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# Clinico-epidemiological profile of chronic urticaria at tertiary care center of Gujarat: A cross-sectional study

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**Abstract**
**Background and Aim:** Urticaria is one of the most common skin diseases. Depending on the length of symptoms, acute (lasting less than 6 weeks) and chronic urticaria (CU) (> 6 weeks) are distinguished. Present study was done with an aim to evaluate the clinical and epidemiological features of chronic urticaria.
**Material and Methods:** The Present Descriptive study group included 150 consecutive patients with chronic urticaria attending the dermatology outpatient department of Tertiary care institute of Gujarat. A preformed questionnaire was used to collect detailed history of disease onset, duration, morphology and distribution of chronic urticaria. Severity of itching and number of wheals were noticed and urticaria activity score (UAS) was calculated by adding pruritus and wheal score. Duration of individual wheals, presence of angioedema, and systemic symptoms like malaise, headache, abdominal pain, arthralgia and wheezing were noted.
**Results:** Angioedema was seen in 78 and dermographism in 66 patients. Duration of individual wheal was 30 minutes in 24 patients and one hour in 29 patients. One hundred and twenty patients had wheals which occurred daily per week. Diurnal variation of urticarial wheals was not seen in 51 patients. Out of the 98 patients who showed diurnal variation 65 had wheals at night. Whole body was involved in 25 patients and trunk and limbs were involved in 9 patients. Sparing of palms and soles were seen in 22 patients. Food was the aggravating factor in 51 patients, exposure to house dust in 42, sweat in 54, pressure in 56, sunlight in 25, drugs in 33, stress in 54, heat in 20, water in 30, cold in 7, infection in 46, dental caries in 54, and infestations in 30 patients.
**Conclusion:** Exacerbation of chronic urticaria by food, drugs and pressure was more in our study. Thyroid disorder was more common and atopic diathesis was less common in our patients. Chronic urticarias among family members were also more common in our study.

**Keywords:** angioedema, itching, thyroid disorder, urticaria

## Introduction

Urticaria is a heterogeneous group of disorders characterized by the development of evanescent pruritic wheals and/or angio-edema. It is classified into acute or chronic spontaneous urticaria and inducible urticaria [1]. It is a chronic mast cell mediated disease characterized by itchy, evanescent, erythematous or pale swellings of the dermis which resolve within 24 hours. When there is involvement of deep dermal, subcutaneous or sub mucosal tissue it is called angioedema [1]. Angioedema is usually not itchy, may be painful, poorly defined, pale or normal in color. It is associated with urticaria in 50% of the patients [2]. Based on the duration of disease urticaria is classified into acute and chronic. If urticaria is present daily or almost daily for six weeks it is called acute urticaria and if urticaria is present more than six weeks it is called chronic urticaria [3]. Chronic urticaria (CU) manifests by reoccurrence of typical lesions for at least 6 weeks or longer and affects up to 1% of general population at any given time [3, 4]. According to the latest EAACI/GA2 LEN/EDF /WAO guidelines, it can be classified either as a spontaneous subtype (CSU) or as an inducible subtype, triggered mostly by physical factors [5]. Epidemiological data on CU, especially its clinical and demographic determinants as well as health care system patterns, are still scarce in the literature.

Chronic autoimmune urticaria can be associated with autoimmune thyroid disease which is detected by autologous serum skin test [6, 7].

It is very difficult to find out the exact cause of urticaria. Hence, we decided to conduct a study to evaluate the clinical and epidemiological features of chronic urticaria.

