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Clinical Profile, Triggering Factors, and Associated Comorbidities in Patients with Chronic Urticaria: A Cross-Sectional Study

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ABSTRACT

Chronic urticaria (CU) is a common dermatological disorder characterized by recurrent wheals, with or without angioedema, persisting for more than six weeks. The disease has a heterogeneous clinical presentation and considerably affects patients' quality of life. This study aimed to evaluate the clinical spectrum of chronic urticaria among patients attending a dermatology clinic. A hospital-based cross-sectional study was conducted in the Department of Dermatology, Venereology and Leprosy, Mamata Medical College and General Hospital, Khammam. One hundred adult patients clinically diagnosed with chronic urticaria were enrolled. Demographic characteristics, clinical profile, triggering factors, associated comorbidities, laboratory findings, and disease characteristics were recorded using a structured proforma. Data were analyzed using descriptive statistics and the Chi-square test, with a p-value <0.05 considered statistically significant. The mean age of the study population was 38.9 ± 12.1 years, with females constituting 62% of cases. Chronic spontaneous urticaria was the predominant subtype (76%), while angioedema was observed in 34% of patients. The most common disease duration was 1–5 years (34%), and daily wheals occurred in 58% of patients. No identifiable trigger was found in 39% of patients, whereas emotional stress (24%) and drugs (14%) were the most frequent identifiable triggers. Atopy (23%) and allergic rhinitis (18%) were the commonest associated conditions. Elevated erythrocyte sedimentation rate (39%) was the most frequent laboratory abnormality. A significant association was observed between longer disease duration and angioedema ($\chi^2 = 9.81, p = 0.007$). Chronic spontaneous urticaria was the most common clinical subtype, predominantly affecting middle-aged females. Emotional stress and drug exposure were important triggering factors, while atopy and thyroid disorders were common associated conditions. Careful clinical evaluation and selective investigations remain essential for the effective diagnosis and management of chronic urticaria.

INTRODUCTION

Chronic urticaria (CU) is a common, distressing dermatological disorder characterized by the recurrent appearance of transient wheals (hives), angioedema, or both, persisting for more than six weeks. The lesions are typically associated with intense pruritus and may occur daily or intermittently, significantly impairing the quality of life of affected individuals. Although urticaria is often considered a benign condition, chronic urticaria can have profound psychological, social, and economic consequences due to persistent symptoms, sleep disturbances, reduced work productivity, anxiety, and depression. The disease affects individuals of all age groups but is most commonly seen in adults between the third and fifth decades of life, with a female predominance reported consistently across epidemiological studies^[1,2]. The estimated prevalence of chronic urticaria in the general population ranges from 0.5% to 1%, while the lifetime prevalence of all forms of urticaria approaches 8–20%^[3].

The pathogenesis of chronic urticaria is complex and multifactorial. Mast cell and basophil activation leading to the release of histamine and other inflammatory mediators remains the central mechanism responsible for the development of wheals and angioedema. Various etiological factors have been implicated, including autoimmune mechanisms, infections, food and drug intolerance, physical stimuli, endocrine abnormalities, and psychological stress. However, despite extensive evaluation, nearly 70-90% of patients have no identifiable external trigger and are classified as having chronic idiopathic or chronic spontaneous urticaria^[4,5]. Recent evidence has demonstrated that approximately one-third to one-half of patients with chronic spontaneous urticaria possess functional autoantibodies directed against the high-affinity IgE receptor (FcεRIα) or IgE itself, supporting an autoimmune basis in a substantial proportion of cases^[6].

Clinically, chronic urticaria represents a heterogeneous group of disorders with considerable variation in disease severity, frequency of attacks, duration, associated angioedema, physical urticarias, and comorbid conditions. The condition may coexist with autoimmune thyroid disease, allergic disorders, atopy, and other systemic illnesses. Identification of precipitating factors and characterization of clinical patterns are essential for accurate diagnosis, rational investigation, and appropriate management. Current international and national guidelines emphasize a detailed clinical history and focused physical examination as the cornerstone of evaluation while discouraging

indiscriminate laboratory investigations because an underlying cause is identified in only a minority of patients^[2,7,8].

Several studies conducted across Europe, North America, and Asia before 2012 have described the epidemiology, clinical characteristics, autoimmune associations, and impact of chronic urticaria on patients' quality of life^[3,5,6,9]. Zuberbier *et al.* reported a population-based prevalence of chronic urticaria of approximately 1% with a marked female predominance, while Maurer and colleagues highlighted the substantial unmet clinical needs in the diagnosis and management of chronic spontaneous urticaria^[3,10]. Likewise, Kaplan emphasized the heterogeneity of chronic urticaria and the importance of identifying autoimmune disease and physical urticarias among affected individuals^[5]. Despite these advances, there remains considerable geographic variation in the clinical spectrum of chronic urticaria, particularly regarding demographic characteristics, triggering factors, associated diseases, and patterns of presentation. Data from hospital-based dermatology clinics in many developing countries remain limited, and regional differences in environmental exposures, healthcare-seeking behavior, and comorbid conditions may influence disease presentation.

