simfo
Spezielle Immunologie
Forschung + Entwicklung GmbH

simfo GmbH · Kurpromenade 2 · 95448 Bayreuth

in der Arbeitsgemeinschaft
Transfusionsmedizinisches Zentrum
Bayreuth (TZB)

Frequent expression of PDL-1 on circulating epithelial tumor cells (CETCs) could be a new therapeutic target in breast cancer patients

M. Pizon[1], *D. Zimon*[1], *U. Pachmann*[2], *K. Pachmann*[2]

Background: Analysis of CETCs is a promising diagnostic field for estimating the risk for metastatic relapse and progression. The phenotypic characterization of CETCs may provide real time information and can be of great value in therapy monitoring. Programmed cell death ligand 1 (PDL-1) is an important protein frequently upregulated in a number of different cancers. Cancer cells expressing PDL-1 inhibit immune-modulatory T-cell activation allowing disease progression. Therefore this immune checkpoint has emerged as important target for immune therapy. The purpose of the current study was to identify potential patients who may benefit from PDL-1 targeted immunotherapies.

Methods: CETCs were determined from blood of 22 (69%) non-metastatic and 10 (31%) metastatic breast cancer patients. The number of vital CETCs and the expression of PDL-1 were investigated using the maintrac® method.

Results: PDL-1 expressing CETCs were detected in 94% of breast cancer patients; however the fraction varied between 0 to 100% in individual patients. There was no association between the number of PDL-1 positive CETCs and obtaining chemotherapy. Interestingly, we found a relationship between the numbers of PDL-1 positive CETCs and progression of cancer disease. Patients with metastatic disease had more PDL-1 positive CETCs as compared to patients without metastasis.

Conclusion: Breast cancer patients harbour PDL-1 positive CETCs that have the capacity to block the immune system and therefore may be a promising target for anticancer therapies. Monitoring the number of PDL-1 positive CETCs could reflect individual patient's response for an anti-PDL-1 therapy.