1221 Clinical results of salvage PSMA-radioguided surgery in recurrent prostate cancer

Eur Urol Suppl 2018; 17(2);e1708

Horn T. [1], Rauscher I. [2], Eiber M. [2], Wester H.J. [3], Schottelius M. [3], Heck M.M. [1], Gschwend J.E. [1], Maurer T. [1]

[1]Klinikum rechts der Isar, Dept. of Urology, Munich, Germany, [2]Klinikum rechts der Isar, Dept. of Nuclear Medicine, Munich, Germany, [3]Technische Universität München, Institute of Pharmaceutical Radiochemistry, Garching, Germany

Introduction & Objectives: Positron-emission tomography (PET) directed against the prostate-specific membrane antigen (PSMA) allows detection of even small and/or atypically localized metastatic prostate cancer (PC) lesions at low PSA values. Salvage surgery for recurrent PC may be beneficial in certain subsets of patients. To facilitate intraoperative detection of PC lesions, we recently introduced PSMA-targeted radioguided surgery (PSMA-RGS) using gamma-emitting PSMA-ligands for intraoperative detection of metastatic lesions. In this retrospective analysis we present follow-up data of the first 121 patients.

Materials & Methods: 121 consecutive patients with a status post radical prostatectomy and a median PSA of 1.13 ng/ml (range 0-13,9 ng/ml) who showed PC recurrence either in lymph nodes or in the region of the seminal vesicles on ^{68}Ga-PSMA PET underwent ^{111}In- or ^{99m}Tc-based PSMA-RGS between April 2014 and May 2017. Best PSA response without additional treatment and rate of complete biochemical response (cBR; PSA < 0.2ng/ml) was determined 6-16 weeks following PSMA-RGS. Biochemical recurrence-free survival (bRFS; period with PSA < 0.2ng/ml without further treatment), PC-specific treatment-free survival and postoperative complications according to Clavien-Dindo were evaluated.

Results: In 120/121 pts (99.2%) intraoperative detection and removal of metastatic PC lesions was possible. Eleven pts suffered from Clavien grade III complications within 90d from surgery. One patient died six days postoperatively from a pulmonary embolism.
In 75 out of 115 (65.2%) pts cBR was achieved. cBR was more likely in patients with a preoperative PSA level < 1.13 (76.3% vs. 52.7%) or a single anatomical location of recurrence (71.9% vs. 58.8%). Median bRFS was 5.1 months in all patients and 22.6 months in patients with cBR at first follow-up. A significantly longer bRFS was achieved in pts with a preoperative PSA < 1.13 ng/ml (median 14.9 vs 3.2 months, p=0.02). In pts with a single compared to multiple location of recurrence we observed a trend towards a longer median bRFS (8.2 months vs. 3.5 months, p=0.08). 34 of 118 patients received further treatment after median 4 months, the other patients remained free of further treatment at a median of 7.5 months.

Conclusions: PSMA-RGS enhances intraoperative detection of metastatic lesions during salvage surgery with an acceptable rate of high grade complications. It leads to a remarkable interval of bRFS and treatment-free survival in a subset of patients. Our data indicates that patient selection for PSMA-RGS is crucial as bRFS was highest in patients with a low preoperative PSA and a single anatomical site of recurrence.