International Journal of Research in Medical Sciences
Hashem MA et al. Int J Res Med Sci. 2026 Jun;14(6):2267-2271
www.msjonline.org
pISSN 2320-6071 | eISSN 2320-6012
DOI: https://dx.doi.org/10.18203/2320-6012.ijrms20261663

Original Research Article

Patterns and management outcomes of urticaria in a tertiary hospital setting

M. Abul Hashem[1]*, M. Haroon Ur Rashid[2], M. Hasnainul Islam[3], Sanjida Fardous[4], Mohammed Saiful Islam[5]

[1]Department of Dermatology, Railway General Hospital, Chittagong, Bangladesh
[2]Department of Dermatology and Venereology, MH Somorita Medical College Hospital, Dhaka, Bangladesh
[3]Department of Dermatology and Venereology, Bikrampur Bhuiyan Medical College and Hospital, Munshiganj, Bangladesh
[4]Department of Dermatology and Venereology, Mymensingh Medical College Hospital, Mymensingh, Bangladesh
[5]Department of Skin, Venereology and Dermatology, Shaheed Tajuddin Ahmed Medical College Hospital, Gazipur, Bangladesh

Received: 03 May 2026
Revised: 15 April 2026
Accepted: 20 April 2026

***Correspondence:**
Dr. M. Abul Hashem,
E-mail: kariul@hotmail.com

ABSTRACT

Background: Urticaria is a common pruritic wheal disorder, with or without angioedema, classified as acute or chronic. Chronic urticaria often recurs, impairs quality of life, and requires stepwise antihistamine-based treatment. However, local data on disease patterns and treatment outcomes in Bangladesh remain limited.
Methods: This observational study was conducted at the Department of Dermatology and Venereology, Railway General Hospital, CRB, Chittagong, Bangladesh, from January to December 2025. A total of 125 consecutive patients with urticaria were enrolled. Cases were classified as acute or chronic, with chronic urticaria further categorized into chronic spontaneous urticaria (CSU), chronic inducible urticaria (CIndU), or mixed. Disease severity was assessed using UAS7. Treatment patterns and 4-week outcomes were recorded.
Results: Of the patients, 58.4% were female and 51.2% were aged 20-39 years. Chronic urticaria accounted for 63.2% of cases, predominantly CSU (55.2%). Angioedema occurred in 30.4%, and generalized wheals in 73.6%. Triggers were unidentified in 32.0%, while stress (41.6%), foods (26.4%), drugs (22.4%), and infections (19.2%) were common. Atopy was present in 39.2% and thyroid disease in 12.0%. Moderate-to-severe UAS7 was observed in 54.4%, with 47.2% reporting sleep disturbance. All patients received second-generation antihistamines; 44.8% required up-dosing and 32.8% received short-term steroids. At 4 weeks (92.0% follow-up), 64.4% achieved complete or well-controlled status, 15.7% relapsed, and 12.0% reported adverse effects.
Conclusions: Chronic urticaria, mainly CSU, predominated with moderate-to-severe activity at presentation. Most patients achieved symptom control within 4 weeks using stepwise antihistamine therapy, though up-dosing was frequently required and some remained uncontrolled or relapsed.

Keywords: Chronic urticaria, Chronic spontaneous urticaria, UAS7, Antihistamine up-dosing

INTRODUCTION

Urticaria is a common skin condition that is defined by the presence of transient wheals, erythema, and severe itching, with or without angioedema, due to the activation of mast cells and basophils in the superficial dermis. The immune system of the skin and its microvasculature are key components of its pathophysiology due to the release of histamine and other inflammatory mediators. Based on disease duration, urticaria can be classified as acute (less

