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Skin IL-17A and IFN-γ production correlate with disease severity in patients with psoriasis and streptococcal infection

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**ABSTRACT**

Psoriasis is a multisystemic inflammatory disorder, mainly involving skin and joints, which etiopathogenesis is still not completely understood. An association with streptococcal throat infection has been suggested.

We aim to investigate a correlation between interleukin (IL)-17A and interferon (IFN)-γ production by T-cells infiltrating skin lesions and Psoriasis Area Severity Index in 313 psoriasis patients, compared to 252 healthy controls. The phenotype of *β-haemolytic streptococci*-specific infiltrating T-cells in skin lesions was evaluated and characterized for IFN-γ, IL-4 and IL-17A production. In addition, peripheral blood mononuclear cells were tested by ELISpot for IFN-γ and IL-17A following streptococcal antigens exposure.

64 of 313 (20.4%) psoriasis patients had throat streptococcal infection. Of the 3868 skin-derived T-cell clones from psoriasis with streptococcal infection, 66% proliferated in response to *β-haemolytic streptococci* antigens*.* Most of *β-haemolytic streptococci* specific T-cells displayed Th17 and Th1 phenotypes. Levels of IFN-γ and IL-17A secreted by skin-infiltrating T cells of psoriatic patients significantly correlated with PASI score. In *β-haemolytic streptococci*-positive patients, IFN-γ and IL-17A production by peripheral blood T-cells following stimulation with streptococcal antigens was quantified by ELISpot. The results obtained may suggest ELISpot as useful diagnostic tool to identify psoriasis patients that may deserve antibiotic treatment.

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