P011 Pre-biopsy predictors of prostate cancer in the image-fusion non-targeted systematic areas

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Introduction & Objectives: The European Association of Urology guidelines recommend, after magnetic resonance, to include systematic biopsies next to targeted biopsies for biopsy-naive patients and to avoid systematic biopsies after previous negative biopsy. However, these recommendations are still not based on high level of evidence. The ideal "MR pathway" would target biopsies avoiding unnecessary systematic sampling to other areas. The identification of predictors of positive biopsy in the non-targeted areas is of utmost importance to decide for systematic biopsies or not. This study aims to assess possible predictors of positive biopsy in the non-targeted area for patients with PI-RADS ≥3.

Materials & Methods: This is a retrospective study based on fusion-biopsies executed with the Trinity Koelis® (Koelis, Grenoble, France) MRI/US Fusion system. The odd for detection of prostate cancer (PCa) in the non-targeted areas (event) was assessed with multivariate logistic regression analysis including clinical relevant covariates and a significance level of 0.05. The outcome was defined as positive biopsy in the non-targeted area and the covariates as follows: iPSA; cT stage, biopsy state, previous biopsy, PI-RADS 3-5 in the index lesion (the largest lesion).

Results: 364 patients underwent fusion biopsies by expert urologists. After the exclusion of patients with previous diagnosis of PCa (13), patients with no data regarding the outcome and the covariates, 346 subjects remained for multivariate analyses. Seventy-three events were detected for final analysis. Multivariate results are shown in table 1. A sensitivity analysis performed excluding patients with previous negative biopsy for PCa but positive for ASAP or HGPIN (13 patients) confirmed the results (PI-RADS 3 as reference, PI-RADS 4 OR 4.2; PI-RADS 5 OR 5.9 with p<0.05).

	OR	p	95% CI
PI-RADS 3	reference		
PI-RADS 4	4,7	0,0007	1,9 - 11,4
PI-RADS 5	6,2	0,0005	2,2 - 17,3
iPSA	-	0,3	-
cT2 vs cT2	-	0,5	-
Prevoius biopsy	-	0,1	-

Conclusions: Despite the biopsy-naïve status the odd for PCa in the image-fusion non-targeted systematic areas increases according to the characteristics of the target lesion from PI-RADS 4 to 5 compared to PI-RADS 3. PI-RADS should trigger the indication for the systematic sampling next to the targeted biopsies.