than 6 weeks) or chronic (more than 6 weeks), with the latter often recurrent and more difficult to treat.[1] Urticaria is a major public health problem globally. The lifetime prevalence of urticaria of any kind has been estimated to be up to 20%, while chronic urticaria affects 0.5-1% of the population in general.[2] It has been found to contribute significantly to years lived with disability, especially in women and those in the working age group, as per the Global Burden of Disease 2019 report.[3] In Asia, the prevalence and severity of urticaria are increasing due to environmental factors, dietary patterns, infections, and the fast pace of urbanization.[4] Urticaria is a common cause of outpatient visits to dermatology clinics in South Asian countries like Bangladesh, but there is a lack of data on its prevalence in the population.[5] Management of urticaria focuses on the control of the disease, prevention of the progression of the disease, and improvement of the quality of life. The management guidelines for urticaria, according to international guidelines, recommend the use of second-generation antihistamines as first-line treatment options, with dose escalation and add-on therapy with leukotriene receptor antagonists, systemic corticosteroids, and biologic agents like omalizumab for the treatment of resistant CSU.[1,6] However, the effectiveness of the management of the disease in real-life settings is limited by the heterogeneity of the disease process, patient compliance, and the availability of resources.[7] Substantial research has been conducted in Europe and North America to evaluate the disease burden, quality of life, and therapeutic outcomes in urticaria patients.[8] The clinical characteristics of urticaria have been described to be different, including a high incidence of inducible urticaria, delayed presentation, and inadequate escalation of treatment in chronic urticaria patients in the Asian population.[4,9] Urticaria has been reported to be a significant cause of skin diseases in Bangladesh, with a high incidence of chronic urticaria being associated with autoimmune diseases like thyroid disorders.[10]

However, detailed evaluations assessing patterns of urticaria presentation and management outcomes in tertiary care settings are scarce. Therefore, this study aims to evaluate the patterns and management outcomes of urticaria in a tertiary hospital setting.

METHODS

The observational study was conducted at the Department of Dermatology and Venereology, Railway General Hospital, CRB, Chittagong, Bangladesh, over a 12-month period, January 2025 to December 2025. A total of 125 consecutive patients with clinical urticaria, with or without angioedema, were enrolled following informed consent. Patients exhibiting lesions suggestive of urticarial vasculitis, angioedema without wheals, or other primary dermatoses were excluded. Data were collected using a structured case record form, which included socio-demographic variables, disease duration and pattern, suspected triggers, comorbidities, and principal clinical features. Urticaria was classified as acute (less than 6 weeks) or chronic (6 weeks or longer); chronic cases were further categorized as CSU, CIndU, or mixed disease, based on patient history and bedside provocation tests where appropriate. Baseline disease activity was assessed using the Urticaria Activity Score over 7 days (UAS7), and sleep disturbance was documented as present or absent. Laboratory investigations, such as complete blood count, erythrocyte sedimentation rate (ESR), C-reactive protein (CRP), total immunoglobulin E (IgE), and thyroid function tests, were performed as clinically indicated.

Management was based on a stepwise protocol focused on second-generation H1-antihistamines, with dose escalation up to four times the standard dose when necessary. Short courses of systemic corticosteroids were allowed for acute exacerbations, and the use of additional therapies was documented. Participants were reassessed at 4 weeks, and outcomes were classified as complete control, well controlled, partially controlled, or uncontrolled. Relapse rates and adverse effects were also recorded. Data analysis was performed descriptively using frequencies and percentages in SPSS version 26.0. Ethical approval was obtained from the institutional ethics committee, and informed consent was taken from all participants.

RESULTS

Table 1 indicates that the cohort was predominantly female (n=73, 58.4%). The majority of patients were aged 20-39 years, accounting for 51.2% of the sample (n=34 aged 20-29 years; n=30 aged 30-39 years). Urban residents represented 57.6% (n=72), whereas 42.4% (n=53) resided in the rural areas.

Table 1: Socio-demographic profile of participants, (n=125).

Variables	Category	N	Percentages (%)
Age group (in years)	<20	8	6.4
	20-29	34	27.2
	30-39	30	24
	40-49	26	20.8
	≥50	27	21.6
Sex	Male	52	41.6
	Female	73	58.4
Residence	Urban	72	57.6
	Rural	53	42.4

Table 2 demonstrates a predominance of chronic urticaria, with 79 cases (63.2%), compared to 46 cases (36.8%) of acute presentations. CSU represented the most frequent pattern, accounting for 69 cases (55.2%), followed by inducible urticaria with 31 cases (24.8%) and mixed disease with 25 cases (20.0%). Angioedema was observed in 38 cases (30.4%) of urticaria, and the eruption was generalized in 92 cases (73.6%).

Table 2: Urticaria pattern and key clinical features, (n=125).