## Material and Methods

A descriptive study was conducted to find out the clinical and epidemiological profile of chronic urticaria. The study group included 150 consecutive patients with chronic urticaria attending the dermatology outpatient department of Tertiary care institute of Gujarat. Pregnant and lactating women were excluded from the study. Institutional research and ethics committee approval were obtained for conducting the study. A preformed questionnaire was used to collect detailed history of disease onset, duration, morphology and distribution of chronic urticaria. Severity of itching and number of wheals were noticed and urticaria activity score (UAS) was calculated by adding pruritus and wheal score. Duration of individual wheals, presence of angioedema, and systemic symptoms like malaise, headache, abdominal pain, arthralgia and wheezing were noted. All possible aggravating factors like heat, cold, pressure, sweating, sunlight, friction, exercise, food, drugs, infections, implants and stress were enquired. History of atopy, thyroid disease, other systemic diseases and treatment taken were documented. History of premenstrual exacerbation and remission during pregnancy were noticed. Family history of urticaria, angioedema, atopy, thyroid disease and other systemic diseases were enquired. General examination included pallor, jaundice, clubbing, lymphadenopathy and thyroid swelling. A search for focus of infection such as caries, sinus, ear and respiratory infection were performed. In the dermatological examination morphology and distribution of the skin lesions and presence of dermographism were noted. All the patients were completely investigated to find out any underlying causes for urticaria. Complete blood count, erythrocyte sedimentation rate, urine analysis, stool for ova and parasites, anti-streptolysin O titer, random blood sugar, renal and liver function test, hepatitis B antigen, rheumatoid factor and antinuclear antibody were done in all patients.

## Statistical analysis

The recorded data was compiled and entered in a spreadsheet computer program (Microsoft Excel 2007) and then exported to data editor page of SPSS version 15 (SPSS Inc., Chicago, Illinois, USA). For all tests, confidence level and level of significance were set at 95% and 5% respectively.

## Results

Out of 150 patients with chronic urticaria, 45 were males and 105 were females with a male to female ratio of 1:3. Age of patients ranged from 13 to 72 years with mean age of 34 years. Duration of chronic urticaria ranged from 2 months to 30 years with 44 patients showing duration of 2 to 3 years. Twenty five patients had urticaria lasting more than 10 years. Mild pruritus was seen in 12 patients, moderate pruritus was seen in 38 and severe pruritus in 100 patients. Wheals more than 50 were seen in 80, 20-50 wheals were seen in 25 and less than 20 wheals in 45 patients.

Angioedema was seen in 78 and dermographism in 66 patients. Duration of individual wheal was 30 minutes in 24 patients and one hour in 29 patients. One hundred and twenty patients had wheals which occurred daily per week. Diurnal variation of urticarial wheals was not seen in 51 patients. Out of the 98 patients who showed diurnal variation 65 had wheals at night. Whole body was involved in 25 patients and trunk and limbs were involved in 9 patients. Sparing of palms and soles were seen in 22 patients. Food was the aggravating factor in 51 patients, exposure to house dust in 42, sweat in 54, pressure in 56, sunlight in 25, drugs in 33, stress in 54, heat in 20, water in 30, cold in 7, infection in 46, dental caries in 54, and infestations in 30 patients. Premenstrual exacerbation was seen in 16 patients and history of exacerbation during pregnancy was noticed in 9 patients. Atopy was seen in 22 patients followed by thyroid disorder in 19 and autoimmune disease in 8 patients. Family history of urticaria was seen in 22 patients. Comorbidities observed in the family of patients were atopy in 37, thyroid disorder in 23, diabetes in 37 patients and hypertension in 38 patients.

