IgA plasma levels, but not IgG, against Streptococcus pyogenes identifies Anti-Streptolysin O negative chronic plaque psoriasis patients with increased specific CLA+ T cells IL17A and IL17F producers

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Introduction

Streptococcus pyogenes tonsillar infection in early onset psoriasis patients can be associated with severe course of the disease and preferential biological therapy. Chronic plaque psoriasis patients have higher incidence of sore throat compared to controls. Although mucosal and cutaneous tissues are involved in psoriasis pathology, the interaction between their specific immune responses has not been deeply explored. The purpose of this study is identifying humoral immune response to *S. pyogenes* in psoriasis patients and address any connection with *in vitro* response in cocultures of CLA⁺ T cells and epidermal cells after stimulation with *S. pyogenes* extract.

Material and Methods

The study included 27 non-treated psoriatic patients and 21 healthy controls, who previously gave informed consent. Each participant underwent a blood extraction and two skin punch biopsies. Homemade ELISA was developed to detect Streptococcus pyogenes specific IgA and IgG present in plasma. Memory CLA⁺ and CLA⁻ T cells were purified from blood samples through immunomagnetic separations, and epidermal cells (Epi) were obtained by chemical and mechanical treatment of skin punches. 5x10⁴ CLA⁺ or CLA⁻ T cells were cocultured with 3x10⁴ autologous epidermal cells and activated by 1μg/ml Streptococcus pyogenes extract (SE). After 5 days of culture, IL-17A, IL-17F, IFN-γ and IL-9 were measured by fluorescent bead-based immunoassay (FACs) or ELISA. Data are represented by scatter plots showing the mean (red bar) and 95% confidence interval (CI).

Results

Conclusions

The combined analysis of IgA and CLA⁺ T cell response to the same antigen in psoriasis constitute a relevant tool to understand how microbial exposure in mucosa influence psoriasis trigger and development. Lilja M. et al had previously reported a direct correlation between secretory IgA-coated *Streptococcus pyogenes* and duration of tonsillitis. Our results suggest that microbe specific IgA could be considered a potential new biomarker to stratify chronic plaque psoriasis patients and a feasible tool to understand patients heterogeneity, which may shape their clinical course and response to treatments.

BIBLIOGRAPHY: Lilja M, Silvola J, Bye HM, Räisänen S, Stenfors LE. SIgA- and IgG-coated Streptococcus pyogenes on the tonsillar surfaces during acute tonsillitis. Acta Otolaryngol. 1999.

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