Variables	Category	N	Percentage (%)
Duration	Acute (<6 weeks)	46	36.8
	Chronic (≥6 weeks)	79	63.2
Type	CSU	69	55.2
	CIndU	31	24.8
	Mixed	25	20
Angioedema	Present	38	30.4
Distribution	Generalized	92	73.6

Table 3 indicates that a specific trigger was not identified in 40 cases (32.0%). Among the reported aggravating factors, psychological stress was the most frequent (52 cases, 41.6%), followed by foods (33 cases, 26.4%), drugs (28 cases, 22.4%), and recent infections (24 cases, 19.2%). Comorbidity profiling revealed an atopic background in 49 cases (39.2%) and thyroid disease in 15 cases (12.0%).

Table 3: Major triggers and comorbidity burden, (n=125).

Variables	Category	N	Percentage (%)
Trigger profile	No identifiable trigger	40	32
	Psychological stress	52	41.6
	Foods	33	26.4
	Drugs (any)	28	22.4
	Recent infection	24	19.2
Comorbidity	Any atopy	49	39.2
	Thyroid disease	15	12

Table 4 indicates a considerable severity burden at baseline. Moderate UAS7 scores (16-27) were most prevalent, observed in 41 participants (32.8%), while severe disease (28-42) affected 27 individuals (21.6%). Only 23 participants (18.4%) were in the well-controlled range (UAS7 0-6) at presentation. Additionally, 59 participants (47.2%) reported sleep disturbance, highlighting a significant impact on quality of life.

Table 4: Baseline severity (UAS7) and sleep impact, (n=125).

Variables	Category	N	Percentage (%)
UAS7 category	0-6 (well controlled)	23	18.4
	7-15 (mild)	34	27.2
	16-27 (moderate)	41	32.8
	28-42 (severe)	27	21.6
Sleep disturbance	Yes	59	47.2

Table 5 presents the management strategies. All patients received a second-generation antihistamine. Up-dosing to two to four times the standard antihistamine dose was necessary in 56 patients (44.8%). Short courses of systemic corticosteroids were administered in 41 patients (32.8%). Add-on montelukast was prescribed in 22 patients (17.6%). Biologic escalation was rare, with omalizumab used in only 3 patients (2.4%).

Table 5: Treatment pattern of the study population, (n=125).

Treatments	N	Percentage (%)
2nd generation antihistamine (any)	125	100
Up-dosed antihistamine (2×-4×)	56	44.8
Short course systemic corticosteroid	41	32.8
Add-on montelukast	22	17.6
Omalizumab	3	2.4

Table 6 summarizes the 4-week outcomes for the 115 participants (92.0%) who completed follow-up. Complete control was observed in 33 participants (28.7%), while 41 (35.7%) achieved well-controlled status, resulting in an overall controlled rate of 64.4% at 4 weeks. In contrast, 29 participants (25.2%) remained partially controlled and 12 (10.4%) were classified as uncontrolled. Relapse was documented in 18 participants (15.7%), and adverse effects were reported by 15 (12.0%) of the cohort.

Table 6: Management outcomes at 4 weeks, (n=115).

Outcomes	Category	N	Percentage (%)
Symptom control	Complete control	33	28.7
	Well controlled	41	35.7
	Partially controlled	29	25.2
	Uncontrolled	12	10.4
Relapse	Yes	18	15.7
Adverse effects (overall)	Yes	15	12

DISCUSSION

Within this tertiary-hospital cohort (n=125), chronic urticaria (63.2%) was more prevalent than acute disease, with a notable female predominance (58.4%) and a peak incidence among individuals aged 20-39 years (51.2%). This distribution is consistent with current epidemiologic evidence indicating that chronic urticaria is more frequent in women and commonly affects those in economically active age groups, though prevalence rates vary depending on setting, case definition, and healthcare access. Registry and multicenter studies also report a female predominance

and significant outpatient burden, supporting observation that tertiary clinics often manage more persistent and symptomatic cases compared to community-based estimates.[11,12]

CSU represented predominant clinical phenotype (55.2%), with inducible and mixed forms accounting for remainder. This finding aligns with contemporary classifications that identify CSU as the principal chronic subtype in most series.[11,13] Angioedema was present in 30.4% of patients, a proportion within the internationally reported range, though lower than in cohorts with a higher prevalence of antihistamine-refractory/inadequately controlled CSU, where angioedema is observed in approximately 40-50% of cases. These differences likely reflect variations in case-mix, severity distribution, and ascertainment methods, as angioedema may be under-recognized without structured assessment and standardized tools.[14-16]

