

00429 **Does the Prostate Imaging Reporting and Data System Version 2 (PIRADSv2) Accurately Predict Prostate Cancer? A Whole-mount Pathology – biopsy-naïve -mpMRI Correlation Study.**

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Aims: In this study, we aim to correlate mp-MRI detected lesions of PIRADSv2 grade 4/5 with whole-mount histology; hence to evaluate the efficacy of mp-MRI in identifying high grade prostate cancer.

Methodology: In this IRB approved study (CIRB:2017/2651), all radical prostatectomy cases operated between 1st January 2015 to 31st December 2016, with pre-operative, pre-biopsy mp-MRI performed in our institution, were identified. Wholemound pathology and mp-MRI images over read by 1 uropathologist and 1 uro-radiologist. Finally, mp-MRI and pathology data were centrally reviewed and correlated with pathological analysis, for Gleason grade.

Result: There were 44 suitable patients. A total of 91 tumour foci were identified on whole-mount histology. There were 16(17.5%) tumour foci identified by histology but were not detected on mp-MRI. Mp-MRI detected 105 lesions, comprising 86 PIRADSv2 grade 4/5 and 19 PIRADSv2 grade 3. Of the 86 PIRADSv2 grade 4/5, only 64(74.4%) have tumor foci on the pathology, and of the 19 PIRADSv2 grade 3 lesions, only 13(68.4%) have tumor foci on the pathology. The sensitivity and positive predictive values for mp-MRI to detect tumor foci are 82.8% and 73.3% respectively. A lesion classified as PIRADSv2 4/5 predicted a higher-grade cancer on pathology as compared to PIRADSv2 3 (OR: 5.85 95% CI 1.59 to 21.56, p=0.0079). The sensitivity and positive predictive values for mp-MRI PIRAD v2 grade 4/5 to detect Gleason grade 4/5 is 86.5 % and 52.3% respectively.

Conclusion: Based on our study, mp-MRI appears to be useful in detecting tumor foci (of any grade), demonstrating high sensitivities and positive predictive values. PIRADSv2 4/5 correctly identify most of the high-grade lesion but it may overcall a low-grade lesion. Currently, an mpMRI negative for PIRADSv2 4/5 is good for reassuring the patient has no high-grade lesion, but its high rate of false positives mean that targeted biopsy is still necessary for histological correlation.