

POSTER PRESENTATION

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# The value of $^{68}\text{Ga}$ -PSMA enhanced PET-CT and MR-PET in patients with biochemical recurrent prostate cancer

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## Aim of study

In patients with prostate cancer increased levels of PSMA can be measured. Recently a new tracer,  $^{68}\text{Ga}$ -PSMA, was developed as a specific marker for hybrid imaging (PET/CT, MR-PET). In this study we evaluated the accuracy of  $^{68}\text{Ga}$ -PSMA in patients with rising PSA after radical prostatectomy, so called "biochemical recurrent prostate cancer" (BRPC).

## Materials and methods

A total of 322 patients with BRPC underwent either a PET-CT or a MR-PET examination (Siemens Biograph mMR) after injection of about 150 mBq  $^{68}\text{Ga}$ -PSMA. Images were evaluated in consensus by one experienced nuclear medicine physician and one radiologist. Pelvic lymphnode dissection was performed in most of the patients according to a predefined template with 8 fields. Lymphnode involvement was evaluated according to a 5 point scale with a patient- and a field-based analysis. These findings were stratified according to PSA-values.

## Results

Four patients were excluded from the study for different reasons. Sensitivity for detection of recurrence was 95.7 % for PSA-values  $\geq 2$  ng/ml, 81.4 % for PSA-values of 1-2 ng/ml, 76% for PSA-values 0.5-1 ng/ml, and 51% for PSA values  $\leq 0.5$  ng/ml. In comparison to the MR-images alone MR-PET was of superior diagnostic value.

## Conclusions

MR-PET using  $^{68}\text{Ga}$ -PSMA is a sensitive and highly accurate technique for the diagnosis of biochemical

recurrence of prostate cancer after radical prostatectomy. It yields high diagnostic performance at relatively low PSA-values.

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