Triggers were often non-specific, with 32% of patients reporting no identifiable precipitant, consistent with literature indicating that many individuals with CSU cannot reliably identify external causes. Stress was the most commonly perceived aggravating factor (41.6%), followed by foods (26.4%), drugs (22.4%), and infections (19.2%). Prominence of stress as a reported trigger is well-documented in real-world surveys and psychosocial research, and may interact bidirectionally with disease activity. Urticaria can exacerbate stress and disrupt sleep, while stress may heighten itch perception and symptom awareness. Observed high rate of sleep disturbance (47.2%) and baseline severity profile, with over half of patients exhibiting moderate to severe activity by UAS7 categories, are consistent with evidence that CSU significantly impairs QoL particularly among those with higher disease activity and concomitant angioedema.[14,17,18]

Comorbidity patterns observed in this cohort were consistent with international findings. Atopic background was present in 39.2% of patients, a prevalence commonly reported in urticaria populations. The presence of thyroid disease in 12% of patients supports established association with autoimmune conditions. Meta-analytic data indicate significantly increased odds of thyroid autoimmunity in chronic urticaria, supporting rationale for targeted thyroid screening in patients with persistent symptoms, systemic features, refractory disease/suggestive history.[19,20]

Management strategies predominantly adhered to guideline-based stepwise care. All patients received second-generation H1-antihistamines, with 44.8% requiring dose escalation, a practice recommended up to fourfold before considering further escalation. Short courses of corticosteroids were administered in approximately one-third of cases, reflecting real-world management of acute flares, although guidelines advise minimizing corticosteroid use due to potential cumulative harms. The low rate of omalizumab use (2.4%) contrasts with international cohorts, where biologic escalation is more common in structured follow-up settings. This discrepancy likely reflects differences in cost, access, and referral pathways in Bangladesh.[11,13,21]

At four weeks, 64.4% of patients achieved complete/well-controlled disease status, while 10.4% remained uncontrolled and 15.7% experienced relapse. These findings highlight the need for proactive escalation, trigger counseling, adherence monitoring, and comorbidity management in significant minority of patients. Implementing routine UAS7 monitoring, structured angioedema assessment, and timely escalation to third-line therapy where feasible may reduce persistent symptoms, work impairment, and repeated corticosteroid exposure in tertiary care settings.[11,14,17]

Limitations

The use of single-center tertiary sampling restricts generalizability. Reliance on self-reported triggers, a brief follow-up period of four weeks, and limited access to advanced testing and biologic therapies may have affected the study outcomes.

CONCLUSION

In this tertiary-hospital cohort, chronic urticaria, predominantly CSU, was the most common presentation, with substantial baseline symptom burden and frequent sleep disturbance. Most patients achieved control within 4 weeks using guideline-based antihistamine therapy, although nearly half required up-dosing and a minority remained uncontrolled or relapsed. Strengthening routine severity monitoring, comorbidity screening, and timely step-up care could improve outcomes and reduce reliance on systemic steroids in resource-limited settings.

Funding: No funding sources
Conflict of interest: None declared
Ethical approval: The study was approved by the Institutional Ethics Committee

REFERENCES

1. Zuberbier T, Aberer W, Asero R, Abdul Latiff AH, Baker D, Ballmer-Weber B, et al. The EAACI/GA²LEN/EDF/WAO guideline for the definition, classification, diagnosis and management of urticaria. Allergy. 2018;73(7):1393-414.
2. Gonçalo M, Gimenéz-Arnau A, Al-Ahmad M, Ben-Shoshan M, Bernstein JA, Ensina LF, et al. The global burden of chronic urticaria for the patient and society. Brit J Dermatol. 2021;184(2):226-36.
3. Vos T, Lim SS, Abbafati C, Abbas KM, Abbasi M, Abbasifard M, et al. Global burden of 369 diseases and injuries in 204 countries and territories, 1990-2019: a systematic analysis for the Global Burden of Disease Study 2019. Lancet. 2020;396(10258):1204-22.
4. Fricke J, Ávila G, Keller T, Weller K, Lau S, Maurer M, et al. Prevalence of chronic urticaria in children

