Correlation of 3T multiparametric prostate MRI using prostate imaging reporting and data system (PIRADS) version 2 with biopsy as reference standard

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Erratum in

- Correction to: Correlation of 3T multiparametric prostate MRI using prostate imaging reporting and data system (PIRADS) version 2 with biopsy as reference standard.
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Abstract

Objective: To correlate the findings on 3T multiparametric prostate MRI using PIRADS version 2 with prostate biopsy results as the standard of reference.

Materials and methods: 134 consecutive treatment naive patients (mean age 64 years, range 41-82 years) underwent MRI-directed prostate biopsy. MRI-TRUS fusion biopsy was used for 77 (77/134 = 57.5%) patients, cognitive fusion for 51 (51/134 = 38.0%) patients, and 6 patients (6/134 = 4.5%) without a target nodule had systematic biopsy only. Out of the 1676 biopsy sites, 237 (237/1676 = 14.1%) were positive on MRI for a PIRADS 3, 4, or 5 nodule. Fifty-eight (58/134, 43.3%) patients had clinically significant prostate cancer (csPCa). The findings on MRI using PIRADS version 2 were correlated with the biopsy results.

Results: The accuracy, sensitivity, specificity, positive predictive value, and negative predictive value of PIRADS ≥ 3 for csPCa were 89%, 76.5%, 89.7%, 31.7%, and 98.4%, respectively. The detection rates of csPCa for PIRADS 3, 4, and 5 nodules were 6.1% (4/66), 33.3% (42/126), and 64.4% (29/45), respectively. MRI did not identify a nodule in 23/1676 (1.4%) biopsy sites that contained csPCa. The MRI reader, biopsy operator, method of fusion biopsy, and zonal location of prostate nodule did not significantly affect the odds of having a biopsy result positive for csPCa.

Conclusion: PIRADS ≥ 3 had high specificity and high negative predictive value for csPCa using biopsy results as the standard of reference. The presence of csPCa from a biopsy site was highly unlikely in the absence of a corresponding PIRADS ≥ 3 nodule.