P022 Role of magnetic resonance in the initial management of patients in active surveillance; predictor of change to active treatment

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Introduction & Objectives: Active Surveillance (AS) is a prostate cancer (PCa) management based on structured monitoring program which aim to avoid unnecessary treatment and its side effects in patients with non-lethal prostate cancer. Our purpose was to study the role of the Multi-parametric Magnetic Resonance Imaging (mpMRI) at the confirmatory biopsy evaluating its association with the risk of switching to an active treatment modality.

Materials & Methods: A retrospective study in a cohort of patients under an AS protocol between 2011 and 2019 in a single tertiary university hospital was carried out. Within the protocol the patients underwent a confirmatory biopsy at 6 months from the diagnoses. The cohort was stratified according the use of mpMRI before the confirmatory biopsy. The age, the PSA and free PSA percentage levels, prostate volume, PSA density, number of positive cores on diagnostic biopsy, the PIRADS score on mpMRI and percentage of patients moved to active treatment after confirmatory biopsy were evaluated. A cohort description and comparison according to the use of mpRMI before the biopsy was performed. The association of a suspicious MRI and the rate of switching to active treatment was analyzed with the Chi-square test, and a multivariate logistic regression analysis was performed to evaluate the strength of each variable in the risk of moving to active treatment.

Results: A total of 165 patients with a PCa ISUP grade of 1 diagnosis and 3 patients with an ISUP grade of 2 were included. The mean age was 64 years, with a PSA of 6 ng/mL and a free PSA percentage of 19.01%. The mean prostate volume and PSA density were 45.17 cc and 0.15 ng/mL/cc, respectively. There were no clinical differences between the two cohorts (without mpMRI; n=83, and with mpMRI; n=85) with a rate of moving to active treatment of 21.7% and 32.9%, respectively. Within the cohort with mpMRI, 42 patients had a PIRADS ≥3 on the mpMRI resulting in a 59.5% rate of moving to active treatment. However, only 3 (7%) patients were switched to active treatment in the group without a suspicious mpMRI before the confirmatory biopsy ($p < 0.001$). The multivariate regression analysis revealed that a suspicious lesion on mpMRI (PIRADS ≥3) and the number of positive cores on diagnostic biopsy were the variables associated with a higher risk of moving to active treatment (OR =31.02 and 4.17; $p < 0.05$, respectively) after the confirmatory biopsy. Furthermore, the PSA density also showed a clear trend with a higher risk of moving to active treatment ($p = 0.09$)

Conclusions: Within an AS protocol, the mpMRI seems to be a useful tool in the stratification of the risk probability of switching to an active treatment after the confirmatory biopsy.