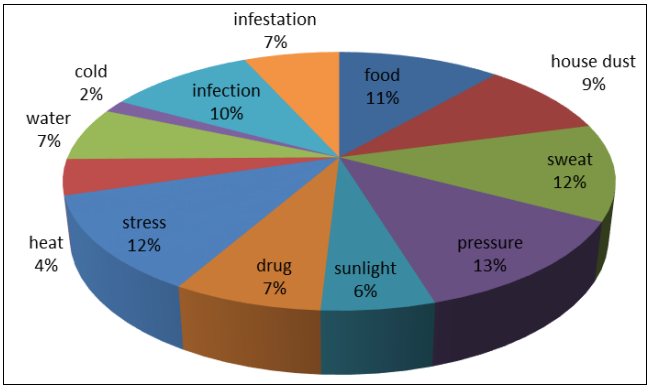


**Fig 1:** Exacerbating factors in chronic urticaria.

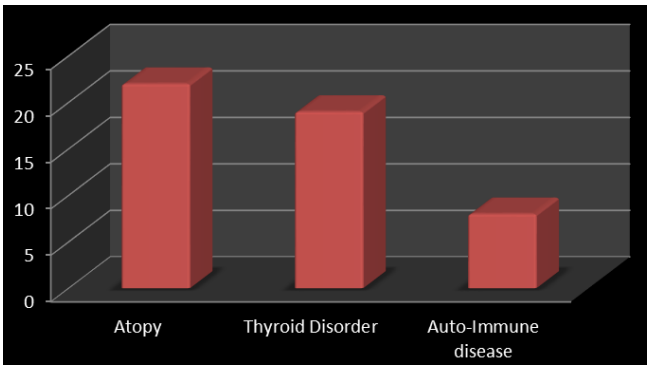


**Fig 2:** Comorbidities in chronic urticaria patients

## Discussion

Chronic urticaria is a common and frustrating disorder. The life time prevalence of chronic urticaria ranges from 15 to 25%. It is not possible to find out a specific etiology in about 50% of chronic urticaria patients. Possible etiological factors of chronic urticaria include infections, pressure, heat, drugs, dietary pseudo allergens, menstrual cycle, pregnancy, nickel allergy and stress. Chronic urticaria can be associated with autoimmune thyroid disorder. Thyroid function can be normal in chronic urticaria patients with thyroid autoimmunity [8].

In our study females outnumbered males, with a male to female ratio of 1:3 which coincide with most of the previous studies. Mean age of chronic urticaria patients in our study was 35 years which is also comparable with previous studies [9, 10]. Duration of chronic urticaria in our study ranged from 2 months to 30 years with majority showing duration of 2 to

3 years. This finding is comparable with study by Heng *et al.*, but contrast with the study by Itakura *et al.* which showed average duration of more than 10 years [11, 12]. Other studies provide inconsistent data concerning the sex in this subset of urticaria. The study of Kim *et al.* [13] showed a male predominance, while others have reported that both sexes were affected to the same degree [14, 15].

More than half of the chronic urticaria patients had angioedema. Angioedema was associated with urticaria, the frequency of which ranges from 16 to 66% in various studies [16, 17]. Dermographism was associated with urticaria in half of the patients which is much higher than previous studies [14-16]. Pressure was the most common aggravating factor in our study which is also higher than previous studies [12, 13, 15]. Stress was the exacerbating factor in more than one third of our patients which coincide with study by Kozel *et al.*, but much higher when compared with Ojeda *et al*. [18, 19]. Some of the previous studies reported less aggravation of urticaria with food [14, 7]. Drugs were the exacerbating factor in 22% of the patients in our study which is much higher than previous studies [16-18]. Chronic urticaria significantly impairs quality of life of the patients. In the analysed group the most troublesome symptom of the disease was pruritus, followed by the presence of skin lesions. Other studies confirm our results showing itching as the leading bothersome symptom of CU [20].

Family history of urticaria was seen in 15% of our patients which is comparable with the study by Heng *et al.*, but higher than that mentioned in some previous studies [18, 19, 21]. Most common comorbidities associated with urticaria was atopic diathesis and thyroid disorder. Atopic diathesis in urticaria patient was less in our study when compared with previous studies, but thyroid disorder was more in our study [17, 18, 22].

## Conclusion

Dermographism was seen in more than half of chronic urticaria patients. Exacerbation of chronic urticaria by food, drugs and pressure was more in our study. Thyroid disorder was more common and atopic diathesis was less common in our patients. Chronic urticaria among family members were also more common in our study.

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