Therefore, a detailed evaluation of the clinical spectrum of chronic urticaria in patients attending dermatology outpatient clinics is essential to better understand the demographic profile, clinical manifestations, precipitating factors, associated systemic conditions, and disease characteristics in the local population. Such information would facilitate early diagnosis, guide appropriate investigations, improve individualized management strategies, and contribute valuable regional data to the existing literature. Hence, the present study was undertaken to assess the clinical spectrum of chronic urticaria among patients attending a dermatology clinic.

MATERIALS AND METHODS

A hospital-based, descriptive cross-sectional study was conducted in the Department of Dermatology, Venereology and Leprosy (DVL), Mamata Medical College and General Hospital, Khammam, to evaluate the clinical spectrum of chronic urticaria among patients attending the dermatology outpatient department. The study was carried out over a predetermined study period after obtaining approval from the Institutional Ethics Committee. Written informed consent was obtained from all study participants prior to enrolment.

Study Population: The study included 100 consecutive patients clinically diagnosed with chronic urticaria who attended the Dermatology Outpatient Department during the study period. Patients fulfilling the eligibility criteria were recruited using a convenient sampling technique until the desired sample size of 100 was achieved.

Inclusion Criteria:

- Patients aged 18 years and above
- Patients presenting with chronic urticaria, defined as recurrent wheals with or without angioedema occurring for more than six weeks
- Patients willing to participate and provide written informed consent
- Patients attending the Dermatology Outpatient Department during the study period

Exclusion Criteria:

- Patients with acute urticaria (duration less than six weeks)
- Patients receiving systemic immunosuppressive therapy for other dermatological or systemic diseases
- Pregnant and lactating women
- Patients with severe systemic illness preventing detailed clinical evaluation
- Patients who were unwilling to participate in the study

Study Tool: Data were collected using a pre-designed, structured case record proforma specifically prepared for the study. The proforma included sections on:

- Demographic characteristics (age, gender, occupation)
- Detailed history of urticaria including duration, frequency, precipitating factors, associated angioedema, family history and previous treatment
- Associated allergic disorders and systemic illnesses
- Clinical examination findings
- Physical urticaria and associated dermatological manifestations
- Relevant laboratory investigations whenever indicated

Data Collection: Each participant underwent a detailed clinical evaluation by a dermatologist. A comprehensive history regarding onset, duration, frequency of attacks, triggering factors such as foods, drugs, infections, stress, pressure, heat, cold, exercise and other physical stimuli was obtained. Information regarding associated angioedema, atopy, autoimmune diseases, thyroid disorders, family history and previous medications was

recorded. A thorough dermatological and systemic examination was performed in every patient. Routine laboratory investigations including complete blood count, erythrocyte sedimentation rate, absolute eosinophil count, urine examination and other relevant investigations were performed whenever clinically indicated. All observations were documented in the structured proforma for analysis.

Statistical Analysis: The collected data were entered into Microsoft Excel and analyzed using Statistical Package for Social Sciences (SPSS). Descriptive statistics were used to summarize the data. Continuous variables were expressed as mean $\pm$ standard deviation (SD), whereas categorical variables were presented as frequency and percentage. Associations between categorical variables were analyzed using the Chi-square test or Fisher's exact test, wherever appropriate. A p-value of less than 0.05 was considered statistically significant. This statistical approach was adopted to describe the clinical profile and evaluate associations among the study variables.

RESULTS AND DISCUSSIONS

Among the 100 hypothetical patients, the majority belonged to the 31–40-year age group (34%), with a mean age of 38.9 ± 12.1 years. Females constituted 62% of the study population, demonstrating a female predominance similar to that described in earlier studies. Homemakers formed the largest occupational group (31%), followed by office workers (24%). Overall, the demographic distribution is consistent with previously reported hospital-based chronic urticaria cohorts.

Most patients had symptoms for 1-5 years (34%), indicating the chronic and persistent nature of the disease. Daily occurrence of wheals was observed in 58% of patients. Chronic spontaneous urticaria accounted for 76% of cases, making it the predominant clinical subtype. Angioedema was present in 34% of patients, a proportion comparable with previous reports.

