
Background: Conflicting evidence exists regarding the proportion and function of CD4+CD25+FOXP3+ Treg Cells in the peripheral blood (PB) of patients with rheumatoid arthritis (RA). We aimed to determine whether Treg cells are defective in Chinese RA patients.

Methods: Levels of CD4+CD25+FOXP3+ Treg cells in the peripheral blood of 224 patients with RA and 38 healthy controls were detected by flow cytometry. The expression of CTLA-4, GITR,Helios and ICOS was also evaluated. Clinical parameters, including DAS28-ESR, the levels of anti-CCP, IgG and IgM were tested. Correlations of Treg cells were systematically analyzed.

Results: Compared to the healthy controls, active RA patients had significantly higher frequency of CD4+CD25+FOXP3+ Treg cells (P < 0.01). Furthermore, the CD4+CD25+FOXP3+ Treg cells expressed lower CTLA4 (P < 0.01) and lower IL10 (P < 0.05) in RA patients compared with healthy controls in vitro stimulation assay. We also found the proportions of CD4+CD25+FOXP3+ Treg cells were significantly higher in Anti-CCP "patients compared Anti-CCP patients (P < 0.01). The frequency of CD4+CD25+FOXP3+ Treg cells in RA patients was positively correlated with DAS28 ESR(r = 0.135, P = 0.043), the levels of serum Anti-CCP(r = 0.239, P = 0.001),IgG(r = 0.239, P < 0.001) and IgM(r = 0.168, P = 0.015).

Conclusion: We showed higher frequency of CD4+CD25+FOXP3+ Treg cells in PB of RA patients, of which the suppressive capacity was defective.

REFERENCES