

Possible role of circulating tumour cells (CTCs) for outcome prediction of salvage lymph node dissection in patients with early prostate cancer recurrence

Sophie Knipper¹

Sabine Riethdorf², Stefan Werner², Derya Tilki³, Markus Graefen¹, Klaus Pantel² and Tobias Maurer³

¹ Martini-Klinik Prostate Cancer Center, University Hospital Hamburg-Eppendorf, Hamburg, Germany

² Department of Tumour Biology, University Hospital Hamburg-Eppendorf, Hamburg, Germany

³ Martini-Klinik Prostate Cancer Center and Department of Urology, University Hospital Hamburg-Eppendorf, Hamburg, Germany

Background & objectives

In recent years, promising oncological results have been reported for salvage lymph node dissection (SLND) with PSMA radioguided surgery (PSMA-RGS) in patients with prostate cancer (PCa) recurrence. However, although PSMA PET shows only limited loco-regional disease approximately one third of patients show incomplete PSA responses after surgical removal of PSMA PET positive lesions. The objective of this feasibility study was to assess circulating tumour cell (CTC) measurements to identify suitable patients for SLND and to predict oncological response rates in SLND patients

Methods

20 consecutive patients treated with PSMA-RGS in 04-07/2019 for PSMA PET positive LN recurrent PCa were retrospectively evaluated. CTC count was assessed using the CellSearch system. Biochemical recurrence (BCR)-free survival (BFS) and therapy-free survival (TFS) were evaluated using Kaplan-Meier.

Results

Overall, 3 (15%) patients were CTC positive. Postoperatively, CTC positive patients had more pathologically positive LN (8 vs. 2 positive LN in CTC negative patients) while no difference in overall LN count was observed. During the median follow-up of 10.1 months, 14 patients experienced BCR and 5 patients received further therapy. In Kaplan-Meier analyses, median BFS was 1.4 vs. 4.3 months and median TFS was 10.3 months vs. not reached in CTC positive vs. negative patients, respectively ($p=0.018$, $p=0.2$). Main limitation is the retrospective design and short follow-up.

Conclusion

CTC positive patients seem to have worse clinical, pathological and short-term oncological outcomes. Therefore, we believe that biomarkers may be promising tools which will hopefully guide future treatment decision making prior to local salvage therapy. A prospective study in this patient cohort is currently recruiting (BioPoP, NCT 04324983).