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EDITORIAL

Editorial comment on: Measurement of serum isoform [–2]proPSA derivatives shows superior accuracy to magnetic resonance imaging in the diagnosis of prostate cancer in patients with a total prostate-specific antigen level of 2–10 ng/ml

Early detection of prostate cancer (PCa), and especially the detection of clinically significant disease, remains one of the most important issues in the urology field. The objective is to reduce the overdiagnosis and overtreatment of those patients who are at low risk of progression and eventually death from PCa.

Since its introduction, prostate-specific antigen (PSA) has shown low accuracy in predicting PCa, not discriminating it from other, benign conditions. In recent years, new isoforms of PSA have been introduced in clinical practice, with promising results. Notably, [–2]proPSA (p2PSA) was shown to be more accurate than PSA and percentage free PSA in predicting PCa and to correlate more closely with high-grade diseases [1]. However, a great deal of interest was generated in the urological community by the introduction of the Prostate Health Index (PHI), a mathematical algorithm that combines p2PSA, free PSA and total PSA. Of the PSA derivatives, the PHI was shown to be the best predictor of PCa, in particular in those patients with a total PSA value of 2–10 ng/ml (the so-called grey zone) [2,3], but also in many other subgroups (e.g. patients with previous negative biopsies, men with positive family history, young patients and obese men).

Beside serum markers, magnetic resonance imaging (MRI), with its ability to display and differentiate minor soft tissue details, has been proposed as an effective tool to investigate the presence of PCa. T2-weighted imaging (T2WI) provides excellent differentiation of anatomical zones of the prostate, and may correlate with PCa Gleason scores [4], but it has low accuracy for the detection and localization of PCa when considered alone. In particular, the diagnosis of PCa has benefited from the development of multiparametric MRI (mpMRI), which combines T2WI, diffusion-weighted imaging and dynamic contrast-enhanced imaging. Indeed mpMRI was shown to be an accurate technique to localize PCa and to improve risk stratification [5]. However, a prostate biopsy is still required to confirm the presence of PCa, and MRI-targeted biopsy showed a better cancer detection rate than traditional systematic biopsy in naïve patients and particularly in those with previously negative biopsies [6].

For the first time, Furuya et al. [7] compared the accuracy of the p2PSA derivatives and MRI in discriminating between patients with and without PCa, and most importantly high-grade PCa. Although retrospective and limited in numbers, this study suggests some new perspective for the clinical management of suspected PCa. According to previous literature, PHI was the most accurate method for suggesting a diagnosis of PCa at biopsy, while MRI was shown to have the best specificity for high-grade PCa. Thus, the authors suggest that PHI could be more useful than MRI in predicting the presence of PCa at biopsy (even in a screening setting), and MRI may be more useful than the PHI in predicting the presence of significant diseases (in patients who are suspected of having PCa from screening tests, avoiding unnecessary biopsies).

It is important to emphasize that nowadays PCa diagnosis is still based on biopsy, and that PSA and digital rectal examination remain the primary tools for the decision to perform a biopsy. In uncertain cases such as asymptomatic men with a normal digital rectal examination and a PSA between 2 and 10 ng/ml, the guidelines of the European Association of Urology suggest offering further diagnostic options such as serum markers (e.g. PHI) and performing mpMRI, especially when a clinical suspicion of PCa persists after negative biopsies [8].

Further research is clearly necessary. First of all, a greater number of patients and the evaluation of the mpMRI are needed to draw definitive conclusions.

Disclosure statement

The authors report no conflicts of interest.

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