

Autologous Serum Skin Test in Chronic Urticaria

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Abstract

Background: Chronic urticaria is a distressing condition which affects the quality of life of patients. Majority of chronic urticaria patients have no external cause and termed as chronic idiopathic urticaria. Approximately 30-40% of patients with chronic idiopathic urticaria have autoimmune urticaria. ASST is a simple inexpensive test which helps to classify chronic urticaria into idiopathic urticaria and autoimmune urticaria.

Aims: To identify autoimmune urticaria amongst the chronic idiopathic urticaria.

Methods: A total of 100 cases of chronic urticaria, attending the skin opd from march to February were taken up for the study. After a detailed clinical history and examination laboratory investigations like Complete haemogram, Blood sugars, Erythrocyte Sedimentation Rate (ESR), Absolute eosinophil count (AEC) was sent for all the patients. ASST was done. A positive test was defined as a serum-induced wheal response with a diameter of 1.5 mm or more than the saline induced response at 30 minutes.

Results: Of all the patients studied 41% of the patients showed a positive reaction. Most of whom were females and in the age group of 21-30 years. The mean urticaria activity score was 5.11 in the ASST positive patients compared to 4.39 in the ASST negative group. In the ASST positive group, 80.48% had daily occurrence of lesions while 62.71% of the ASST negative group got lesions daily. Patients with positive ASST had larger extent of body involvement.

Conclusion: We concluded that autoimmune urticaria has greater frequency and larger extent and higher urticarial activity score than other types of urticaria.

Keywords: Chronic urticaria; ASST; Autoimmune urticaria.

Introduction

Chronic urticaria is defined by presence of wheals on most days of the week for a period of 6 weeks or longer [1,2]. In about 80% cases, no external allergen is identified and thus termed chronic idiopathic urticaria (CIU) [1]. Approximately 30-40% of patients with chronic idiopathic urticaria have histamine-releasing autoantibodies directed against either the high-affinity IgE receptor, or less frequently, IgE called autoimmune urticaria [3].

These antibodies can be detected using autologous serum skin test (ASST). With a sensitivity of 70% and a specificity of 80% it is a simple inexpensive reasonably predictive clinical test for functional circulating auto antibodies [4]. Chronic urticaria is a frustrating skin disease that affects the patient's quality of life [5]. It may last for years but it can be alleviated by appropriate management [6]. Patients with autoantibodies may need higher dose of antihistamine or additional immunomodulators [7]. With this in mind we did

the present study to identify autoimmune urticaria by ASST and study its clinical patterns.

Aims and Objectives

1. To study the clinical aspects of chronic urticaria.
2. To identify autoimmune urticaria amongst the group and study its clinical pattern.

Methods

A total of 100 cases of chronic urticaria, attending the skin opd from march to February were taken up for the study. After a detailed clinical history and examination laboratory investigations like Complete haemogram, Blood sugars, Erythrocyte Sedimentation Rate (ESR), Absolute eosinophil count (AEC) was sent for all the patients.

Two millilitres of venous blood was taken from the antecubital vein and the blood was allowed to undergo clotting at room temperature. Serum was separated by centrifugation (2000 rpm for 10-15 min). Approximately 0.05 mL of serum was injected intradermally into the volar aspect of the forearm, avoiding the areas of whealing within the past 24 hours. Equal amount of normal saline (negative control) was injected intradermally 3 to 5 cm apart in the volar aspect of the same forearm. Wheal and flare responses were measured at 30 min. A positive test was defined as a serum-induced wheal response with a diameter of 1.5 mm or more than the saline induced response at 30 minutes.

Results

A total of 100 cases of chronic urticaria, attending the skin opd were taken up for the study. Of all the patients studied 41% of the patients showed a positive reaction to the autologous serum skin test in the form of wheal and flare and 59% patients had a negative ASST. Chronic urticaria was predominantly seen in the age group of 21 to 30. Majority of the ASST positive patients were also in the 21 to 30 years age group (34.09%). But there was no significant difference in the age distribution between ASST positive and negative patients. The incidence of chronic urticaria was higher in females (68) compared to males (32). Of the 41 ASST positive patients, 31 (75.60%) were females indicating that a statistically significant proportion of females showed positive response to ASST (**Table 1**). UAS score was obtained by adding the scores for the

number of wheals and the score for the intensity of itching. It is a subjective score to assess urticarial activity. The mean urticaria activity score was 5.11 in the ASST positive patients compared to 4.39 in the ASST negative group. This difference was statistically significant (**Fig. 1**). The ASST, positive patients had a mean duration of onset of 29 months and ASST, negative group had 20 months.

