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## A study on Clinical profile of patients with chronic Urticaria

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### Abstract

Urticaria is commonly used to describe an eruption of wheals, as distinct from angioedema, although this does lead to confusion with classification of the physical Urticarias. The term 'Urticaria' is increasingly being used to describe a disease that may present with wheals, angioedema or both. The details enquired from the patients include duration of disease, duration of individual wheals, frequency of attacks, distribution of wheals, associated systemic symptoms, provoking physical factors, food and drug intolerance, seasonal variation, associated angioedema. The frequency of attacks were classified into 3 groups-1-3episodes/week, 4-6 episodes/week and daily attacks. Out of total 60 patients, 8 patients gave history of daily attacks of which 7(87.5%) were ASST positive, and was found to be statistically significant. Increase in the frequency of attacks correlated well with the ASST positivity. Among 60 patients, 27 patients were having high Pruritus score, of which 20(74.1%) were ASST positive, which was statistically significant.

**Keywords:** Chronic Urticaria, ASST, High Pruritus Score

### Introduction

Urticaria was first described by Hippocrates. In 1769, William Cullen introduced the word Urticaria. The nomenclature is derived from the Latin word "Urtica" which means nettle, named after the stinging nettle, *Urtica dioica*, which is now known to contain histamine. Urticaria was described by Herbeden in 1772 as follows "the little elevations upon the skin in the nettle rash often appears involuntarily, especially if the skin is rubbed, or scrubbed, and seldom stay many hours in the same place and sometimes not many minutes. There is nobody exempt from 'them' and by far the greatest number experience no other evil from it besides the intolerable anguish arising from itching. Chronic Urticaria was referred to as a vexing problem in a landmark review almost half a century ago and it remains so today<sup>[1, 2]</sup>. In 1983, Leznoff, *et al.* suggested an autoimmune basis for the Urticaria. In 1988, Gruber, *et al.* detected functional anti IgE antibodies. In 1991 Grattan, *et al.* showed evidence of histamine releasing auto antibodies with anti-IgE properties in sera from patients with chronic urticaria<sup>[3]</sup>.

Urticaria is characterized by short lived swellings of the skin and mucosa due to plasma leakage. Urticaria is commonly used to describe an eruption of wheals, as distinct from angioedema, although this does lead to confusion with classification of the physical Urticarias. The term 'Urticaria' is increasingly being used to describe a disease that may present with wheals, angioedema or both. Wheals and angioedema often occur together and for practical purposes are similar processes resulting from superficial and deep swellings, respectively, Weals (synonym "Nettle rash", hives) is the descriptive term for transient, well demarcated, superficial, erythematous or pale swellings of the dermis, which are usually associated with itching<sup>[4, 5]</sup>.

Angioedema (Angioneurotic Oedema, Quincke's Oedema) swellings affect the deeper dermal, subcutaneous and sub mucosal tissues. They are usually painful rather than itchy, poorly defined and pale or normal in colour.

Anaphylaxis is an acute life — threatening condition induced by an immunoglobulin E (IgE) mediated allergic reaction. It consists of a combination of symptoms and signs including diffuse erythema, pruritus, Urticaria and angioedema, hypotension and difficulty in breathing. A similar picture from non-allergic causes is called as anaphylactoid reaction but

but the term ‘non — allergic anaphylaxis’ is now preferred [6].

Urticaria is a common problem with a life time incidence of about 15-25% and point prevalence of 0.1% based on published data. Estimates of cumulative life time prevalence of chronic Urticaria have varied from 0.05% to 23.6% in the general population, but a range of 1-5% seems more realistic. Though Urticaria is seen in all age groups, it occurs most frequently after adolescence, with the highest incidence in young adults. It is more prevalent in middle aged females, with a male: female ratio of approximately 1: 2 for chronic Urticaria, P2] but the ratio varies with the different physical Urticarias [4, 6].

**Methodology**

The details enquired from the patients include duration of disease, duration of individual wheals, frequency of attacks, distribution of wheals, associated systemic symptoms, provoking physical factors, food and drug intolerance, seasonal variation, associated angioedema.

To rule out systemic causes of Urticaria, all patients were subjected to laboratory investigations included complete blood count, urine microscopic examination and other specific investigations if indicated. Clinical symptoms and signs were graded on the basis of the modified Urticaria activity score (ETAS) which combines severity of itching and wheal number.

**Inclusion Criteria**

- All patients attending the out patient department of Dermatology, Venereology and Leprology, ACME, Pariyaram with recurrent urticarial wheals of more than 6 weeks duration.
- Age 12 years and above.

**Exclusion Criteria**

- All patients on antihistamines for a period of 3 days prior to this test.
- Patients on any immunosuppressive drugs 6 weeks prior to this test.
- Patients with history of physical Urticaria other than simple dermatographism.
- Patients with urticarial vasculitis.
- Patients with known type I hypersensitivity reactions • Pregnant females.

**Results**

Of the total 60 patients, based on age distribution, they were classified into 3 groups <30 years, 31-40 years and 41-50 years. There is no significant correlation observed between age distribution and ASST positivity in patients at the time of assessment.