and adults across the globe: systematic review with meta-analysis. Allergy. 2020;75(2):423-32.
5. Hasan MK, Haque E, Al Miraj AK, Nath SK, Sarker SC. Skin diseases pattern in a tertiary care Hospital, developing countries like Bangladesh. Contact Dermatitis. 2024;77:5.
6. Maurer M, Rosén K, Hsieh HJ, Saini S, Grattan C, Gimenéz-Arnau A, et al. Omalizumab for the treatment of chronic idiopathic or spontaneous urticaria. N Eng J Med. 2013;368(10):924-35.
7. Kaplan AP, Greaves M. Pathogenesis of chronic urticaria. Clin Experime Allergy. 2009;39(6):777-87.
8. Balp MM, Vietri J, Tian H, Isherwood G. The impact of chronic urticaria from the patient's perspective: a survey in five European countries. Patient-Patient-Centered Outcomes Res. 2015;8(6):551-8.
9. Kang MJ, Kim HS, Kim HO, Park YM. The impact of chronic idiopathic urticaria on quality of life in Korean patients. Ann Dermatol. 2009;21(3):226-9.
10. Noor SF, Jannat S, Khan SI, Azzad MA. Clinical Association of Anti-TPO in Patients with Chronic Urticaria. J Rangpur Med College. 2023;8(2):29-33.
11. Zuberbier T, Abdul Latiff AH, Abuzakouk M, Aquilina S, Asero R, Baker D, et al. The international EAACI/GA²LEN/EuroGuiDerm/APAAACI guideline for the definition, classification, diagnosis, and management of urticaria. Allergy. 2022;77(3):734-66.
12. Tayefi M, Bradley M, Neijber A, Fastberg A, Ceynowa D, Eriksson M. Chronic urticaria: a Swedish registry-based cohort study on population, comorbidities and treatment characteristics. Acta Dermato-Venereologica. 2022;102:737.
13. Kolkhir P, Pogorelov D, Darlenski R, Caminati M, Tanno LK, Le Pham D, et al. Management of chronic spontaneous urticaria: a worldwide perspective. World Allergy Organ J. 2018;11:14.
14. Maurer M, Abuzakouk M, Bérard F, Canonica W, Oude Elberink H, Giménez-Arnau A, et al. The burden of chronic spontaneous urticaria is substantial: real-world evidence from ASSURE-CSU. Allergy. 2017;72(12):2005-16.
15. Sussman G, Abuzakouk M, Bérard F, Canonica W, Oude Elberink H, Giménez-Arnau A, et al. Angioedema in chronic spontaneous urticaria is underdiagnosed and has a substantial impact: analyses from ASSURE-CSU. Allergy. 2018;73(8):1724-34.
16. Maurer M, Giménez-Arnau A, Ensina LF, Chu CY, Jaumont X, Tassinari P. Chronic urticaria treatment patterns and changes in quality of life: AWARE study 2-year results. World Allergy Organization J. 2020;13(9):100460.
17. Wagner N, Zink A, Hell K, Reinhardt M, Romer K, Hillmann E, et al. Patients with chronic urticaria remain largely undertreated: results from the DERMLINE online survey. Dermatol Therapy. 2021;11(3):1027-39.
18. Reeshma J, Mariyath OK, Narayan KD, Devi K, Ajithkumar K. Quality of Life and Perceived Stress in Chronic Spontaneous Urticaria: Counting the Burden. Indian Dermatol Online J. 2024;15(3):460-3.
19. Tienforti D, Di Giulio F, Spagnolo L, Castellini C, Totaro M, Muselli M, et al. Chronic urticaria and thyroid autoimmunity: A meta-analysis of case–control studies. J Endocrinolog Investigat. 2022;45(7):1317-26.
20. Wang X, Liu LJ, Li LF, Shi XD, Shen YW. Clinical features of urticaria: results from a hospital-based multicenter study in China. Front Med. 2022;9:899857.
21. Chu CY, Al Hammadi A, Agmon-Levin N, Atakan N, Farag A, Arnaout RK, et al. Clinical characteristics and management of chronic spontaneous urticaria in patients refractory to H1-antihistamines in Asia, Middle-East and Africa: results from the AWARE-AMAC study. World Allergy Organiz J. 2020;13(4):100117.

Cite this article as: Hashem MA, Ur Rashid MH, Islam MH, Fardous S, Islam MS. Patterns and management outcomes of urticaria in a tertiary hospital setting. Int J Res Med Sci 2026;14:2267-71.