

Streptococcus pyogenes specific IgG, but not IgA identifies guttate psoriasis patients with increased CLA+ T cells IL17A, IL17F and IL9 producers

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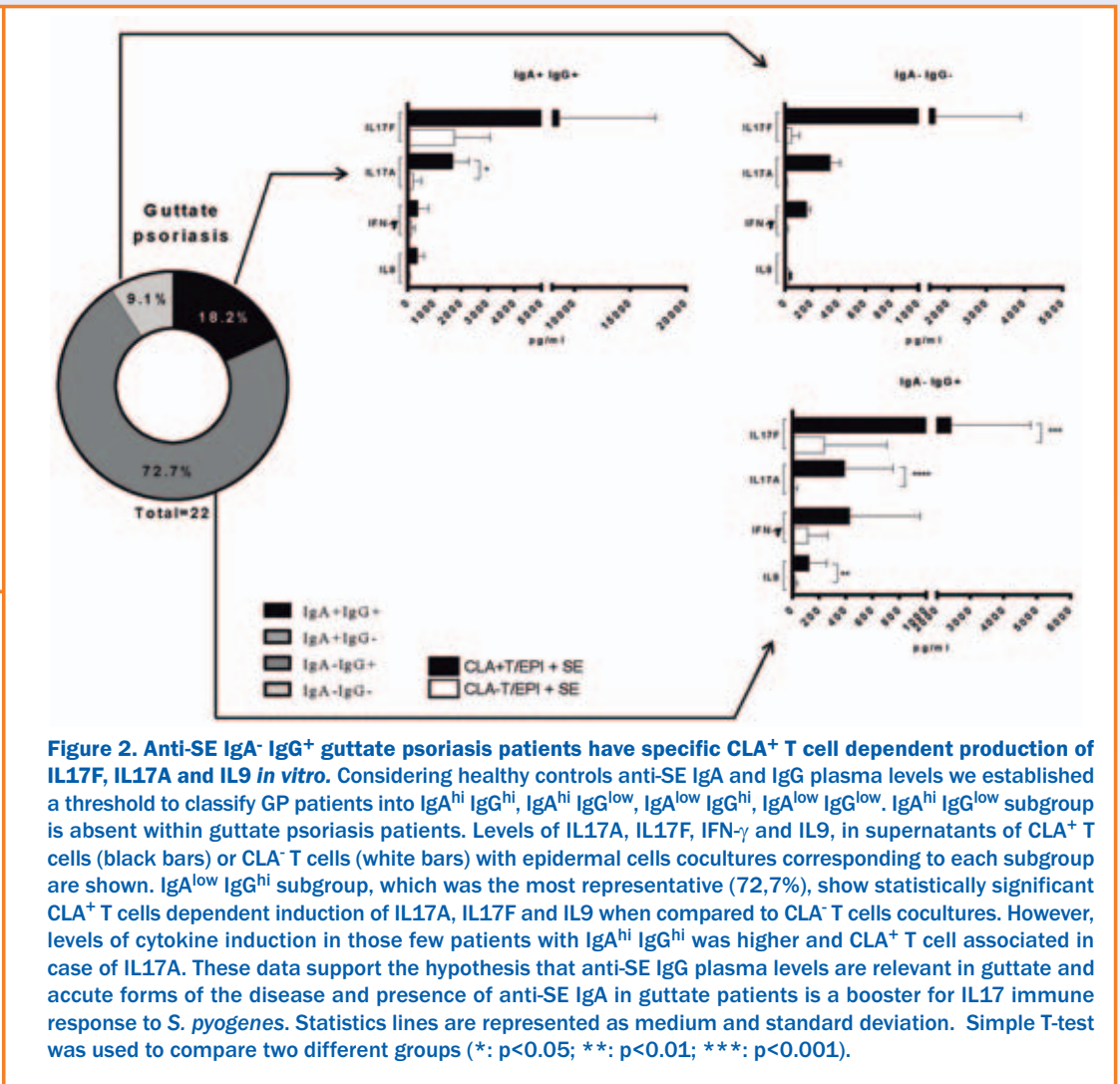
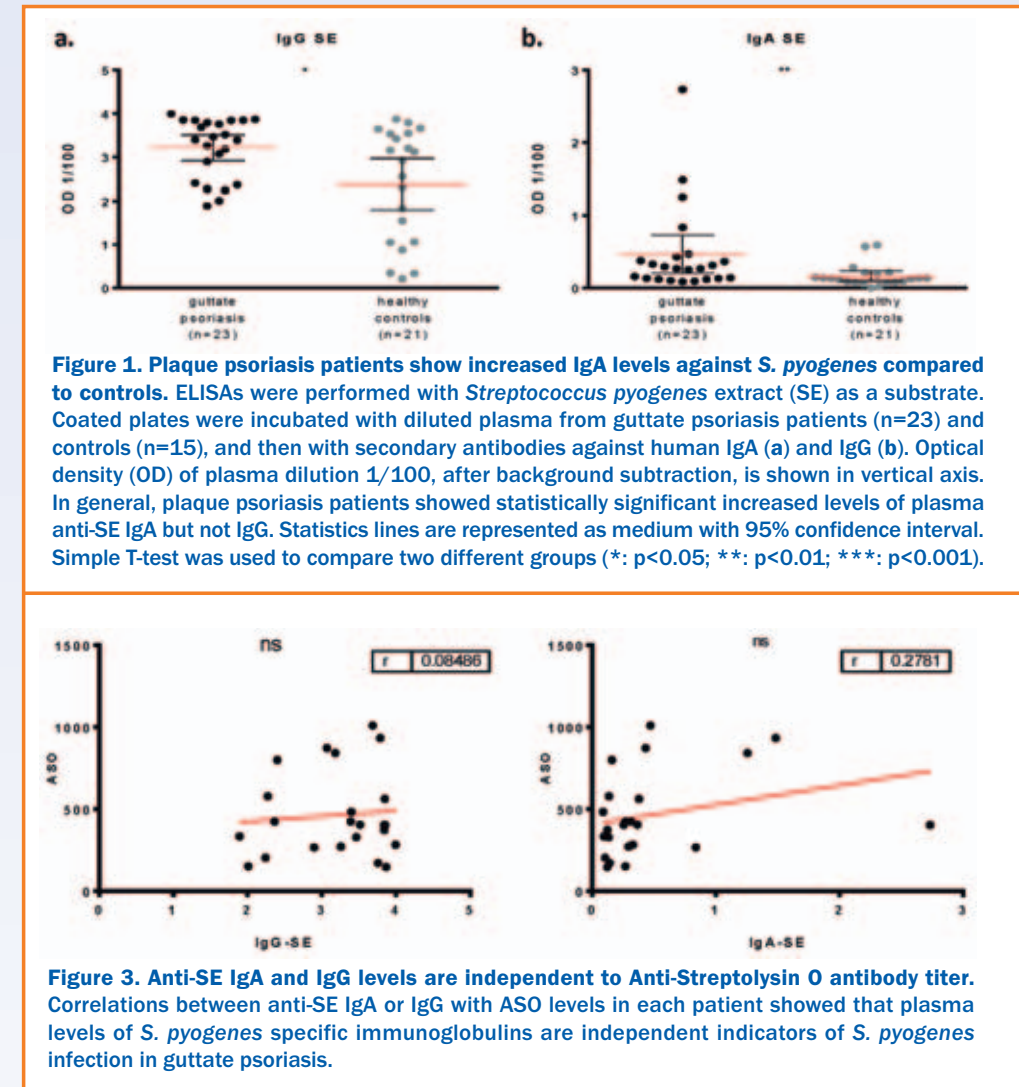
Introduction

