PSMA PET/CT and Therapy Response Evaluation in Metastatic Prostate Cancer: Is It Time to Surpass the Old Way?

TO THE EDITOR: I have read with great interest the paper recently published in your journal entitled, "^{68}Ga-PSMA PET/CT for Response Assessment and Outcome Prediction in Metastatic Prostate Cancer Patients Treated with Taxane-based Chemotherapy" by Shagera et al. (*1*). The paper is very interesting and thought-provoking.

First, it is useful to standardize the criteria for therapy response evaluation, and although much has been accomplished in this regard through the European Organization for Research and Treatment of Cancer criteria (*2*), PERCIST (*3*), and other methods, the key to evaluating treatment response may perhaps be evaluation of the entire tumor volume expressing prostate-specific membrane antigen (PSMA), either for hormone therapies or for the taxane-based regimen. The entire tumor volume expressing PSMA can easily and reproducibly be evaluated using specific software, without focusing on a few selected lesions. Moreover, response-monitoring data similar in terms of survival outcome have already been reported for other radiopharmaceutical therapeutic agents, such as ^{223}Ra-dichloride (*4*), and data from Anton et al. (*5*) and Simsek et al. (*6*) found that total volume PSMA expression on PET is linked to the response to taxane-based therapy.

Second, careful attention should be given to disease extent at the bone level, to avoid an overestimation that can be linked to a poor prognosis rather than a better prognosis. Again, it is important to have a specific tool to detect bone metastases and monitor their changes during therapy. One such tool has already been tested (*7*) but is not yet available worldwide.

Finally, the authors concluded that PSMA PET/CT can be useful for assessing response early during therapy, but the available studies have not used this assessment until the end of therapy (*5,6*). Therefore, as correctly stated by the authors, prospective trials are needed to test the value of a PSMA-based response soon (4–8 wk) after the start of chemotherapy. I believe that PSMA PET/CT in the evaluation of therapy response will surpass the limits of morphologic imaging and is ready to move forward. Furthermore, PSMA PET/CT would also be useful in guiding the introduction of ^{177}Lu-PSMA–based therapy, which has an important role in the early phase of metastatic disease as recently demonstrated by the PSMAfore trial (*8*).

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