Re: ^{68}Ga-Labeled Prostate-specific Membrane Antigen Ligand Positron Emission Tomography/Computed Tomography for Prostate Cancer: A Systematic Review and Meta-analysis

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Eur Urol Focus 2018;4:686–93

Experts' summary:

The authors present a meta-analysis of the utility of positron emission tomography (PET)/computed tomography (CT) with Ga-labelled prostate-specific membrane antigen (PSMA) ligand in the initial staging and restaging of prostate cancer. In the staging studies, PET/CT detected PSMA-avid sites in 74% of patients, including 60% within the prostate, 4% in regional nodes, and 10% in multiple sites. Pooled sensitivity (based on histopathology) was 70% and pooled specificity was 84%. Pooled sensitivity for lymph node metastases was 61% and specificity was 97%. In the restaging studies, PET-avid sites were identified in 81% of patients; 10% in prostate bed, 22% in pelvic lymph nodes, 13% in distant organs, and 36% in multiple sites. 50% of patients with prostate-specific antigen (PSA) of 0.2–0.5 ng/ml, had a positive scan and 53% with a PSA of 0.5–1.0 ng/ml.

Experts' comments:

PSMA PET/CT can help in identification and localisation of the primary tumour and of early metastatic spread. As Ga-PSMA PET/CT surpasses all other imaging modalities to date, it will continue to challenge the way we currently approach management decisions. It has stimulated trials on the role of primary local therapy (either radiation or radical prostatectomy) for low-volume oligometastatic disease that can be excised or treated within a radiation field. In the restaging setting, Ga-PSMA PET/CT challenges the role of early salvage radiotherapy to the prostate bed, as it has now been proven that many recurrences lie outside the prostate bed field, and has already led to several trials examining the utility of metastasis-directed therapy. A recent study demonstrated that stereotactic radiotherapy to regional nodes and/or bony sites detected on PSMA PET/CT revealed no in-field recurrences, with minimal toxicity. However, only 31.9% of patients had durable PSA responses, suggesting that micrometastases smaller than the minimal resolution of PET/CT were present [1]. This was previously highlighted in a study by van Leeuwen et al. [2] in which PSMA PET/CT failed to detect any node <2 mm. Similar results have been seen for salvage pelvic node dissection, with early recurrence noted in 25% of patients within 1 yr after surgery [3]. Prostate bed detection is problematic owing to the inability of PET/CT alone to detect small recurrences, compounded by overlying tracer activity in the bladder. It is therefore important to look at the role of magnetic resonance imaging to potentially supplement PSMA PET/CT in this setting. Lastly, ^{68}Ga-PSMA PET/CT continues to open promising avenues for therapeutics in end-stage castration-resistant prostate cancer using ^{177}Lu-PSMA radioligand therapy [4]. We are entering a new era of diagnostics that will only improve the precision of the treatment we deliver to our patients but we do need to recognise the limitations, namely that PET PSMA will not detect all lesions especially those of small size.

Conflicts of interest: The author has nothing to disclose.

References

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[4] Heck MM, Tauber R, Schwaiger S, et al. Treatment outcome, toxicity, and predictive factors for radioligand therapy with ^{177}Lu-PSMA-I&T in metastatic castration resistant prostate cancer. Eur Urol 2019;75:920–6.

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Re: Effect of Adding Docetaxel to Androgen-Deprivation Therapy in Patients with High-risk Prostate Cancer with Rising Prostate-specific Antigen Levels After Primary Local Therapy A Randomized Clinical Trial

Oudard S, Latorzeff I, Caty A, et al

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Experts' summary:

Oudard et al. conducted an open-label, multicentre, phase 3 trial comparing the effect of adding docetaxel to standard androgen deprivation therapy (ADT) for patients with prostate-specific antigen (PSA) recurrence after primary local therapy and no radiographic sign of distant metastases who were considered to be at high risk of developing metastatic disease on the basis of Gleason score and PSA velocity. The primary endpoint was PSA progression-free survival (PFS). In total, 254 patients were enrolled between June 2003 and September 2007. After median follow-up of 30.0 mo, the authors found a median PSA-PFS of 19.3 mo for the ADT arm compared to 20.3 mo in the chemohormonal combination therapy arm (hazard ratio [HR] 0.85, 95%