P014 Are multiparametric MRI findings sufficient for proper prostate cancer decision making?: Predictors of false-negatives in a multicentric study

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Introduction & Objectives: Recent studies showed a major role for multi-parametric MRI (mpMRI) in detecting clinical significant PCa. Some centers perform mpMRI before radical prostatectomy (RP) for local staging. In this setting, some patients may have negative mpMRI reports despite positive transrectal ultrasound guided biopsy (TRUSB). Recent evidence supports the role of diagnostic mpMRI, but some patients could have a clinical significant disease and negative mpMRI. Our study analyzed PCa patients with negative imaging.

Materials & Methods: We performed a retrospective review of the clinical, pathological and imagiological data from patients who underwent RP with mpMRI staging, between 2014-2018 in 3 tertiary centers. Imaging reports were classified as positive (any suspicious description) or negative (no lesion referred on T2-weighted, on diffusion-weighted and on dynamic contrast-enhanced imaging). A sub-analysis of reports was made dividing the group into experienced(>50 reports/year) and non-experienced radiologists.

Results: Of the 820 patients that underwent RP, 428 had pre-operatory mpMRI, performed after a positive result on TRUSB. 21% of the patients had no lesions reported on mpMRI. The majority of negative reports referred to primary Gleason(G)3 tumors (73%), to patients with negative digital rectal exam (63%) and <20% of positive cores on TRUSB (66%). There was a correlation between positivity on mpMRI and total PSA (p=0,01), primary G grade (p=0,01) and GScore (p=0,03). There was also a positive correlation between dimension of the lesion on mpMRI and the pT stage (p=0,001) and the GScore (p=0,015). The Extracapsular Envolvement (ECE) on mpMRI correlated with pathological ECE (p=0,05). Radiologists labeled 11% of mpMRIs as normal in patients with a primary G4 though all patients with GScore ≥8 had a positive report. Regarding radiologists' experience, the more experienced group had more false negative (FN) exams (26,5 vs. 16.5%). However, in the group of experienced radiologists the majority of the negatively reported exams corresponded to patients with low grade PCa (p<0,0001).

Conclusions: In our study negative mpMRI showed a good correlation with low risk tumors. With the increasing use of mpMRI for diagnostic purposes, it is important to have trained radiologists in order to avoid FN reports of clinical significative PCa. In our case radiologists already knew the TRUSB result before the exam so we expect the number of FN exams would be even higher if the mpMRI were used with diagnostic purpose. The number of FN exams in experienced radiologist could be interpreted by the radiologists' degree of confidence, overlooking clinical insignificant disease.
Despite the good performance in low risk disease described on literature, our results showed that more than 10% of intermediate risk patients could have been missed if mpMRI was the first diagnostic tool.