

# A Study on the Clinical Characteristics and Triggers of Urticaria in Adults

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## ABSTRACT

**Background:** Urticaria is a common skin disorder with transient wheals and angioedema, triggered by physical factors, drugs, foods, infections, or stress. Chronic cases often have no clear cause. It can recur and affect quality of life. Management includes trigger avoidance and antihistamines. This study aimed to evaluate the clinical features and common triggers of urticaria in adults. **Methods & Materials:** A cross-sectional study of 48 adults with urticaria was conducted at Upazila Health Complex, Kapasia, Gazipur, Bangladesh, from January to December 2024. Data on clinical features, triggers, and medical history were collected and analyzed using SPSS. Informed consent and confidentiality were ensured. **Results:** In a group of 48 adults (average age  $34.6 \pm 11.2$  years), 30 (62.5%) were women. Chronic urticaria occurred more frequently (31; 64.6%) than acute (17; 35.4%), with chronic spontaneous urticaria comprising 27 cases (56.3%). All patients (48; 100%) experienced pruritus, while angioedema and generalized wheals occurred in 31.3% (15) and 60.4% (29), respectively. Physical triggers (20; 41.7%) and stress (14; 29.2%) were most common. Chronic urticaria was associated with female sex, angioedema, stress, and physical triggers ( $p < 0.05$ ). **Conclusion:** Chronic urticaria, mainly affecting females and young adults, is often triggered by physical factors and stress, with many cases idiopathic. Pruritus was universal, and angioedema occurred in one-third. Female sex, angioedema, stress, and physical triggers were linked to chronicity, highlighting the need for tailored management.

**Keywords:** Urticaria, Clinical Characteristics, Triggers, Adults

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## Introduction

Urticaria is a common dermatological condition characterized by the sudden appearance of transient wheals (hives), angioedema, or a combination of both [1]. It is an inflammatory skin disorder affecting up to 20% of the global population during their lifetime [2]. Urticaria is caused by mast cell-mediated vascular dilation and increased permeability. While histamine produces the typical short-lived wheal, other mediators—such as prostaglandins, leukotrienes, cytokines, and chemokines—also contribute to the diverse clinical features and variable course of the disease [3]. Adult urticaria can be triggered by physical stimuli (pressure, cold, heat, dermatographism), drugs (especially NSAIDs), foods, infections, and stress, though chronic spontaneous urticaria often has no clear trigger [4].

The clinical manifestations of urticaria are highly diverse, encompassing a broad range of presentations across different subtypes. Moreover, multiple urticaria subtypes may coexist simultaneously in a single patient [5]. It presents as rapidly appearing pale to erythematous wheals anywhere on the skin that resolve within 1–24 hours, though new lesions may recur. Angioedema commonly affects the face and extremities, develops quickly, and may persist for several days [6]. It is usually diagnosed clinically, but can be confused with drug eruptions, viral rashes,

connective tissue or photosensitive diseases, urticaria pigmentosa, urticarial vasculitis, and certain syndromes. Detailed patient history—including onset, lesion development and location, systemic symptoms, diet, stress, and medication use—is crucial to identify the cause [7]. In adults, management focuses on avoiding known triggers, including allergens, NSAIDs, alcohol, and tight clothing, which can exacerbate symptoms. If avoidance is insufficient or triggers are unknown, first-line treatment consists of once-daily, non-sedating second-generation H1-antihistamines such as loratadine, cetirizine, fexofenadine, desloratadine, or levocetirizine [6].

Globally, urticaria affects an estimated 65.1 million individuals, representing a considerable and increasing public health burden with higher prevalence among women and marked regional and socioeconomic variations [8]. Chronic spontaneous urticaria in adults is often characterized by a prolonged course, recurrent symptoms, and significant impairment of quality of life, commonly affecting young to middle-aged individuals with a female predominance and frequent comorbidities [9]. In Bangladesh and similar developing countries, urticaria is among the common dermatological conditions encountered in tertiary care hospitals, reflecting both high prevalence and

persistent symptomatology [10]. Additionally, infectious factors such as *Helicobacter pylori* have been implicated in chronic idiopathic urticaria in certain populations, suggesting a multifactorial etiology [11]. Therefore, the aim of this study was to assess the clinical characteristics and identify common triggering factors of urticaria among adult patients.