Out of the 100 patients, 70 patients had daily occurrence of urticarial lesions. In the ASST positive group, 80.48% had daily occurrence of lesions while 62.71% of the ASST negative group got lesions daily. There was a statistically significant difference between the two groups indicating that the frequency of appearance of lesions was higher in the ASST positive subgroup (**Table 2**). In our study we noticed patients with positive ASST had larger extent of body involvement.

Table 1:

	Asst+	Asst -	Total
Males	10	22	32
Females	31	37	68
Total	41	59	100

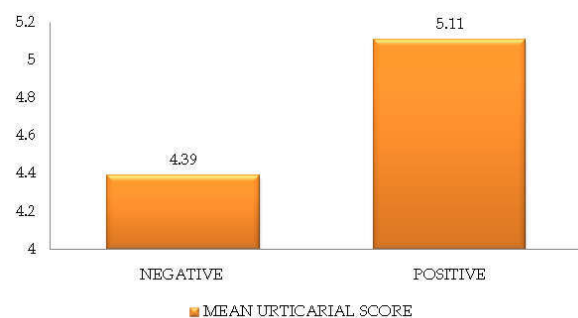


Fig. 1: Graphical correlation of the mean urticarial score and ASST positivity

Table 2:

Extent	Asst		Total
	Negative	Positive	
<10% (Score 1)	8 (13.55%)	0 (0%)	08 (8%)
11-50% (Score 2)	29 (49.15%)	13 (31.70%)	42 (42%)
>50% (Score 3)	22 (37.28%)	28 (68.29%)	50 (50%)
Total	59 (100%)	41 (100%)	100 (100%)

Discussion

Out of the 100 cases studied 41 patients were tested positive for ASST. While studies done by Bevi AS *et al.* [4] showed 69.4% and Vohra *et al.*

[8] showed 46% positivity, Mamatha *et al.* [9] and M Abd El Azim *et al.* [10] showed 34% and 39.6% respectively.

The mean age of ASST positive patients is 32.9 which is similar to the study done by Zeinab Abdel Azim *et al.* [11] (34.3) and M Abd El Azim *et al.* [10] (36.4).and Beevi SA *et al.* [4] (35.9) years.

The proportion of positive ASST was more in females (75.60%) compared to males (24.39%) in our study. In all studies [4,9,11] including the present study, the incidence of autoimmune urticaria is more in females compared to males. The higher incidence of positive ASST in females can be explained by the hypothesis of increased autoimmune diseases in the female sex in general [12].

In our study ASST, patients had a longer duration of disease (29 months) compared to ASST negative patients (20 months) although the difference was not statistically significant.

In a study by Zeinab Abdel Azim *et al.* [11] it was higher (48 m) and lower compared to a study by Abd El Azim M *et al.* [10] (27.4 months) in the autoimmune urticaria group.

Majority of patients with autoimmune urticaria have a higher mean urticaria score. In the present study, the mean urticaria activity score was 5.11 in ASST positive patients compared to 4.39 in ASST negative patients. This value is higher when compared to the study by Zeinab Abdel Azim *et al.* [11] with 4.5 in ASST positive. Our values were lower compared to study by Vohra *et al.* [8] (6.13). We noticed that autoimmune urticaria patients (80.48%) had more frequent urticarial attacks (>5/week or daily). This finding is consistent with the results of the studies done by Abd El Azim M *et al.* [10] and Zeinab Abdel Azim *et al.* [11] Majority (68.29%) of the ASST positive patients in the present study had >50% of their body surface area involved by urticarial lesions. This is comparable with the study done by Mamatha *et al.* [9] This implies that patients with a positive ASST have more frequent attacks and more extensive disease.

Conclusion

We concluded autoimmune urticaria has greater frequency and larger extent and higher urticarial activity score than other types of urticaria.

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