

Letter to the Editor

Frequency and clinical implications of skin autoreactivity to serum versus plasma in patients with chronic urticaria

To the Editor:

Chronic urticaria (CU) is characterized by the rapid appearance of spontaneous wheals, angioedema, or both, often associated with a significantly impaired quality of life. In a subpopulation of patients with CU, a circulating endogenous factor or factors are present that can induce a wheal and flare-type reaction, defining the subgroup as autoreactive urticaria. The commonly used *in vivo* test for autoreactivity is the autologous serum skin test (ASST),¹ which in most studies has been shown to elicit positive results in about 35% to 45% of patients with CU.^{2,3} However, the overall percentage of patients with CU with positive ASST results reported ranges from 4% to 76%, possibly reflecting patient selection and differences in methodology and response interpretation. To obtain an internationally standardized protocol for the procedure and interpretation of the ASST, a consensus panel recommendation by the European Academy of Allergy and Clinical Immunology is currently in preparation. Recently, it has been reported that the percentage of patients with CU exhibiting skin autoreactivity is much higher if intradermal testing is performed with autologous plasma (autologous plasma skin test [APST]) instead of autologous serum (ASST).⁴ Here we aimed to characterize the skin autoreactivity in response to intradermal injection of autologous serum versus autologous plasma in 200 patients (146

women and 54 men) with CU consecutively screened in specialty clinics in Barcelona, Spain (40 women and 16 men); Berlin, Germany (93 women and 35 men); and Norwich, Great Britain (13 women and 3 men). The age of the patients ranged from 15 to 82 years (mean, 45.8 ± 15.6 years), and the duration of CU was from 3 to 360 months (mean, 48.3 ± 67 months). Diagnosis of CU was based on a detailed history and physical examination.

All patients received intradermal injections of 50 μ L of histamine (positive control), sterile normal saline (negative control), autologous serum, and autologous plasma, as described previously.⁵ Autologous serum was obtained by means of collection of venous blood into sterile glass tubes without accelerator or anticoagulant (Vacutainer; Becton Dickinson, Franklin Lakes, NJ), and for the collection of autologous plasma, tubes containing Na citrate (0.105 mol/L) were used to inhibit coagulation. In 154 patients the severity of symptoms was recorded by using the weekly urticaria activity score (UAS 7), and impairment in quality of life was assessed in 156 patients by using the Dermatology Life Quality Index (DLQI), as described previously.⁶

In confirmation of previously published findings, skin reactivity to autologous serum (positive ASST result) was found in 37.5% of all 200 patients with CU tested (Fig 1), and only slightly higher numbers of patients exhibited skin reactivity to autologous plasma (positive APST result, 43.0%), which is in contrast to a previous report in which up to 86% of patients with CU were found to have positive APST results.⁴ The results for skin autoreactivity were found to be comparable in all 3 study centers and

All centers				Barcelona			
APST				APST			
ASST	pos.		neg.	ASST	pos.		neg.
	pos.	57 (28.5%)	18 (9%)		pos.	20 (35.7%)	8 (14.3%)
	neg.	29 (14.5%)	96 (48%)		neg.	4 (7.1%)	24 (42.9%)
		86 (43%)	114 (57%)			24 (42.9%)	32 (57.1%)
			200				56

Berlin				Norwich			
APST				APST			
ASST	pos.		neg.	ASST	pos.		neg.
	pos.	31 (24.2%)	10 (7.8%)		pos.	6 (37.5%)	0 (0%)
	neg.	24 (18.8%)	63 (49.2%)		neg.	1 (6.3%)	9 (56.3%)
		55 (43%)	73 (57%)			7 (43.8%)	9 (56.3%)
			128				16

FIG 1. Observed frequencies in the outcomes of ASSTs and APSTs for all patients and for patients from each individual center. Comparison of patients with positive ASST results and patients with positive APST results among the 3 centers yielded statistical means $\pm$ SD of 39.8 ± 9.2 (for patients with positive ASST results) and 43.2 ± 0.5 (for patients with positive APST results). *pos.*, Positive; *neg.*, negative.

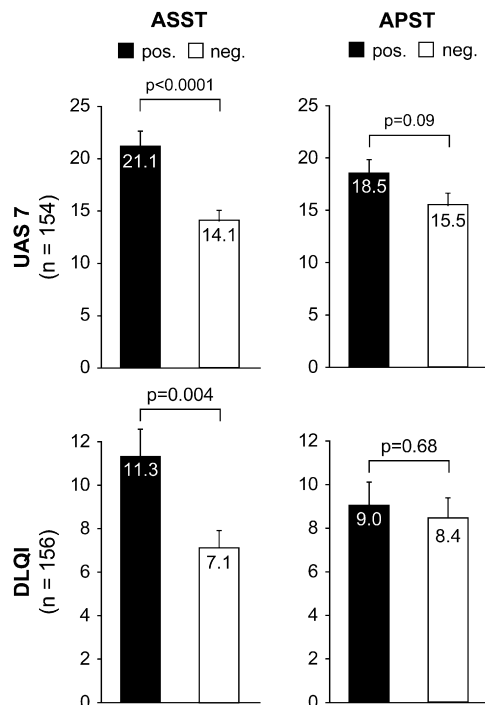


FIG 2. Disease activity in patients with CU with positive or negative ASST and APST results. Mean values are shown in the columns. *pos.*, Positive; *neg.*, negative.

ranged from 42.9% to 43.8% (positive APST result) and 32% to 50% (positive ASST result). Interestingly, patients with positive ASST results were found to have an increased disease activity (+7.1 UAS 7 points) and a significantly impaired quality of life (+4.2 DLQI points) compared with patients with CU with negative ASST results (Fig 2). In contrast, patients with positive and negative APST results exhibited no significant differences in disease activity and quality of life (+3.0 UAS 7 points and +0.6 DLQI points, respectively).

Our findings indicate that skin reactivity to autologous blood is largely unaffected by the presence or absence of coagulation

abnormalities, including thrombin generation. Furthermore, only by using the ASST to identify patients with CU with wheal-inducing circulating endogenous factors are we able to distinguish a subgroup of patients who exhibit a higher disease activity, as reflected by increased urticaria activity score and greater impairment in quality of life.

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