## Methods & Materials

This hospital-based cross-sectional study was carried out at the Upazila Health Complex, Kapasia, Gazipur, Dhaka, Bangladesh, over a one-year period from January 2024 to December 2024 to determine the clinical characteristics and triggering factors of urticaria among adult patients. A total of 48 adult patients aged 18 years and above who were clinically diagnosed with urticaria and attended the outpatient department during the study period were enrolled using consecutive sampling.

Patients presenting with features of acute or chronic urticaria, with or without angioedema, were included in the study. Patients with urticarial vasculitis, hereditary angioedema, other chronic dermatological conditions mimicking urticaria, severe systemic illness, or those unwilling to provide informed consent were excluded. Data were collected through face-to-face interviews using a pretested structured

questionnaire, followed by detailed clinical examination. The questionnaire captured information on sociodemographic variables, duration and pattern of urticaria, frequency and distribution of wheals, presence of angioedema, associated symptoms such as pruritus, and possible triggering factors including foods, drugs (particularly NSAIDs), infections, physical stimuli (pressure, cold, heat, exercise), stress, and environmental factors. Relevant personal and family history, comorbid conditions, and medication use were also recorded. The diagnosis of urticaria was made clinically by the attending physician based on standard diagnostic criteria. Collected data were checked for completeness, coded, and entered into

Statistical Package for the Social Sciences (SPSS) version 25 software for analysis. Descriptive statistics were used to summarize the findings, with results expressed as frequencies, percentages, mean, and standard deviation as appropriate. Written informed consent was taken from all participants, and confidentiality and anonymity were strictly maintained throughout the research process.

**Results**

A total of 48 adult patients with urticaria were included in the analysis. The mean age of participants was 34.6 ± 11.2 years. Females constituted 62.5% of the study population. Chronic urticaria was more common than acute urticaria.

Table I shows that the majority of the study participants were aged 21–40 years (56.3%), indicating that urticaria was most commonly observed among young to middle-aged adults. Females (62.5%) outnumbered males, demonstrating a clear female predominance. Most participants resided in rural areas (66.7%), reflecting the catchment population of the study setting. Regarding occupation, homemakers (31.3%) and individuals engaged in service or business (29.2%) constituted the largest groups, followed by students (20.8%), suggesting that urticaria affected individuals across diverse occupational backgrounds.

**Table I**  
Sociodemographic Characteristics of Study Participants (n = 48).

Variable	Category	Frequency (n)	Percentage (%)
Age (years)	≤20	6	12.5
	21–40	27	56.3
	41–60	15	31.2
Sex	Male	18	37.5
	Female	30	62.5
Residence	Rural	32	66.7
	Urban	16	33.3
Occupation	Homemaker	15	31.3
	Service/Business	14	29.2
	Student	10	20.8
	Others	9	18.7

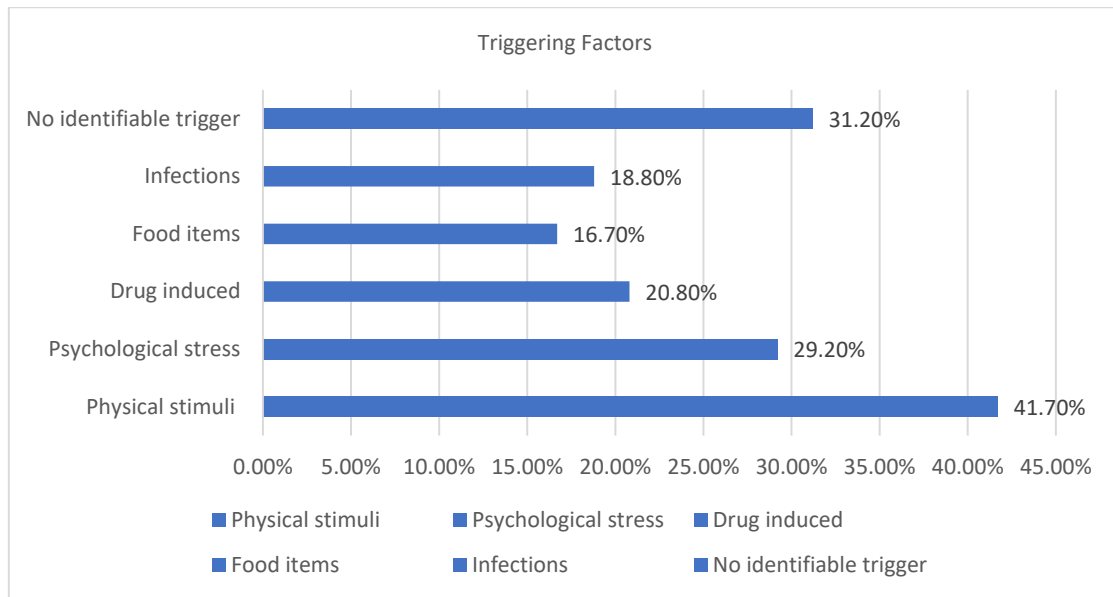
Table II demonstrates that chronic urticaria (64.6%) was more common than acute urticaria among the study participants. Among subtypes, chronic spontaneous urticaria predominated (56.3%), while inducible urticaria and overlapping forms