Streptococcus pyogenes tonsillar infection influences disease evolution in most of guttate psoriasis patients, being associated with HLA-Cw6 and a more intense inflammatory infiltrate in skin lesions. Presence of IgG-coated *Streptococci* during acute tonsillitis has been previously reported by Lilja M. *et al.* However, the exact pathogenetic links between *Streptococcus pyogenes* tonsillar infection and psoriasis are not fully elucidated. We propose that understanding humoral response against *S. pyogenes* in guttate psoriasis patients may shed light to the role of infections in the disease development.

Material and Methods

The study included 23 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



Guttate psoriasis patients (n=23)	ASO	PASI	Length of disease (months)	Age of onset	HLA Cw6			Flare associated to streptococcal infection		
					Positive	Negative	UK	Yes	No	UK
Mean	464,2	6,89	2,88	25,46	95,65%	4,35%	-	78,3%	-	21,7%
SD	259,4	2,89	7,26	7,32	-	-	-	-	-	-

Table 1. Clinical features of plaque psoriasis patients' cohort. Data are presented as mean values or percentages when indicated. ASO: Anti-streptolysin O antibody titer, PASI: Psoriasis Area Severity Index.

Conclusions

Uneven distribution of guttate psoriasis patients according to immunoglobulin levels indicate a preferential IgG response related to acute tonsillar infection, in comparison to high anti-SE IgA found only in 4 out of 23 patients and in no patient with low IgG. Guttate psoriasis patients with high anti-SE IgG plasma levels had increased induction of disease relevant cytokines, such as IL17A and IL17F. We propose that the study of *S. pyogenes* specific IgG in plasma from patients could be useful to stratify them.