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Alteration of immune cellular compositions in the peripheral blood of patients with systemic lupus erythematosus

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The purpose of this study was to visualize the difference of immune cellular compositions in peripheral blood of patients with systemic lupus erythematosus (SLE) and healthy controls. Immune cells in the peripheral blood were obtained from 32 SLE patients and 16 healthy subjects. Circulating granulocytes, basophils, dendritic cells (DCs), monocytes, T cells, B cells, natural killer (NK) cells, $CD127^+$ innate lymphoid cells (ILCs) and their subpopulations were identified by flow cytometry. The frequencies of T cells, $CD4^+$ T cells, T regulatory cells (Tregs), $CD127^+CD8^+$ T, $CD56^+CD8^+$ T, $CD25^{hi}$ B cells, NK cells, $CD16^+$ NK, $CD16^{bright}$ $CD56^{dim}$ NK cells and $CD127^+$ ILCs were decreased in SLE compared to healthy controls, while the proportion of granulocytes, $CD8^+$ T cells, $CD25^+$ DN T cells, CD16- NK, CD16-CD56dim NK cells and $CD4^+CD127^+$ ILCs elevated in SLE. High expression of HLA-DR was identified on T cell subsets in SLE patients. Besides, the expressions of HLA-DR, CD11c and CD25 were higher on $CD56^{dim}$ and $CD56^{bright}$ NK cells in SLE. The proportion of B cells was negatively related with serum C3/C4 level, and was higher in the patients with anti-ribosomal (Rib) antibody positive. The frequency of $CD25^+CD56^{bright}$ NK was positively related with SLE disease activity index 2000 (SLEDAI-2k), and $CD16^+$ NK cells was positively related with immunoglobulin G (IgG) while CD16- NK cells was negatively correlated with IgG. Additionally, the frequency of $CD127^+CD8^+$ T cells was higher in the patients with mucocutaneous manifestations and in the patients with anti-ribonucleoprotein (RNP) antibody positive. The proportion of $HLA\text{-}DR^+CD56^{bright}$ NK cells was lower in the patients with the presence of anti-Sjögren's-syndrome-related antigen A (SSA) antibody. Besides, the proportion of $CD16^+CD8^+$ T cells was higher in the patients with presence of Coombs test. A comprehensive peripheral immunophenotypic analysis including myeloid cells and lymphoid cells was performed and diverse abnormalities and alterations of peripheral immune cells were found in SLE patients.

Biography

Xianming Mo is a Professor of Internal Medicine and acts as Director of Laboratory of Stem Cell Biology, State Key Laboratory of Biotherapy, and West China Hospital, Sichuan University. He obtained his Medical Degree from North Sichuan Medical College. He was then trained in Pathology and Master of Medicine in West China University of Medical Sciences. After obtaining a PhD Degree in Peking Union Medical College, he moved to Humboldt-Universität zu Berlin and then to Medical College of Georgia as a Postdoctoral Fellow. Then, he became a Junior Faculty in Medical College of Georgia and Senior Scientist in Max Delbrück Center for Molecular Medicine. In 2006, he returned back to West China Hospital.

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