Prediction of extracapsular disease with multiparametric magnetic resonance imaging in high risk localized prostate cancer patient.

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Abstract

OBJECTIVES: To assess the usefulness of multiparametric magnetic resonance imaging (MRI) in the staging of patients with localized prostate cancer (PC) and high risk of extracapsular disease (ECD).

METHODS: Retrospective study including 30 patients with localized PC and high risk of ECD. Pathologist and radiologist established an ECD suspicion according to the evaluation of the prostatic biopsy specimens and the multiparametric MRI analysis, respectively. Radical prostatectomy (RP) specimen analysis was used as a definitive confirmatory reference. Kappa (k) test was used to assess the degree of consistency between the initial suspicion provided by both specialists and the reference RP specimen.

RESULTS: When the prostatic gland was analyzed as a single unit, the pathological evaluation of the biopsy specimens did not correctly detect the risk of ECD in 46.6% of the patients (14/30; 10 FN; k=-0.035, 95%CI [-0.29-0.36]), while multiparametric MRI did not do in 36% of the cases (11/30, 9 FP; k=0.27, 95%CI [-0.03-0.61]). Whereas, if each side of the prostate (i.e. right and left) was considered as an independent observation, the pathologist wrongly predicted the risk of ECD in 35% of the cases (21/60; 18 FN; k=0.19, 95%CI [-0.03-0.40]), while the radiologist erred only in 18.3% of the cases (11/60; 7 FN and 4 FP; k=0.61, 95%CI [0.40-0.81]).

CONCLUSIONS: Data from our experience suggest an added value of multiparametric MRI in the clinical staging of localized PC in cases of high risk of ECD. Multiparametric MRI may be used as a helpful tool in the surgical planning and the decision-making process regarding the management of this entity.