To evaluate the role of preoperative multi-parametric magnetic resonance imaging (MP-MRI) in patients undergoing radical prostatectomy. Specifically, the accuracy of MP-MRI in detecting extracapsular extension (ECE) and individuating the side of the index lesion have been explored.

Thirty-five consecutive patients undergoing radical prostatectomy have been retrospectively analyzed. The MRI exam incorporated T2-weighted imaging, diffusion-weighted imaging and dynamic contrast enhancement in all patients. χ(2) test was performed to assess an association between an MP-MRI suggestive of ECE and pathologic ECE; similar tests were performed to study the association between the MRI-detected side of the index lesion and its true localization on final pathology. Univariate logistic regression models were constructed to evaluate possible predictors of ECE, including MP-MRI suspected ECE.

Seventeen percent (6/35) of men presented ECE on final pathology. MP-MRI was predictive of pathologic ECE with a negative predictive value and specificity of 93% and 90%, respectively. Global accuracy of MP-MRI in predicting ECE was 86%. MRI-detected ECE was significantly predictive of pathologic ECE on logistic regression (OR: 17.3, 95% CI: 2.2-138.2, P=0.007). Moreover, MRI significantly predicted the side of the index lesion (P=0.012).

In this single center cohort, preoperative MP-MRI was significantly predictive of ECE and side of the index lesion. Further studies are necessary to individuate patients who can benefit from preoperative MP-MRI.

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