Zahra Al-Qarni et al., J Blood Disord Transfus 2016, 7:2(Suppl)
http://dx.doi.org/10.4172/2155-9864.C1.013

Interrelationships among regulatory cells in patients with lymphoproliferative disorders

Zahra Al-Qarni and **Mohamed-Rachid Boulassel**
Sultan Qaboos University, Oman

Different cell subsets which are endowed with potent immune regulatory properties have recently been identified. They are thought to play key roles in antitumor immunity and may have a prognostic value in certain hematological malignancies. However, little is known about the interrelationships among these regulatory cells. Herein, we prospectively studied levels of regulatory T-cells (Tregs), regulatory B-cells (Bregs) and invariant natural killer T-cells (iNKT) in blood and marrow of patients with lymphoproliferative disorders (LPD) taking rituximab. Using 10-color flow cytometry, Tregs were phenotypically identified as $CD3^+$, $CD4^+$, $CD25^+$, $CD127^{low}$ and the intra-cellular staining of $FoxP3^+$ while Bregs as $CD19^+$, $CD24^{high}$ and $CD38^{high}$. iNKT cells were characterized by the positive-staining of Va24Ja18 T cell receptor alpha chain, along with $CD3^+$ and CD4+ markers. Compared to normal controls, LPD patients exhibited significantly lower levels of circulating Tregs (1.1% ± 0.17 versus 0.75%±0.07; P=0.009, Mann-Whitney U test). Similarly, levels of circulating $CD4^+$iNKT cells in patients (0.22%±0.46) were significantly lower compared to controls (0.35%±0.48; P=0.005). Levels of circulating Bregs, however, were similar among study groups. The ratio Tregs/Bregs was significantly lower in patients compared to controls (P=0.009). Similar trends were also evidenced for Tregs/$CD4^+$iNKT and $CD4^+$iNKT/Bregs ratios (P=0.06). Interestingly, no significant differences in levels of Tregs, Bregs and $CD4^+$iNKT cells were found between the blood and marrow. Although, the majority of associations did not reach statistical significance, a negative correlation was noticed between Tregs/Bregs ratio and levels of $CD4^+$iNKT (r=-0.58, P=0.008). Collectively, these findings provide further advance the interrelationships among regulatory cells and provide new insights into their quantitative alterations in LPD patients.

Biography

Zahra Al-Qarni is a research student in Sultan Qaboos University, Oman. Her research interests include various fields in Clinical Sciences including Blood Disorders & Breast Cancer.

u093276@student.squ.edu.om

Notes: