AB109. 139. Radiological-histological agreement in diagnosis of prostate cancer using multiparametric magnetic resonance imaging and transperineal template biopsy histology

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Background: Multiparametric magnetic resonance imaging (mpMRI) of the prostate is rapidly evolving in prostate cancer diagnostics. We aimed to review local diagnostic performance of prostate imaging reporting and data systems (PIRADS) reporting, by correlation with transperineal (TP) template biopsy histology.

Methods: A retrospective review (2016–2018) of patients undergoing TP biopsy preceded by mpMRI was performed. MRI reports, TP/previous TRUS histology, PSA and DRE were recorded. Radiological and histological results were correlated. Clinically significant prostate cancer (csCaP) was defined ≥ Gleason 3+4/ISUP 2.

Results: Fifty cases were identified, mean age 65.86 [50–78], mean gland size 61 cc (18–122 cc). One of two radiologists reported 48 MRIs. Forty-four patients had abnormal MRIs pre-biopsy. Of 10 reported PIRADS-3 lesions, histology confirmed 1 ipsilateral csCaP. Of 32 PIRADS-4 lesions, histology showed ipsilateral csCaP in 17. Of 19 PIRADS-5 lesions, ipsilateral csCaP was seen in 5. Of 19 patients without focal right sided prostatic abnormality on MRI, 4 had right sided csCAP (low volume). Of 20 patients with no radiological abnormality on the left, 3 had left sided csCAP. Where PIRADS-4/5 lesions correlated with csCaP histologically, 14 were peripheral zone, 4 transitional, 4 included both. In csCaP, mean PSA density was 0.3, versus 0.17 in those without csCaP. Of 23 patients with csCap, 18 had previous TRUS biopsy and were newly diagnosed/upstaged with mpMRI + TP biopsy.

Conclusions: mpMRI prostate is sensitive in detection of csCaP with high negative predictive value, and reasonable specificity. Incorporation of mpMRI and transperineal template biopsy into diagnostic algorithm has potential to significantly increase detection of CaP following benign TRUS biopsy where clinical suspicion exists. A greater volume of prospectively collected data will provide greater insight into local results.

Keywords: Multiparametric magnetic resonance imaging (mpMRI); prostate cancer; transperineal template biopsy

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