were less frequent. Pruritus was a universal symptom, reported by all participants, highlighting it as a hallmark feature of urticaria. Angioedema was present in 31.3% of patients, primarily affecting the face and extremities. The distribution of wheals was

more often generalized (60.4%) than localized, and the majority of lesions resolved within 24 hours (83.3%), consistent with the transient nature of typical urticarial wheals.

**Table II**  
Clinical Characteristics of Urticaria among Adults (n = 48).

Clinical Variable	Category	Frequency (n)	Percentage (%)
Type of urticaria	Acute (<6 weeks)	17	35.4
	Chronic (≥6 weeks)	31	64.6
Subtype	Chronic spontaneous urticaria	27	56.3
	Inducible urticaria	12	25.0
	Overlapping types	9	18.7
Pruritus	Present	48	100.0
Angioedema	Present	15	31.3
Distribution of wheals	Localized	19	39.6
	Generalized	29	60.4
Duration of wheals	<24 hours	40	83.3
	≥24 hours	8	16.7



**Figure 1** Reported Triggering and Aggravating Factors of Urticaria (n = 48).

Figure 1 shows that physical stimuli such as pressure, cold, heat, or sweating were the most commonly reported triggers, affecting 41.7% of participants. Psychological stress was identified as an aggravating factor in 29.2%, while drug-induced urticaria, particularly due to NSAIDs, was reported by 20.8% of patients. Food-related triggers and recent infections (URTI, dental, GI) were less common, reported by 16.7% and 18.8%, respectively. Notably, 31.2% of patients had no identifiable trigger, reflecting the prevalence of chronic spontaneous urticaria and the multifactorial

nature of the condition. The presence of multiple triggers in some patients highlights the complex etiology of urticaria.

Table III shows chronic urticaria was significantly more common in females (71.0%) than males (29.0%) (p = 0.041), consistent with Comert et al., who also reported a female predominance and identified female sex as a predictor for progression to chronic urticaria [23]. The presence of angioedema was also significantly associated with chronic urticaria (38.7% vs. 17.6%; p = 0.032).

Psychological stress as a trigger was reported more frequently in chronic cases (35.5%) than in acute cases (17.6%) (p = 0.048). Additionally, physical triggers such as pressure, cold, or heat were more common in chronic urticaria (48.4%) compared to acute urticaria (29.4%) (p = 0.036). These findings suggest that chronic urticaria is more likely to be associated with female sex, angioedema, stress, and physical triggers, highlighting potential factors influencing disease persistence and severity.

**Table III**  
Association between Selected Factors and Type of Urticaria (n = 48).

Variable	Acute Urticaria n (%)	Chronic Urticaria n (%)	p-value
<b>Sex</b>			
Male	9 (52.9)	9 (29.0)	0.041
Female	8 (47.1)	22 (71.0)	
<b>Angioedema</b>			
Present	3 (17.6)	12 (38.7)	0.032
Absent	14 (82.4)	19 (61.3)	
<b>Stress as trigger</b>			
Yes	3 (17.6)	11 (35.5)	0.048
No	14 (82.4)	20 (64.5)	
<b>Physical triggers (Pressure, cold, or heat)</b>			
Yes	5 (29.4)	15 (48.4)	0.036
No	12 (70.6)	16 (51.6)	

Note: p-values calculated using Chi-square test; p < 0.05 considered statistically significant.

