

## A possible pathogenic role of CD4+CD25+ T-regulatory cells in psoriasis

Iman H Shehata<sup>1</sup>, Tarek M Elghandour

Department of Microbiology & Immunology, Faculty of Medicine, Ain Shams University, Cairo, Egypt.

PMID: 18689278

Psoriasis is a chronic autoimmune inflammatory disease of the skin with strong genetic and environmental risk factors. T lymphocytes are thought to be central in its pathogenesis. CD4+CD25+ T regulatory (T reg) cells suppress inflammatory responses triggered by T effector cells. Interleukin-10 (IL-10) is an important anti-inflammatory and immunosuppressive cytokine with major impact on regulatory mechanisms in the skin. This study aimed at determining the role of CD4+CD25+ T reg cells and IL-10 in the pathogenesis of psoriasis and evaluating the effect of ultraviolet type A or B phototherapy (PUVA or NB-UVB) on both of them. The study was conducted on 20 patients suffering from severe psoriasis and 11 apparently healthy volunteers who served as controls. Clinical evaluation of disease severity was expressed by means of the Psoriasis Area and Severity Index (PASI) score. Assessment of the frequency of CD4+CD25+ T reg cells and IL-10 mRNA gene expression in peripheral blood mononuclear cells (PBMCs) was done by flowcytometry and reverse transcriptase-polymerase chain reaction (RT-PCR) respectively. No statistical difference was found between numbers of CD4+CD25+ T reg cells in peripheral blood of psoriasis patients and controls. However, IL-10 mRNA gene expression in PBMCs of untreated psoriatic patients showed significantly decreased levels in comparison to controls. There was no statistically significant difference in T reg cell numbers before and after phototherapy despite the marked clinical improvement of psoriatic patients as assessed by PASI score. On the other hand IL-10 mRNA gene expression increased markedly after successful ultraviolet therapy. In conclusion, the percent of T reg cells are apparently normal in peripheral blood of psoriasis patients. Studies that assess the suppressive function of T reg cells in psoriatic skin are recommended. IL-10 seems to play a crucial role in mediating UV-induced immunosuppression and could be used as a prognostic marker in follow up of psoriatic patients.