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Th2 and Th17 Subsets in the Circulation of Psoriasis Patients

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Abstract : Background: Psoriasis is a chronic inflammatory disease of the skin that is mediated by crosstalk between keratinocytes and immune cells, especially CD4+ T helper (Th) cells. To date, psoriasis is established as a T helper 17 (Th17) cell-mediated inflammatory process driven by the over-expression of Th17. However, the role of other CD4+T helper cells is rather controversial. Objective: Our study, thereby, aimed to characterize and analyze T cell subsets in the circulating blood of psoriasis patients and compare them to healthy controls. Methods: Peripheral blood mononuclear cells were isolated from the participants and stained with fluorescent dye-conjugated monoclonal antibodies specific for intracellular cytokines, including interferon-gamma (IFN- γ), interleukin (IL-4), IL-17 and forkhead box P3 (FOXP3), that can be used to define T helper 1 (Th1) cells, T helper 2 (Th2), T helper 17 (Th17) and regulatory T cells (Treg) respectively. Results: We found that the numbers of Th2 (59.6% ± 17.0) and Th17 (4.0% ± 2.0) cells in the circulating blood of psoriasis patients were significantly higher than those of the healthy controls (p= 0.0007 and 0.0013 respectively). In contrast, the numbers of Th1 and Treg cells were not significantly different between psoriasis patients and healthy controls (p= 0.0593 and 0.8518, respectively). Additionally, when adjusting these numbers of Th cells to Treg, we observed a similar trend that the ratio of Th2/Treg and Th17/Treg also elevated (p = 0.0007 and 0.0047, respectively). Conclusion: Taken together, our results suggest an imbalanced T exhibit toward the Th2 and Th17 skewed-immune responses in psoriasis patients.

Keywords : psoriasis, Th cell subsets, Th2 cells, Th17 cells, Treg cells
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