Dysregulation of immune checkpoint proteins in newly-diagnosed early breast cancer patients

BL Rapport 1,2, HC Steel 1, S Nayler 1, C Benn 1, T Smit 1, L Heymans 1,2, AJ Theron 1, TH Hatshwayo 1, LL Kwioffe 1, R Anderson 3

1 Department of Immunology, Faculty of Health Sciences, University of Pretoria, corner Doctor Savage Road and Bophelo Road, Pretoria 0002, South Africa.
2 The Medical Oncology Centre of Rosebank, 129 Oxford Road, Saxonwold 2196, Johannesburg, South Africa.
3 Drs Gritzman & Thatcher Inc Laboratories & Wits Donald Gordon Medical Centre, 4 Main Street, Bordeaux, Randburg, South Africa.
4 Netcare Breast Care Centre, 1 Jan Smuts Ave, Johannesburg, South Africa.

Methods

The circulating levels of 16 immune checkpoint-related proteins panel (BTLA, GITR, 395TL, HVEM, LAG-3, PD-1, PD-L1, TIM-3, CD27, CD28, CD80, CD86, EDN1, ICOS, LAG-3 and CTLA-4) as well as chemokines (CCL2, CCL5, CXCL1, CXCL9, CXCL10, CXCL12) and cytokines (IL-1α, IL-1β, IL-6, IL-8, IL-12, IL-17A, IL-22, TNFα, TNFβ, IFNγ) were measured in 98 early breast cancer patients (gender and age). All patients were followed for 2 years.

Results

Patient characteristics are shown in table 1. Comparison of plasma levels of immune checkpoints, chemokines, and cytokines between breast cancer patients and healthy controls are found in table 2.

Conclusion

The circulating levels of immune checkpoint proteins were dysregulated in early breast cancer patients compared to healthy controls.