

Emiliano Antiga,^{1,2} Marzia Caproni,¹ Elena Del Bianco,¹ Annegret Kuhn,^{3,4} Paolo Fabbri¹

¹Department of Dermatological Sciences, University of Florence, Florence, Italy

²Department of Clinical Physiopathology, University of Florence, Florence, Italy

³Division of Immunogenetics, Tumorimmunology Program, German Cancer Research Center, Heidelberg, Germany

⁴Department of Dermatology, University of Muenster, Muenster, Germany

Analysis of TGF- β and IL-10 serum levels in patients with cutaneous lupus erythematosus

Aims: To investigate serum levels of the regulatory cytokines transforming growth factor-beta (TGF- β) and interleukin-10 (IL-10) in patients with cutaneous lupus erythematosus (CLE) and to compare with the serum levels in other autoimmune and inflammatory skin diseases and healthy controls (HC).

Methods: Serum samples were obtained from 10 patients with CLE, 10 with dermatomyositis (DM), 10 with psoriasis (PSO), 10 with atopic dermatitis (AD), and from 10 HC. Solid phase enzyme-linked immunosorbent assay kits were used to determine TGF- β and IL-10 (R&D Systems, Minneapolis, MN, USA) serum levels, according to the manufacturers instructions.

Results: TGF- β serum levels were significantly lower in patients with CLE compared to patients with PSO and HC (30.47 ± 5.32 , 43.22 ± 7.54 , and 42.51 ± 6.21 , respectively; CLE vs PSO: $p < 0.05$; CLE vs HC: $p < 0.05$), while no differences were found between CLE, DM, and AD (28.75 ± 6.97 and 29.38 ± 7.43 , respectively).

IL-10 serum levels were similar both in CLE and DM patients (48.32 ± 29.14 and 52.73 ± 32.41 , respectively); in contrast, PSO, AD, and HC showed significantly higher IL-10 serum levels than CLE (116.51 ± 42.74 , 93.28 ± 44.31 , and 112.69 ± 37.68 , respectively; CLE vs PSO: $p < 0.05$; CLE vs AD: $p < 0.05$; CLE vs HC: $p < 0.05$).

Conclusions: TGF- β and IL-10 are regulatory cytokines implicated in the suppressive function of regulatory T cells, and are preferentially secreted by T helper 3 cells and type 1 regulatory T cells, respectively. Our data demonstrate a reduction of TGF- β and IL-10 in the sera of CLE patients compared to PSO and HC analyzed by ELISA. The defect of regulatory cytokines in CLE sera may take part in the immune pathogenesis of the disease, thus contributing to skin lesion development.