

LETTERS TO THE EDITOR

Detection of serum antibodies to human intracisternal A-type retroviral particles in chronic idiopathic urticaria

Editor

Clinical, genetic, and epidemiological evidence suggests that autoimmune disease in humans may involve an interaction between genetic susceptibility and external triggering factors such as viruses.¹ Retroviruses could induce production of autoantibodies by molecular mimicry or epitope spreading.¹ A growing body of evidence suggests that serum antibodies to endogenous retrovirus proteins might be considered a hallmark of a large array of autoimmune diseases. In particular, antibodies to human intracisternal A-type particles (HIAP) have been isolated from sera belonging to patients affected by autoimmune diseases,¹ including systemic sclerosis² and alopecia areata.³

Chronic idiopathic urticaria (CIU) is defined as a form of urticaria persisting for 6 weeks or more where a predominant physical urticaria has been excluded.⁴ The presence and possible functional role of immunoglobulin G (IgG) autoantibodies directed against epitopes expressed on the α -chain of the high-affinity IgE receptor or, less commonly, against IgE itself, in a subset of patients with CIU is now widely accepted.⁴ In recent years, the introduction of an autologous serum skin test (ASST) has made it possible to identify CIU patients with such autoantibodies. This and other data allow to consider these patients as being affected by an autoimmune disease. Nevertheless, the absence of detectable and/or non-functional antibodies in almost 50% of patients, among other issues, makes still unsolved and challenging the comprehension of the pathogenesis of CIU.⁴

The aim of the present study was to investigate whether an antibody reactivity to HIAP proteins is significantly present in the sera taken from CIU patients.

A total of 62 serum samples (15 males, 47 females; median age 54.9 year) from untreated CIU patients, were studied. ASST, performed according to the Greaves' method,⁴ was positive in 18 patients (4 males, 14 females; age range, 29–82 years) and negative in 44 (11 males, 33 females; age range, 29–80 years). Forty-eight serum samples (24 males, 24 females; median age, 43.9 years) taken from blood donors served as healthy controls. Serum antibody reactivity to HIAP proteins was studied by

immunoblot analysis performed as previously described.² HIAP-infected and uninfected RH9/MC lymphoblastoid cells served as sources of HIAP proteins and controls, respectively. All sera, analysed in duplicate, revealed reproducible results, and none of the sera examined showed antibody reactivity to immunoblots from uninfected cells. Immunoblots were considered positive when serum samples reacted with two or more proteins with electrophoretic mobility corresponding to that of known HIAP proteins (p17, p24, p30, p46, p60, p80, p84, p97). Fisher's exact test was used for statistical comparisons; $P < 0.05$ was considered to be statistically significant.

Twenty CIU (32.0%) and two healthy-donor sera (4.2%) showed positive immunoblots ($P = 0.0002$). In particular, positivity was detected in nine samples from ASST-positive patients (50.0%) and in 11 samples from ASST-negative patients (25.0%); no significant difference was highlighted between the two groups. The tested sera reacted most frequently with p46, p17, and p30 (Table 1).

Although the presence of serum antibodies to HIAP endogenous retrovirus proteins has been demonstrated in many autoimmune diseases, the direct involvement of an A-type retrovirus in the pathogenesis of a disease is still far from being confirmed or excluded.

Our study, obtained from reproducible and specific immunoblot analyses, provided evidence that serum antibodies against HIAP proteins are present in a significantly high percentage of CIU patients. A slight, although non-significant prevalence was demonstrated in the ASST-positive group compared with the ASST-negative

Table 1 Immunoblot antibody reactivity against individual HIAP proteins in serum samples from CIU patients and healthy controls

	Number and percentage of sera reacting with each HIAP protein		
	ASST-positive CIU patients	ASST-negative CIU patients	Healthy controls
p17	5 (27.7%)	10 (22.7%)	–
p24	3 (16.6%)	4 (9.0%)	–
p30	3 (16.6%)	10 (22.7%)	1 (2.0%)
p46	10 (55.5%)	24 (54.5%)	2 (4.2%)
p60	–	–	1 (2.0%)
p80	–	–	–
p84	–	–	–
p97	–	–	–

one. Such finding may be related to the slant pathogenic differences – very poorly characterized to date⁴ – between these two CIU subsets.

Whether anti-HIAP antibodies play a pathogenic role at least in a subset of CIU patients, or represent a mere epiphenomenon,⁵ remains to be elucidated with further studies.

M La Placa,† F Vitone,‡ W Volpi,§ M Caproni,§
D Gibellini,‡ D Torchia,§* P Fabbri,§ MC Re‡
†Dermatology Section and ‡Microbiology Section,
Department of Clinical and Experimental Medicine,
University of Bologna, Bologna, Italy, §Department of
Dermatological Sciences, University of Florence,
Florence, Italy, *Corresponding author, Department of
Dermatological Sciences, University of Florence,
Via della Pergola 58/60, 50121 Florence, Italy,
tel. +39 055 2758982; fax +39 055 2758757;
E-mail: daniele.torchia@unifi.it

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