Re: Diagnostic Accuracy of Ga-68-HBED-CC-PSMA-ligand-PET/CT Before Salvage Lymph Node Dissection for Recurrent Prostate Cancer
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Experts’ summary:
This study reports results for targeted versus extended salvage lymphadenectomy after prostate-specific membrane antigen–targeted positron emission tomography/computed tomography (PSMA-PET/CT) in 30 men with biochemical recurrence of prostate cancer after primary therapy. All men had suspicion of at least one lymph node metastasis. Exclusion criteria were bone or visceral metastases and ongoing androgen deprivation therapy. The median prostate-specific antigen at the time of surgery was 1.7 ng/ml. In the main-region analysis, PSMA imaging had a positive predictive value of 100% and a negative predictive value of 89%. For anatomic subregions, the accuracy remained high at 94.1%. The majority of false-negative subregions were adjacent to true-positive subregions. According to in-depth histopathologic analyses, tumor deposits of ≥4.5 mm are needed to reach PSMA-PET detection rates of 90%.

Experts’ comments:
PSMA PET tracers such as 68Ga-PSMA-11 have clearly improved the diagnostic pathways in prostate cancer [1]. PSMA-PET/CT provides excellent specificity and must be considered the new gold standard for imaging of men with biochemical recurrence. In the context of salvage lymphadenectomy, PSMA tracers were superior to choline in a recent prospective multi-institutional analysis [2]. In primary staging for high-risk disease, the value of PSMA-PET-imaging is promising, but this will remain unconfirmed until prospective studies are reported.

A general challenge for PSMA imaging is prostate cancers with little or no PSMA expression; fortunately, these are rare. Ligand-specific challenges for 68Ga-PSMA-11 are evaluation of tumor foci in close proximity to the bladder because of urinary excretion of PSMA-11 and the availability of the radionuclide, which is limited by generator capacity and the short half-life of 68Ga, prohibiting delivery to distant PET centers. In the future, 18F-labeled PSMA tracers such as PSMA-1007 may improve availability, since they can be produced in cyclotrons in large amounts and transferred to satellite institutions [3]. Favorably, PSMA-1007 also exhibits better image resolution and non-urinary excretion. Besides, PSMA-PET/magnetic resonance imaging seems to be of promising value [4].

If salvage therapy based on PSMA imaging is initiated in carefully selected patients, there is controversy with regard to the extent of treatment. In our opinion, the data available today suggest that bilateral template-based surgery should be performed to overcome the limitations of PSMA imaging in detecting micrometastases [5]. Similarly, radiotherapy targeting of PET-avid metastases should include some form of treatment of the pelvic lymph nodes, optimally as whole-pelvis radiotherapy or at least covering neighboring subregions. It is still unknown which treatment modalities provide the most patient benefit, but the first studies testing multimodal therapy are under way and retrospective data support combined treatment for optimal local control and improved next-relapse–free survival [6].

Conflicts of interest: The authors have nothing to disclose.

References
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