Multiparametric MRI for bladder cancer staging. Initial experience of our clinic

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Introduction & Objectives: Multiparametric MRI (mp-MRI) has been an useful imaging modality for the T staging of bladder cancer. Furthermore the distinction between non muscle invasive and muscle invasive bladder cancer is very important for the selection of the appropriate treatment. This distinction still is performed with transurethral bladder tumor resection (TURB) which is an invasive modality. The purpose of this article is the evaluation of the accuracy of the mp-MRI using Vesical Imaging-Reporting and Data System (VI-RADS) in the clinical management of the bladder cancer patients and its usefulness to the discrimination between non-muscle-invasive bladder cancer and muscle-invasive bladder cancer.

Materials & Methods: 36 patients with primary and non primary bladder cancer were evaluated between September 2021 and June 2022. Patients with history of pelvic irradiation were excluded. The mp-MRI is performed with a 3 Tesla magnetic tomographer in the department of radiology of our hospital prior to transurethral resection of bladder tumor (TURBT). All mp-MRIs were performed by the same radiologist. Sensitivity, specificity, positive predictive value (PPV), and negative predictive value (NPV) were calculated for VI-RADS cutoff 4. The evaluation of the VIRADS was compared with the pathological stage Pt after the transurethral resection of bladder tumor.

Results: Thirty four (34) patients were included in the final analysis, ten (10) with muscle invasive bladder cancer and twenty four (24) with non muscle invasive bladder cancer. Sensitivity and specificity were 100% and 41,66% respectively. Positive predictive value (PPV) and negative predictive value (NPV) were 41,67 and 100% respectively.

Conclusions: We concluded that multiparametric MRI is an accurate method for staging of patients with bladder cancer and Vesical Imaging-Reporting and Data System (VI-RADS) is accurate in differentiating muscle invasive bladder cancer (MIBC) from non muscle invasive bladder cancer (NMIBC).