EDITORIAL

Clinical

Comparison of procedural anxiety and pain associated with conventional transrectal ultrasound prostate biopsy to magnetic resonance imaging-ultrasound fusion-guided biopsy: a prospective cohort trial

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Prostate biopsy is essential for histological diagnosis of prostate cancer (PCa). The scheme, technology, and approach for choosing an effective and safe prostate biopsy have been extremely debated topics in recent years [1].

In clinical practice, combined systematic and targeted biopsies (on suspicious areas identified on multiparametric magnetic resonance imaging [mpMRI]) are generally performed when PCa is suspected. Although this choice is widely accepted for biopsy-naïve patients, some authors have proposed performing only targeted biopsies in selected non-biopsy-naïve subjects. This discrepancy arises from the evidence that targeted biopsy appears to be associated with greater detection of International Society of Urological Pathology (ISUP) ≥ 2 tumors (significant) but less identification of ISUP 1 cancers (non-significant) than systematic biopsy. Consequently, there are two possible diagnostic pathways: 1) "combined pathway", in which men with a positive mpMRI (PI-RADS ≥ 3) undergo combined systematic and targeted biopsy, and subjects with a negative mpMRI (PI-RADS ≤ 2) undergo only systematic biopsy; 2) "single pathway", in which patients with a positive mpMRI undergo only targeted biopsy, and men with a negative mpMRI do not undergo biopsy. The first pathway maximizes the detection of significant cancers but has the disadvantage of leading to greater detection of insignificant tumors and of referring all patients with suspected PCa to biopsy. The second pathway minimizes these disadvantages at the cost of missing a small proportion of significant tumors [2].

Moreover, when mpMRI shows a suspicious prostatic lesion, the current literature has not demonstrated a clear superiority of one image-guided technique (cognitive, fusion, direct in-bore) over the others; therefore, mpMRI-targeted biopsy can be performed using any of these techniques based on the urologist's preference [3].

Finally, in recent times, the transperineal biopsy approach has become recommended over the transrectal approach owing to a lower risk of infectious complications, maintaining the same detection rate. However, its diffusion into clinical practice remains unclear [4].

In this context of uncertainty, patients' points of view (sensations, expectations, preferences, and needs) are often forgotten. The discomfort and psychological impact associated with a particular scheme, technology, or approach can be a determining factor in choosing how to perform prostate biopsy in a specific patient. Deivasigamani's study, although presenting obvious methodological limitations and only partial responses, has the merit of trying to investigate in this direction [5].

Deivasigamani et al. compared pain and anxiety levels between 99 patients undergoing systematic 12-core transrectal ultrasound-guided prostate biopsy without targeted sampling (STB) and 66 subjects undergoing STB plus mpMRI/ultrasound (US)-guided fusion targeted biopsy (STB + FB). The authors designed a prospective non-randomized trial, including both naïve and non-naïve men for prostate biopsy. The State-Trait Anxiety Inventory (STAI) and Numerical Rating Scale (NRS) were validated questionnaires used to evaluate anxiety and pain, respectively. Median STAI-Trait (at baseline, prior to the biopsy) and STAI-State scores before biopsy were similar between the two groups ($p = 0.2$ and $p = 0.1$, respectively). The median NRS score for pain after biopsy was not significantly different between the two cohorts ($p = 0.7$). The median STAI-State score after biopsy was higher in the STB + FB group (53 vs. 47; $p = 0.001$), with a mean difference of −7 (95% CI −9 −4.5, $p = 0.001$) in favor of the STB group. A greater number of patients in the STB + FB arm reported a severe state of anxiety (STAI-State score between 45 and 80) after biopsy (89% vs. 59%, $p = 0.002$). Patients with previous prostate biopsies had a significantly higher STAI-State score after the procedure than men without a history of biopsy (difference 2.96, 95% CI 0.92 5, $p = 0.005$). The number of prior biopsies was associated with the severity of postprocedural anxiety in the STB + FB cohort ($p = 0.04$) but not in the STB group ($p = 0.37$). According to Deivasigamani's findings, patients undergoing combined transrectal systematic and fusion-targeted biopsy of the prostate seem to experience greater anxiety after the procedure than men undergoing transrectal systematic biopsy alone. This appears more evident in subjects with a history of prostate biopsy [5].

In our opinion, further well-designed studies investigating the discomfort, psychological impact, and preferences of patients related to prostate biopsy are needed. They could support counseling, guide the choice of how to perform biopsy (considering parameters different from the purely oncological ones), and ultimately improve patient compliance and outcomes.

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ADDITIONAL INFORMATION

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