P010 The role of MRI and MRI/TRUS fusion biopsy in the management of ASAP

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Introduction & Objectives: Atypical Small Acinar Proliferation (ASAP) has been traditionally considered a preneoplasic stage before prostate cancer. For this reason, EAU guidelines on Cancer Prostate recommended until 2019 to repeat the prostate biopsy within the next 6 months. Our aim is to describe our experience and assess the diagnostic yield from rebiopsies, and explore the influence of MRI findings and MRI/TRUS fusion biopsy in the management of these patients.

Materials & Methods: We performed a respective review of clinical histories from patients diagnosed with ASAP at our hospital from 2012 to 2020 who had undergone an MRI 6 months later or before the index biopsy. We excluded patients with a synchronic diagnosis of prostate cancer in the index biopsy.

Results: 42 patients were included with a median age of 67 years, PSA of 6.95 ng/ml, Free/total PSA of 0.17, PSA density of 0.14, and 2 patients (4.8%) presented an abnormal digital rectal examination (DRE). 12 patients (28.6%) had undergone an MRI before the index biopsy, and 10 of them had shown suspicious lesions (PIRADS score≥3). Index biopsies were performed by a systematic and transrectal approach (39 biopsies, 93%), transrectal and cognitive approach (2 biopsies, 5%), or transperineal and targeted approach (1 MRI/TRUS fusion biopsy, 2%). 12 median cores per patient were sampled (IQR 12-16), and 1 core (range 1-3) was affected. Concerning repeated biopsies, 39 patients were rebiopsied within the next 12 months: 13 of them with a transperineal MRI/TRUS fusion biopsy, and 1 cognitive and 25 systematic transrectal ones, sampling 18 median cores per patient. Of overall rebiopsied patients, 22 patients (51%) resulted in a prostatic neoplasm, and 5 (13%) in a clinically significant one (ISUP>1). In contrast, among rebiopsied patients by a fusion software approach: 10 (77%) resulted in neoplasm, and 3 (23%) in a clinically significant one. Thus, MRI/TRUS fusion biopsy increased 50% the detection rate of an any-grade tumor, and 77% the clinically significant one. Regarding the MRI diagnostic performance, 34 of 39 rebiopsied patients had undergone an MRI between the index and the second biopsy, and 24 showed potentially malignant lesions. While evaluating the diagnosis of any-grade tumors, MRI showed a sensitivity of 80%, specificity of 43%, false negative rate (FNR) of 40%, and false positive rate of 33%. When evaluating the diagnosis of clinically significant tumors, MRI showed a sensitivity of 100% without any false negatives, a specificity of 33%, and an FPR of 83%.

Conclusions: The performance of repeated biopsies among patients diagnosed with ASAP offers a low diagnostic yield, especially for the diagnosis of clinically significant neoplasms. Our experience suggests that by performing an MRI we can exclude the presence of a clinically significant prostatic neoplasm. In case of indicating a rebiopsy, the MRI/TRUS fusion biopsy overperforms the traditional systematic biopsy.