**Discussion**

Most patients were young to middle-aged adults (56.3% aged 21–40, 31.2% aged 41–60), consistent with Kolkhir et al., who reported CSU mainly affects adults 20–50 years old [12]. The low proportion of ≤20 years (12.5%) likely reflects greater immune dysregulation, environmental exposure, and stress in working-age adults [12]. In our study, 62.5% of the patients were

women, indicating a distinct female dominance. This is consistent with Soong et al., who found 51.7% of females with an average age at diagnosis of 37.0 (17.1) years, reinforcing the significance of sex-linked immunological and hormonal influences in urticaria [13]. In our study, 66.7% of patients were rural. Jadhav et al., found higher urticaria risk in urban areas (RR = 2.81), suggesting that local

environmental and occupational factors shape residence-related differences in urticaria [14]. Homemakers were the largest group (31.3%), followed by service/business professionals (29.2%) and students (20.8%). This aligns with Kozel and Sabroe et al., who reported that domestic exposures trigger urticaria in homemakers (~30%) and occupational stress affects working adults (~28%),

supporting the multifactorial etiology observed in our study<sup>[15]</sup>.

In accordance with findings by Kolkhir et al., who observed CSU in roughly 60–70% of adult cases of chronic urticaria, chronic urticaria was more common than acute urticaria in this investigation, with chronic spontaneous urticaria (56.3%) being the predominant subtype.<sup>[12]</sup> Inducible urticaria (25.0%) and overlapping types (18.7%) were less common but made up a significant share, indicating the diversity of urticaria and supporting previous findings that inducible variations, constitute a significant clinical subgroup, while being less common than spontaneous urticaria<sup>[16]</sup>. Pruritus was documented by every patient (100%) in this study, similar to the results from Kulthanan et al., who observed pruritus in 98% of individuals with acute urticaria, validating it as the primary and most distressing symptom<sup>[17]</sup>. Angioedema affected the face and limbs in three quarters of cases, which is consistent with the 30–40% prevalence reported by Maurer et al. in patients with chronic spontaneous urticaria<sup>[18]</sup>. Generalized wheals occurred more often than localized lesions (60.4% compared to 39.6%), which is consistent with findings by Kolkhir et al., who documented generalized wheals in 56.7% and localized wheals in 43.3% of patients with chronic urticaria<sup>[12]</sup>. Furthermore, most wheals disappeared within 24 hours (83.3%), similar to the 82% noted by Kulthanan et al., highlighting the transient and self-limiting characteristics of typical urticarial lesions<sup>[17]</sup>.

Psychological Stress worsened urticaria in 29.2% of patients, similar to findings of stress-induced flares in roughly 32–35% of chronic urticaria cases. Urticaria caused by drugs, mainly from NSAIDs, was noted in 20.8%, aligning with previously reported sensitivities in 15–25% of adults<sup>[19]</sup>. Food-related triggers (16.7%) and infections (18.8%) were less common; notably, prior evidence suggests that while many patients report food reactions, only a small proportion have confirmed IgE-mediated allergy, indicating frequent self-perceived triggers<sup>[20]</sup>. Significantly, 31.2% of patients showed no identifiable trigger, aligning with findings that nearly one-third of chronic urticaria cases are idiopathic, highlighting the disease's heterogeneous nature<sup>[21]</sup>.

Chronic urticaria occurred significantly more frequently in females (71.0%) compared to males (29.0%;  $p = 0.041$ ), aligning with findings by Comert et al., who noted female gender as a predictor for developing chronic urticaria<sup>[22]</sup>. Consistent with previous findings, angioedema occurred more frequently in chronic urticaria (38.7%) than in acute cases (17.6%), reflecting a higher disease burden ( $p = 0.032$ )<sup>[23,24]</sup>. Psychological stress

(35.5% vs. 17.6%;  $p = 0.048$ ) and physical triggers like pressure, cold, or heat (48.4% vs. 29.4%;  $p = 0.036$ ) occurred more frequently in chronic urticaria, underscoring the influence of neuro-immuno-psychological and inducible elements on the disease's duration and intensity<sup>[18,25,26]</sup>.

### Conclusion

This study indicates that chronic urticaria is more prevalent than acute urticaria among adults, predominantly affecting females, particularly in younger to middle-aged individuals. Pruritus was prevalent, angioedema affected one-third of cases, and generalized wheals that resolved within 24 hours were common. Physical stimuli and stress were the most common triggers, although numerous cases were idiopathic. Chronic urticaria was notably linked to female gender, angioedema, stress, and physical triggers, highlighting the importance of personalized evaluation and treatment.

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