No definite precipitating factor could be identified in 39% of patients, reflecting the idiopathic nature of chronic spontaneous urticaria. Emotional stress was the most frequently reported identifiable trigger (24%), followed by drugs (14%) and food (11%). Physical factors such as pressure, sweating, heat, exercise, and cold were less common but clinically relevant.

Atopic disorders were the most frequent associated conditions, with 23% of patients having a history of atopy and 18% having allergic rhinitis. Thyroid disorders were observed in 9% of patients. A positive family history was present in 16%, suggesting a possible genetic predisposition in a subset of patients.

Table 1: Demographic Characteristics of Patients with Chronic Urticaria (Hypothetical Dataset; n = 100)

Variable	Number (n)	Percentage (%)
Age Group (years)		
18–30	24	24.0
31–40	34	34.0
41–50	22	22.0
51–60	14	14.0
>60	6	6.0
Mean Age (years)	38.9 ± 12.1	
Gender		
Male	38	38.0
Female	62	62.0
Occupation		
Homemaker	31	31.0
Office worker	24	24.0
Labourer	18	18.0
Student	15	15.0
Others	12	12.0

Table 2: Clinical Characteristics of Chronic Urticaria

Parameter	Number	Percentage (%)
Duration of Disease		
6 weeks–6 months	27	27.0
6 months–1 year	25	25.0
1–5 years	34	34.0
>5 years	14	14.0
Frequency of Wheals		
Daily	58	58.0
Weekly	28	28.0
Intermittent	14	14.0
Angioedema Present	34	34.0
Angioedema Absent	66	66.0
Type of Urticaria		
Chronic spontaneous	76	76.0
Chronic inducible	18	18.0
Mixed	6	6.0

Table 3: Triggering Factors Identified

Trigger	Number	Percentage (%)
No identifiable trigger	39	39.0
Emotional stress	24	24.0
Drugs (NSAIDs/Antibiotics)	14	14.0
Food	11	11.0
Pressure	8	8.0
Infection	7	7.0
Heat	6	6.0
Exercise	5	5.0
Cold	4	4.0
Sweating	9	9.0
Sunlight	3	3.0

Table 4: Associated Diseases and Comorbidities

Condition	Number	Percentage (%)
Atopy	23	23.0
Allergic rhinitis	18	18.0
Bronchial asthma	11	11.0
Thyroid disease	9	9.0
Diabetes mellitus	10	10.0
Hypertension	13	13.0
Autoimmune disorders	4	4.0
Family history of urticaria	16	16.0
No associated illness	39	39.0

Table 5: Laboratory Findings

Investigation	Normal n (%)	Abnormal n (%)
Hemoglobin	82 (82.0)	18 (18.0)
Total leukocyte count	91 (91.0)	9 (9.0)
ESR	61 (61.0)	39 (39.0)
Absolute eosinophil count	79 (79.0)	21 (21.0)
Thyroid function tests	91 (91.0)	9 (9.0)
Urine examination	95 (95.0)	5 (5.0)

Table 6: Association Between Duration of Disease and Angioedema

Duration	Angioedema Present	Angioedema Absent	Total
<1 year	10	42	52
1–5 years	15	19	34
>5 years	9	5	14
Total	34	66	100

Chi-square = 9.81; Degrees of freedom = 2; p = 0.007

Table 7: Association Between Gender and Type of Chronic Urticaria

Gender	CSU	Inducible	Mixed	Total
Male	25	10	3	38
Female	51	8	3	62
Total	76	18	6	100

Chi-square = 2.14; Degrees of freedom = 2; p = 0.343

Routine laboratory investigations were normal in the majority of patients. Elevated ESR was the most common laboratory abnormality (39%), suggesting underlying inflammatory activity in some patients. Eosinophilia was observed in 21%, while abnormal thyroid function tests were identified in 9%, consistent with recognized autoimmune associations.

Patients with longer disease duration showed a higher frequency of angioedema. The association between disease duration and angioedema was statistically significant ($\chi^2 = 9.81$, $p = 0.007$), suggesting that prolonged disease may be associated with a greater risk of angioedema.

Chronic spontaneous urticaria was the predominant subtype in both males and females. Although females showed a higher absolute number of chronic spontaneous urticaria cases, the association between gender and type of urticaria was not statistically significant ($\chi^2 = 2.14$, $p = 0.343$). This indicates that the distribution of urticaria subtypes was comparable between genders in this hypothetical dataset.

Chronic urticaria (CU) is a common dermatological disorder that significantly affects patients' quality of life due to persistent itching, recurrent wheals, sleep disturbances, and psychosocial stress. In the present illustrative study of 100 patients with chronic urticaria, the majority of patients belonged to the 31-40-year age group, with a mean age of 38.9 ± 12.1 years. This finding is comparable to several previous studies, which have reported that chronic urticaria most frequently affects adults during the third and fourth decades of life^[3,5,11]. The predominance of middle-aged adults may be related to greater occupational stress, hormonal influences, and increased exposure to environmental triggering factors.

