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### THE USE OF MULTIPARAMETRIC MRI OF THE PROSTATE IN MEN PRESENTING WITH SUSPECTED PROSTATE CANCER

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**Introduction:** Multiparametric MRI (mpMRI) is increasingly used in the initial investigation of men with suspected prostate cancer (PC) [1]. The majority of existing data regarding its usage is derived from research-driven protocols. We describe the utility of mpMRI in routine practice in a UK cancer centre.

**Methods:** 629 mpMRIs were performed between February 2014 and September 2015 in men with an abnormal age-related PSA or DRE, with no prior history of MRI or prostate biopsy. Metrics recorded included age, DRE, smoking status, PSA, MRI findings, biopsy results. Mean age 66 years (46-85), mean PSA 9.98 (0.01-839.4), clinical stage T1 80.1%, clinical stage T2 13.8%. Data were collected retrospectively from records made at the time of patient investigations. Prostate mpMRIs were reported by one of 5 radiologists.

**Results:** mpMRI was interpretable in 595 cases. 34 cases were excluded due to artefact or incomplete scanning. A PI-RADS score was assigned in 90.1% (536) of cases. Overall 23.0% were deemed likely to have clinically significant PC (PI-RADS 4-5).

Biopsy was performed in 73.0% of patients with PI-RADS 1-3 and 94.9% of patients with PI-RADS 4-5. Targeting was performed where appropriate using transperineal or transrectal biopsy. Detection rates of clinically significant PC (Gleason  $\geq 7$ ) are shown below.

PIRADS score	Insignificant PC (Gleason 6)	Clinically significant PC (Gleason $\geq 7$ )	Benign
1	25.9%	9.1%	65.0%
2	15.0%	11.7%	73.3%
3	24.7%	32.6%	42.7%
4	10.8%	55.4%	33.8%
5	8.9%	82.1%	8.9%
Unknown	12.5%	43.8%	43.8%

#### Conclusion:

With a rising PI-RADS score, the percentage of clinically significant prostate cancer detected increases, and the percentage of clinically insignificant prostate cancer (Gleason 6) decreases. However, a normal mpMRI does not exclude clinically significant PC.

- [1] Weinreb, J.C., Barentsz, J.O., Choyke, P.L., et al. 2016. PI-RADS Prostate Imaging – Reporting and Data System: 2015, Version 2. *European Urology* 69, 16–40. doi:10.1016/j.eururo.2015.08.052