Practical Implementation of Multi-parametric Prostate MRI and PI-RADS: Experience from a district general hospital
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Aim: To describe the correlation between radiological findings using PI-RADsv2 in multi-parametric MRI (mpMRI) of the prostate and corresponding histology for patients presenting to a district general hospital.

Materials and methods: Retrospective study of patients who underwent mpMRI of the prostate over a 12 month period for their first presentation with no prior prostate intervention were analysed. PI-RADS score for each MRI abnormality identified was recorded. Comparison was made to subsequent histology and staging from TRUS or template biopsy.

Results: 305 patients with technically adequate mpMRI scans and applied PI-RADS score were included. 53 (17.4%) patients had likely benign findings, attributed a PI-RADS score of <2, 75 (24.6%) patients had an indeterminate score of 3 and 177 (58%) patients had a likely malignant lesion with a score of >4. Of these patients 270 underwent a TRUS biopsy and 39 a template biopsy, 26 required both. Sensitivity of mpMRI in this cohort was 96%, once stratified for clinically significant carcinomas sensitivity increased to 98.7%. Specificity was calculated at 75%.

False Negatives: Two cases were given a benign PI-RADS score of 2, but went on to have clinically significant carcinoma at biopsy. Both with Gleason 3+4 adenocarcinoma. These cases were reviewed at MDT and again felt that the MRI features were in line with PI-RADS 2.

Conclusion: This small study provides further validation for mpMRI for detecting clinically significant prostate cancer and suggests daily clinical practice can achieve the same high sensitivity as current literature. Additionally it adds to the evidence for using PI-RADS for clarity and unity in reporting and the multi-disciplinary team setting. Furthermore there is greater appreciation for targeted TRUS biopsy following initial MRI. Several limitations with this study include the fact that patients with likely benign disease on MRI did not have this proven with histology and so the accuracy of specificity is limited. However this gives an overall positive picture of the practical implementation of mpMRI or the prostate.