Prostate cancer staging with 68Ga-PSMA has been shown to be highly effective in the detection of prostate cancer cells in regional nodes and distant metastatic sites as well as early detection of site of relapse following definitive treatment of the disease.

Lesions suspicious for metastatic prostate cancer present with high tumour to background contrast resulting in superior detection rate even when the level of PSA is low.

References


Why choose $^{68}$Ga-PSMA for prostate cancer staging?

**Tumour specific**

- Prostate specific membrane antigen is a cell surface protein over-expressed in prostate cancer cells compared to benign prostatic tissue.
- $^{68}$Ga-PSMA detects presence of prostate cancer cells directly, rather than indirect indicators of disease such as increased bone turnover (bone scan) or enlarged lymph node.

**High sensitivity and specificity**

- Superior tumour to background contrast compared to other molecular tracers (e.g. $^{18}$F-Choline) allows for detection of disease in small regional nodes and distant disease in bones or visceral organs (see Figure 1).
- Early detection of site of recurrence in patients with low level PSA rise who have had definitive therapy (see Table 1).
- Concurrent diagnostic CT scan of the chest, abdomen and pelvis allows anatomical correlation to foci of abnormal PSMA uptake, significantly increasing sensitivity and specificity of the examination.
- Fusion of PET images and MRI prostate can be performed to increase confidence in MRI interpretation of local disease extent (see Fig 2).

**Comparable cost**

- Similar cost to patients when compared with combined $^{18}$F-NaF or $^{99}$M-Tc MDP bone scan and diagnostic CT of the chest, abdomen and pelvis.

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**Patient convenience**

- Imaging commences 45 minutes after injection, acquisition phase of 20 minutes, total appointment time of approx 90 minutes.
- "One-stop staging examinations" with prostate MRI performed on the same day as $^{68}$Ga-PSMA to completely stage both local and distant disease for patients with newly diagnosed high-risk prostate cancer.