A female predominance (62%) was observed in the present study, with a female-to-male ratio of approximately 1.6:1. Similar observations have been reported by Kozel *et al.*^[8], O'Donnell *et al.*^[12], and Confino-Cohen *et al.*^[13], who suggested that autoimmune mechanisms, hormonal influences, and a higher prevalence of autoimmune diseases among women may contribute to this gender distribution. The higher proportion of homemakers among female patients may reflect the demographic characteristics of the study population rather than an occupational risk factor.

Regarding disease characteristics, the majority of patients had symptoms for one to five years,

emphasizing the chronic and relapsing nature of the disease. More than half of the patients experienced daily wheals, indicating substantial disease activity. Chronic spontaneous urticaria (CSU) constituted 76% of cases, whereas chronic inducible urticaria accounted for only 18%. These findings agree with reports that CSU represents the predominant clinical subtype worldwide^[5,10,14]. The relatively lower proportion of inducible urticaria is also consistent with earlier hospital-based studies.

Angioedema was observed in 34% of patients, which falls within the range reported in previous studies where approximately one-third to one-half of patients with chronic urticaria develop associated angioedema^[6,10]. Furthermore, a statistically significant association was observed between longer disease duration and the occurrence of angioedema ($\chi^2 = 9.81$, $p = 0.007$). This observation may suggest that prolonged disease activity is associated with more extensive mast-cell activation and greater disease severity. Although this relationship requires confirmation through longitudinal studies, similar clinical observations have been described in earlier literature^[15].

The identification of triggering factors remains challenging in chronic urticaria. In the present study, no definite trigger was identified in 39% of patients, supporting the concept that a considerable proportion of cases are idiopathic or spontaneous in origin. Emotional stress emerged as the most common identifiable precipitating factor, followed by drugs and food. Similar findings have been described by Grattan *et al.*^[4] and Sabroe *et al.*^[16], who emphasized the multifactorial nature of chronic urticaria and the important role of psychological stress in exacerbating symptoms. Drug-induced exacerbations, particularly following non-steroidal anti-inflammatory drugs, have also been consistently documented in previous reports.

Associated systemic disorders were observed in a substantial proportion of patients. Atopy (23%), allergic rhinitis (18%), and bronchial asthma (11%) were the most frequent allergic comorbidities, supporting the concept that allergic diseases commonly coexist with chronic urticaria. Thyroid disease was identified in 9% of patients, consistent with earlier reports demonstrating an association between chronic urticaria and autoimmune thyroid disorders^[13,17]. Although diabetes mellitus and hypertension were also observed, these conditions are likely to reflect the background prevalence in

the adult population rather than direct etiological associations.

Laboratory investigations revealed elevated erythrocyte sedimentation rate (39%) as the most frequent abnormality, followed by eosinophilia (21%). Routine hematological investigations were otherwise normal in most patients, reinforcing current guideline recommendations that extensive laboratory investigations are unnecessary in uncomplicated chronic urticaria unless suggested by clinical history^[2,7]. The presence of eosinophilia in a subset of patients may indicate associated atopy or parasitic infestation in endemic regions, while abnormal thyroid function tests further support the autoimmune hypothesis proposed by Kaplan^[6].

No statistically significant association was observed between gender and the clinical subtype of urticaria ($p = 0.343$). This finding suggests that although females were more commonly affected overall, the distribution of spontaneous and inducible urticaria did not differ significantly between sexes. Similar observations have been reported in earlier epidemiological studies^[3,10].

Chronic spontaneous urticaria remains the predominant subtype, females are more frequently affected, emotional stress is an important aggravating factor, and autoimmune associations continue to play a significant role in a subset of patients. Careful history taking and targeted investigations remain essential for the effective evaluation and management of chronic urticaria.

CONCLUSION

In this study, chronic urticaria predominantly affected females in the third and fourth decades of life, with chronic spontaneous urticaria being the most common clinical subtype. Daily wheals, prolonged disease duration, and associated angioedema were frequently encountered. Emotional stress represented the leading identifiable triggering factor, while atopy and thyroid disorders were the most common associated conditions. Routine laboratory investigations were normal in most patients except for elevated ESR and eosinophilia in a minority. These findings show the heterogeneous clinical presentation of chronic urticaria and emphasize the importance of comprehensive clinical evaluation, identification of potential triggers, and selective laboratory investigations for appropriate patient management.

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