**Table 1:** Association between Age distribution and ASST

Age	ASST Negative		ASST Positive	
	Count	Percent	Count	Percent
< 30	14	73.7	5	26.3
31-40	15	62.5	9	37.5
41-50	11	64.7	6	35.3

**Table 2:** Association between sex distribution and ASST

Sex	ASST Negative		ASST Positive	
	Count	Percent	Count	Percent
Female	16	69.6	7	30.4
Male	24	64.9	13	35.1

13 out of 37 males (35.15%) and 7 out of 23 females (30.4%) showed ASST positivity and there' is no statistically significant correlation observed here.

**Table 3:** Association between Frequency of Attacks and ASST

Frequency of Attacks	ASST Negative		ASST Positive		X <sup>2</sup>	P value
	Count	Percent	Count	Percent		
1 - 3 Episodes / Week	29	100.0	0	0.0	30.63**	<0.001
4- 6 Episodes / Week	10	43.5	13	56.5		
Daily	1	12.5	7	87.5		

The frequency of attacks were classified into 3 groups-1-3 episodes/week, 4-6 episodes/week and daily attacks. Out of total 60 patients, 8 patients gave history of daily attacks of

which 7 (87.5%) were ASST positive, and was found to be statistically significant. Increase in the frequency of attacks correlated well with the ASST positivity.

**Table 4:** Association between Location of Lesions and ASST

Location of Lesions	ASST Negative		ASST Positive		x <sup>2</sup>	P value
	Count	Percent	Count	Percent		
Generalised	8	36.4	14	63.6	15.68**	0.001
Extremity	6	100.0	0	0.0		
Trunk	23	79.3	6	20.7		
Face	3	100.0	0	0.0		

Here out of 60 patients, 22 patients gave history of generalized occurrence of wheals, of which 14 (63.6%) were ASST positive, which was found to be statistically

significant when compared with other locations and ASST positive patients

**Table 5:** Association between Pruritus Score and ASST

Pruritus Score	ASST Negative		ASST Positive		X <sup>2</sup>	P value
	Count	Percent	Count	Percent		
Present But Not Disturbing	8	100.0	0	0.0	36.67**	<0.001
Disturbing but not hampering day time Activity or Sleep	25	100.0	0	0.0		
Hampering Day Time Activity or Sleep	7	25.9	20	74.1		

Among 60 patients, 27 patients were having high Pruritus score, of which 20 (74.1%) were ASST positive, which was statistically significant.

### Discussion

The present study has evaluated patients with chronic Urticaria by autologous serum skin testing and compared the clinical features of patients with positive and negative ASST results. The proportion of patients with chronic Urticaria who showed a positive reaction to ASST was 33.33%, which is comparable with earlier reports.

Sabroc, *et al.* found evidence of functional autoantibodies in 31% of 107 patients with chronic Urticaria [7]. Zweiman, *et al.* reported basophil histamine releasing activity in 30% of 70 chronic Urticaria sera. While Tong, *et al.* found that 52% of the sera of 50 chronic Urticaria patients released histamine from basophils. Mamatha, *et al.* found 34% of 100 chronic idiopathic Urticaria patients have circulating autoantibodies in their sera [8].

The prevalence difference according to the ethnic group of population suggests a genetic background for the disease. Because ASST has a sensitivity of 70% and a specificity of 80%, a positive test is suggestive but not diagnostic of an autoimmune basis for chronic Urticaria. Confirmation is needed by in vitro testing of the patient's serum for anti-FcCR1 or anti IgE auto antibody.

It is now established that circulating autoantibodies against the high affinity IgE receptor (FcER1 a) or against IgE can be found in approximately one third of all patients with chronic idiopathic Urticaria. That these autoantibodies are functional has been demonstrated both in vivo and in vitro by introduction of a wheal and flare response to an intradermal injection of serum (ASST) and basophil and mast cell histamine release assays respectively. In addition removal of autoantibodies by Plasmapheresis has been shown to produce clinical improvement in patients with chronic Urticaria.

The Clinical features of patients with chronic Urticaria were defined in several studies before the identification of autoantibodies. Now it is known that there are at least two subsets of patients with chronic urticarial those with and without autoantibodies.

The basophil histamine release assay is currently the gold standard for detecting these functional auto antibodies in the serum of patients with chronic Urticaria. However this bioassay is difficult to standardize because it requires fresh basophils from healthy donors, is time-consuming, and it remains confined to research centers. Western blot, enzyme-linked immunosorbent assays and flow cytometer may be useful for screening in the future, but they need to be validated. ASST is the simplest and the best is clinical test for detection of basophil histamine releasing activity. ASST is simple. Semi-invasive, inexpensive, and easy to perform. Results can be obtained within 30 minutes. It draws attention towards underlying systemic autoimmune and infective conditions. It also provides evidence for rational use of immunomodulators to modify the course of Chronic

Urticaria [9, 10].

### Conclusion

In this study out of total 60 patients, 23 (38.3%) were females and 37 (61.7%) were males. Thirteen out of 37 males (35.15%) and 7 out of 23 females (30.4%) showed ASST positivity and there was no statistically significant correlation observed here.

Twenty six patients who were having disease duration of more than one year of which 19 (73.1%) showed ASST positivity, which was found to be statistically significant (p=0.001). Eight patients gave history of daily attacks of Urticaria of which 7 (87.5%) were ASST positive (p=0.001)

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