

## Description of a fast biopsy protocol after MRI and comparison with the standard protocol for the diagnosis of prostate cancer

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**Introduction & Objectives:** Overdiagnosis and overtreatment of non-significant prostate cancer (NSPC) is still a problem nowadays. At the same time, available resources are improving to increase the diagnostic accuracy of PC. Objective: to establish and to evaluate a fast protocol based on magnetic resonance imaging (MRI) guided prostate biopsy (PB) compared with transrectal PB at diagnosis, also trying to avoid it in patients with NSPC.

**Materials & Methods:** We prospectively analyzed patients with suspected PC during the years 2019 and 2021 and compared the groups of conventional PB and MRI guided PB protocols. MRI guided PB protocol: performance of transrectal fusion PB in patients with suspicious lesion on MRI (PIRADS 3 or higher) or at high risk of clinically significant prostate cancer (CSPC), defined by ISUP $\geq$ 2 in the pathology specimen) on the Rotterdam risk scale with negative MRI. Protocol inclusion criteria: absence of previous BP, PSA: <20ng/ml, <80 years and negative digital rectal examination.

**Results:** We enrolled 376 patients: 159(42.29%) and 217(57.71%) in the standard and MRI guided PB groups, respectively. Fifty-six (20.5%) biopsies were performed in the MRI guided PB group. Of them, 35(62.5%) were by radiological findings in MRI and 21(37.5%) by Rotterdam calculator. Besides, 103(64.47%) BPs were avoided in this group.

Pathological findings:

ISUP	MRI group (56)	Conventional BP (217)
No malignancy	19(33.9%)	105(48.38%)
1	9(16.07%)	30(13.82%)
2	7(12.5%)	29(13.36%)
3	13(23.21%)	22(10.13%)
4	7(12.5%)	20(9.21%)
5	1(1.7%)	11(5.06%)

In the group of the patients who underwent conventional PB, 56(26%) required MRI after negative pathology, and 18 (32.14%) fusion or saturation PB were done in this group of patients.

Therefore, 37(66.7%) PC were detected in the MRI guided PB group and 112(51.4%) in the conventional PB group (OR=1.28, 95%CI=1.019-1.607;  $p<0.05$ ). Considering only CSPC, it decreases to 28(50%) and 82(37.79%) respectively (OR=1.32, 95%CI= 0.96-1.80;  $p=0.09$ ). The period from suspected PC to PC diagnosis in the MRI guided PB group was longer (44.21 vs 31.81 days,  $p<0.05$ ), however, the period between PB and the diagnostic pathology results was shorter in this group (17.46 vs 41.73days,  $p<0.05$ ).

**Conclusions:** The MRI guided PB protocol had a higher CSPC detection rate, avoiding a high number of unnecessary PB and decreasing the overtreatment of NSPC. In addition, the delay time between suspicion and certain diagnosis of CP was decreased.