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PSMA Radioguided Surgery: a promising utility

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No doubt, in the field of prostate cancer, few recent topics have been the subject of as much captivation and discussion as PSMA PET imaging. The body of literature regarding this imaging modality, the larger part with the use of 68Ga-PSMA-HBED-CC as a radiotracer, is unceasingly growing[1], including data to support the superior accuracy of PSMA PET/CT for lymph node staging in prostate cancer[2], and in identifying patients unlikely to benefit from radiotherapy post-radical prostatectomy[3].

In this paper, Rauscher et al. present their data on the use of an 111In-PSMA-I&T tracer during salvage lymphadenectomy for recurrent prostate cancer[4]. 111In-PSMA-I&T, in a previous study by the same research group, has already proven to be a high affinity radiotracer, with enhanced internalization efficiency compared to other molecules, and significant accumulation in prostate cancer tissue[5].

In the current pilot study, a salvage lymphadenectomy was performed in 31 patients with recurrent prostate cancer after primary treatment. Using intraoperative γ-probe measurements and comparing these to the histopathological results of the specimens, the authors found that these correlated well, resulting in a sensitivity of 92.3%, a specificity of 93.5% and an accuracy of 93.1%, with a positive predictive value (PPV) of 88.9% and a negative predictive value of 95.6%.

These also findings translated well in PSA response after surgery. A postoperative PSA reduction >50% was observed in 76.7% of patients and a reduction >90% in 53.3% of patients. 33% of patients received further cancer-specific treatment at median 125 days after surgery. The remaining patients remained free of treatment at a median follow-up of 337 days.

The study sample in this study is relatively small and the analysis was conducted retrospectively. These are obvious drawbacks; nonetheless the intra- and postoperative results presented here are promising. However, as the authors of the present paper point out, careful patient selection is important, and the follow-up period for these patients is still quite short. We will need to wait several years to compare this series' outcomes to the ones reported in the literature concerning salvage lymphadenectomy without prior PSMA PET CT. These data were recently published in a review by Heidenreich et al. They reported a 5-year biochemical recurrence-free survival of 19-25% after salvage lymphadenectomy without the use of PSMA PET, and a median time to systemic treatment of 20-30 months[6].

As physicians, of course, our primary goal is to do the best for our patients. Sure, we would like to believe aggressively treating every single lesion now made visible with this new imaging modality will come to the patient's benefit. It is certainly tempting to chase these colourful lesions now demonstrated so nicely by PSMA PET/CT. But we owe it to ourselves as scientists to gather the facts and the evidence to determine if our current course of action makes sense or not. PSMA PET radio-guided surgery is no exception to the rule, and only the evidence will tell what exact role this new technology is to have in the treatment of prostate cancer. Can we justify putting patients through surgical procedures with their associated morbidity? Do we not need to define oligometastatic disease in the molecular imaging era? Should we then start using PSMA PET in primary staging of prostate cancer patients? What of those tumours that don't express PSMA? Can this approach be offered laparoscopically or robotically?

It seems the introduction of PSMA PET has, instead of giving us all the answers, given rise to even more questions.

Conflicts of Interest

None

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