

## Role of ASO titre in diagnostic evaluation of adult urticaria: Need to revisit?

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### Abstract

**Background:** Various preceding infections are well known to be causative factors for urticaria, including the streptococcal nasopharyngeal infection, and ASO titre remains an important component of diagnostic evaluation for urticaria.

**Aim:** To study the relevance of ASO titre as one of the causative factors in urticaria.

**Materials and Method:** In this hospital based study, prospective patients of ordinary urticaria, aged more than 16 years and of both sexes were studied over 15 months. ASO titre in these cases were compared with that of age matched apparently healthy controls.

**Results:** Out of 190 cases of urticaria, 17 (8.95%) showed positive ASO titre (>200 IU). Out of total 200 controls, 14 (7%) showed positive ASO titre. But this difference was not statistically significant ( $p > 0.05$ ).

**Conclusion:** The results of our study show that not all cases may be preceded by streptococcal infections and ASO titre may not be a necessary component of diagnostic evaluation in urticaria.

**Keywords:** Urticaria; Streptococcal infection; ASO titre

### Introduction

Urticaria is a very common dermatoses, quite distressing for the patients and equally challenging for the treating physicians. Although many theories exist regarding its etiopathogenesis and associations, which is multidimensional and multifactorial, with variations between individuals, yet the exact cause remains unknown. Preceding viral, bacterial, fungal, protozoal infections, including streptococcal nasopharyngeal infection, have been put forth as one of the important causative factors for acute as well as chronic urticaria, which can be identified by serological analysis in the form of anti-streptolysin (ASO titre).<sup>(1,2,3,4,5,6)</sup>

With the aim to evaluate the role of streptococcal colonization of the nasopharynx, as detected by ASO titre, as a causative factor in urticaria, we conducted a comparative study in our hospital.

### Materials and Method

This prospective study was conducted on patients of urticaria who visited the hospital to the same dermatologist team over a period of 15 months. Ordinary urticaria patients more than 16 years of age, both sexes and of any duration were included. Those with dermatological conditions other than urticaria were excluded and also those with urticarial subtypes such as physical, cholinergic, temperature dependent, contact, vasculitic. Clinical diagnosis of urticaria was made from detailed history and examination, and relevant data collected and recorded. ASO titre was done from the hospital laboratory. The ASO titre was compared with age matched controls. The controls were apparently healthy individuals accompanying these and other patients, not having any dermatological concern

or a condition likely to be associated with increase in ASO titre. The statistical analysis, wherever needed was done by using paired t test, taking p value < 0.05 as significant.

### Results

190 prospective patients of urticaria were studied. There were 97 females and 93 males (F:M ratio 1.04:1). The age of patients ranged from 16-50 years, with average age of 30.12 years (SD 8.74). Family history of urticaria was present in 31 patients.

The mean duration of present episode of urticaria was 69.7 days (SD: 149.85), ranging from 2 days to 730 days (2 years). Mean total duration of the disease was 33.21 months (SD 46.45), ranging from 2 months to 12 years.

112 patients presented with acute urticarial type. 78 had chronic type, amongst whom 31 presented as acute attack, making a total of 143 cases who presented with acute attack. 54 cases presented along with angioedema.

ASO titre was also done in 200 healthy controls, 111 males and 89 females, in the age group 16-50 years, with average age 30.27 (SD 8.66).

Out of 190 cases, 173 (91.05%) patients had negative ASO titre (titre <200 IU) and 17 (8.95%) had positive ASO (titre >200 IU).

Out of 200 controls, 186 (93%) had negative ASO titre and 14 (7%) had positive titre.

This difference of ASO titre positivity of 8.95% in urticaria patients compared to 7% of that in controls, was not statistically significant ( $p > 0.05$ ).

Demographic and other general characteristics of the patients are summarized in Table 1.

**Table 1: General and related characteristics of the patients**

		Cases (n=190)	Controls (n=200)	P value
Sex	Females	97	89	
	Males	93	111	
Residence	Rural	118		
	Urban	72 (7 non locals)		
Dietary habits	Non veg	101		
	Veg	81		
	Un defined	8		
Age group	Age range (years)	16-50	16-50	
	Average age (years)	30.12 (SD 8.74)	30.27 (SD 8.66)	p= 0.5000 t = 1.0000 df = 1
Presenting complaints	Itching	88		
	Wheal	77		
	Dermographism	25		
Family H		Yes:159; No: 31		
Present duration	Range	2 days-2 years		
	Average	69.7 days (SD: 149.85)		
Total duration	Range	2 months – 2 years		
	mean total duration	33.21 months (SD 46.45)		
Angioedema associated		No 136; Yes 54		
Type of urticarial	Acute	112		
	Acute on chronic	31		
	Chronic	47		
ASO	Positive	17	14	p= 0.6444 (NS) t = 0.6250 df = 1
	Negative	173	186	

## Discussion

In this study, a slightly higher female to male ratio (F:M ratio 1.04:1) was found. In literature also, there is preponderance of females to suffer from various urticarial types.<sup>(7,8)</sup>

143 patients (75.26%) presented with acute attack. Out of these 31 had acute on chronic urticaria. 47 cases presented as chronic from the very beginning. More cases presenting as acute episodes to the medical professionals is on expected lines, as patients usually avoid visits when in remission. This again is the reason for 54 cases (28.42%) of angioedema.

Preceding infections are widely considered to play a role in the etiology of both acute and chronic urticaria. This includes streptococcal nasopharyngeal infections as well. So ASO titre has remained a vital investigation in the evaluation of etiopathogenesis of urticaria.<sup>(1,2,5,9,10,11)</sup>

In our study, out of 190 cases, 17 (8.95%) showed positive ASO titre, compared to 14 (7%) among the 200 controls. But this difference was not statistically significant ( $p > 0.05$ ). So, streptococcal nasopharyngeal infection may not always precede an attack of acute or

chronic urticaria and ASO titre may not always be considered so necessary an investigation in the diagnostic evaluation of urticaria.

We could not find previous studies in literature which lay emphasis on this aspect. So, further studies need to be taken up with larger sample sizes and using other methods of diagnostic evaluation as well, to look for the role of various preceding infections and infestations in urticaria.

## Conclusion

Our study showed some marginal rise in ASO positivity in cases as compared to controls, but this was not statistically significant. So we conclude that not all cases may be preceded by streptococcal infections and ASO titre may not be a necessary component of diagnostic evaluation in urticaria.

## Acknowledgement

We thank all the patients and controls for their willingness to participate in this study.

**Financial support/ Conflict of interest:** None

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