to 4% in men who have a negative TRUS biopsy in addition to the negative MRI.

In PROMIS[5], 308/576 (54%) of participants had Gleason 7 disease or greater detected on 5mm mapping biopsy. Of these men, 38 (12.3%) were missed on MRI and 159 (51.6%) were missed on 12 core TRUS biopsy. MRI missed no cases of Gleason grade group 3-5, whilst TRUS biopsy missed 13 cases.

Should all men have a 5mm template mapping biopsy? Surely not. We know from the PICTURE study[6], that the morbidity of this approach is significant, with 23% of men having urinary retention and 20% having new onset erectile function difficulties, albeit temporary in most. In addition to this symptomatic burden, there is also considerable healthcare cost. A further consideration is the detection of low risk cancer. Whilst the argument of active surveillance is persuasive, we know that uptake of active surveillance is lower than it should be, particularly in some jurisductions[7].

In an era of shared decision making, we should endeavour to tailor the prostate cancer detection strategy to maximise benefits and reduce harms, and to allow patient preferences regarding the risk of overdetection with TRUS biopsy in MR-negative men versus continued PSA monitoring to be taken into account.

The harms of prostate cancer diagnosis lie firstly in missing clinically significant prostate cancer and secondly in committing men who will never benefit from treatment to long periods of monitoring and re-testing. So, whilst MRI is not perfect, it is certainly good – and does significantly better than standard biopsy in respect to both of these challenges, in a cost neutral manner[8]. The challenges of delivering this change in diagnostic standard are significant – hardware, expertise and equity of access – but not insurmountable. As a urological community we should seek to address them.

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