EDITORIAL

Selective Bone Scan staging for patients with Prostate cancer: do absolute categories really make sense?

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Bone metastases are lethal and source of major morbidity and health care issues in patients with prostate cancer (PCa). As such, their prompt and timely identification is a critical step in the management of patients newly diagnosed with PCa. However, guidelines vary widely in the indication on when to perform a bone staging (usually via a bone scan), without a clear consensus on which patients should and should not undergo imaging at diagnosis. Numerous models and indications exist, without a valid comparison of the different strategies to date. To respond to such clinical question, Hiwase et al. applied decision curve analysis to evaluate and compare the clinical benefit of available models [1]. Using the South Australian Prostate Cancer Clinical Outcomes Collaborative (SA-PCCOC) database, which comprises over 10,000 men with newly diagnosed PCa, the authors applied eleven available models and explored the net clinical benefit of each. Depending on the preference ratio chosen (number of patients willing to test in order to find one metastatic patient), the best model changed: overall, for a ratio 1:39–7:93, the EAU guidelines and EAU high-risk patients were those for which performing a bone scan had the maximal clinical benefit. The authors should be commended for exploring the performance of multiple models in such a large cohort of men, as these models often derive form single center series and are seldom externally validated.

As always in medicine, when prediction of a clinical event is evaluated (synchronous bone metastases in this case), the bar is set where the clinician thinks the information of the exam outweighs the risks and costs of the exam. No urologist would argue that a bone scan is needed for a patient with de novo ISUP IV, cT3 prostate cancer with an initial PSA of 36 ng/ml. However, things get more complicated when evaluating intermediate risk patients. For these patients, one must discuss whether a rigid threshold to prompt a bone scan makes truly sense.

First, one must recognize that the explored models in the current study used mainly three variables: PSA at diagnosis, clinical T score (based on digital rectal examination) and Gleason score; the AUA and NCCN included also the percentage of positive cores. Although these parameters remain the mainstay in the "definition" and characterization of PCa, today in 2022 they clearly give a limited picture of the patients' PCa.

It is known that DRE is a potent diagnostic tool, however it suffers from major interobserver variability [2]. Gleason score has today been replaced by the ISUP score, and the percentage of pattern 4 as well as the presence of histologies as cribriform pattern on biopsy play a role in defining the aggressiveness of the disease [3]. Even the absolute value of PSA can be questioned, if considered without information of prostate volume [4, 5]. On the other hand, multiparametrric MRI has aggressively entered the game arena of PCa diagnosis and is now considered standard of care [6]. Its implications are numerous and its role in the improvement of initial diagnostic accuracy is undoubted [7]. Moreover, targeted biopsies play a key role in defining PCa grade and the number of positive biopsies also is identified as a significant predictive factor of final pathology [8]. Finally, biomarkers are also being increasingly used, in order to define those patients at risk of clinically significant PCa [9, 10].

Therefore, although the current study helps compare available models when deciding to perform or not a bone scan, our feeling is that considering PSA, DRE and Gleason score alone is more than insufficient. We believe that if a patient requires treatment, then a bone scan should be performed, as its costs and risk are outweighed by far by the crucial information the exam can give in case of positive results. On the other hand, if the cancer harbored by the patient does not require treatment, then a bone scan is probably not required.

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AUTHOR CONTRIBUTIONS

SA and CDN have given substantial contributions to the conception and the design of the manuscript. SA drafted the manuscript, CDN revised it critically.

COMPETING INTERESTS

The authors declare no competing interests.

ADDITIONAL INFORMATION

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