

## Descriptive cost comparison between prostate standard biopsy and MRI guided biopsy protocols for the diagnosis of prostate cancer

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**Introduction & Objectives:** We have implemented in our hospital a new protocol for the development of transrectal fusion biopsies at diagnosis in consultations. This would have two advantages: first, a lower cost than perineal fusion biopsies performed in the operating room, second, to avoid random biopsies in case of prostate cancer (PC) suspicion. Our objective is to perform a descriptive comparison of the costs of the magnetic resonance imaging (MRI) guided prostate biopsy (PB) and standard protocols in our hospital.

**Materials & Methods:** A prospective study of patients with suspected PC between the years 2019 and 2021 is performed, and the results obtained by conventional BP and by MRI guided PB protocol are compared.

A descriptive cost comparison of BP performed by both protocols is performed. Costs were calculated. The costs were calculated based on price tables per procedure, taking into account consumables and non-consumables, medical consultations and staff salaries (Table 1).

Procedure	Cost per patient (€)
Core needle biopsy by ultrasonography without sedation.	167.47
Pelvic MRI with contrast	548.75
Cost of anesthesiologist	125.58
Operating room cost	347.76
Cost of subsequent urology consultation.	84.50

**Results:** Overall, 376 patients were recruited: 159 (42.29%) in the MRI guided PB group and 217 (57.71%) in the standard protocol group. Fifty-six (35.22%) biopsies were performed in the MRI group of which, 35 (62.5%) were based on radiological findings by MRI and 21 (37.5%) according to the Rotterdam risk calculator. Therefore, 103 (64.77%) PB of all suspected PC were avoided. After first negative biopsy in patients of the conventional protocol, MRI was necessary in 56 (26%) of them due to persistent PSA elevation. A PB was subsequently performed, by fusion or saturation in the operating room, in 18 (32.14%) of them with the consequent costs. The total cost of the MRI guided PB protocol group was 101,361.57 € (637.49 € per patient), and in the conventional BP group it was 96,942.07 € (446.73 € per patient). Clinically significant PC was found in 28 (50%) and 82 (37.79%) patients in the new and standard protocol groups, respectively (OR = 1.32, 95% CI= 0.96-1.80; p=0.0967).

**Conclusions:** The MRI guided PB protocol implies a higher cost per patient than the standard protocol for PC diagnosis. However, a high number of PBs could be avoided in certain cases, reducing the overdiagnosis of clinically insignificant PC and the costs derived from its diagnosis and overtreatment.