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## Triggering Factors in Patients Diagnosed Urticaria

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### ABSTRACT

**Background:** Urticaria is a skin disease that is common in all societies and characterized by itchy and edematous plaques that appear suddenly and disappear spontaneously within the same day. Urticaria that lasts for less than six weeks is called acute, while urticaria that lasts longer and can last for years is chronic. While antihistamines are preferred in the first place in treatment, other treatment options may be considered according to the treatment response. In addition to diagnosis and treatment, it is essential to identify and eliminate triggering factors. Common triggers include physical triggers, foods, medicines, fatigue, stress, infections, smoking, dust, pollen and the premenstrual period.

**Materials and Methods:** In our study, the files of 145 patients who applied to the dermatology outpatient clinic between 1 January 2019 and 1 September 2020 were retrospectively scanned.

**Results:** Ninety-one (62.7%) of the patients were female, 54 (37.2%) were male. Average age was 38.9. While triggering factors are seen in 62 (42.7%) of the patients; dermatographism was seen in 37 (25.5%) of the patients. Trigger factors were common in women and between the ages of 20 and 40. Physical triggers were the most common triggers, followed by foods and drugs.

**Conclusion:** Urticaria is a dermatological emergency affecting the patient's quality of life. Therefore, success in treatment is very important. Finding and removing triggering factors besides pharmacological treatment will significantly improve the patient's quality of life.

**Keywords:** Urticaria, Triggering factors, Physical triggers

### Introduction

Urticaria is a skin disease that is common in all societies and characterized by itchy and edematous plaques that appear suddenly and disappear spontaneously within 24 hours. It occurs for different reasons and different mechanisms and is classified in a heterogeneous way [1].

Apart from the acute forms of the disease that last less than about six weeks, there are chronic forms that last for years, their types with angioedema, and less frequent inducible or syndromic forms. Approximately half of the cases are accompanied by angioedema [2].

Urticaria significantly adversely affects the quality of life of patients, especially in its chronic forms, and can lead to socio-economic problems. Therefore, diagnosis and treatment selection is very important [3].

The choice of treatment is usually tailored to the duration, frequency and response of the attack and is individualized for each patient. In the treatment, second-generation H1 antihistamines, but also H2 antihistamines, hydroxyzine, doxepin, oral glucocorticoids, omalizumab/anti-immunoglobulin (Ig) E therapy, phototherapy, physical desensitization, immunomodulatory agents are used [4,5].



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In addition to pharmacological treatment, it is also important to find and avoid triggering factors. Common triggers include physical triggers (dermographism, cold urticaria, pressure urticaria, solar urticaria, heat urticaria, vibration angioedema, cholinergic urticaria, contact urticaria, aquagenic urticaria), foods (eggs, milk, soy, peanuts in children; fish, shellfish, seafood, nuts in adults), medicines [aspirin and other non-steroidal anti-inflammatory drugs (NSAIDs), angiotensin converting enzyme (ACE) inhibitors, codeine, penicillin], fatigue, stress, infections, smoking, dust, pollen and the premenstrual period [6,7,8].

In this study, it was aimed to determine the triggering factors in our patients with urticaria.

### Materials and Methods

One hundred forty-five patients who applied and treated in the Dermatology Department of Istanbul University-Cerrahpasa, Cerrahpasa Faculty of Medicine between 2019-2020 were included in the study. All the patients diagnosed with urticaria the files were examined and their age, gender, and predisposing factors were analyzed retrospectively.

### Statistical Analysis

Statistical analyzes were performed using Statistical Package for the Social Sciences version 21 software. The compliance of the variables to normal distribution was examined by visual (histogram and probability graphs) and analytical methods (Kolmogorov-Smirnov/Shapiro-Wilk tests). Descriptive analyzes were given using mean and standard deviation for normally distributed variables, median and interquartile range for non-normally distributed variables, and frequency tables for categorical variables.

### Results

Ninety-one (62.7%) of the patients were female, 54 (37.2%) were male. Average age was 38.9. While triggering factors are seen in 62 (42.7%) of the patients; dermographism was seen in 37 (25.5%) of the patients. Trigger factors were common in women and between the ages of 20 and 40. Physical triggers were the most common triggers, followed by foods and drugs (Table 1).

Aquagenic urticaria was the most common physical trigger. Fish and nuts were the most common causes of food-related urticaria. NSAID were held responsible for drug-related urticaria to a large extent. The least common trigger factor was the premenstrual period (Table 2).

### Discussion

There are many factors that are held responsible in the etiology of urticaria. Some of these are the primary causes, while others are the factors that trigger the lesions and cause exacerbation. While these triggering factors are seen in 10-20% of patients in many studies, etiology cannot be found in 50% of the patients [9,10,11].

In a study in which triggering factors were investigated only in pediatric population, this rate was found to be 21-55%. In another study, while 75.9% of the patients described the triggering factor, only 36.3% of the tests performed rash after the triggers [12,13].

In our study, triggering factors were seen at a rate of 42.7%.

As in other studies, association with triggering factors was more common in female and young adult patients in our study [14,15].

The most common triggering factor was physical triggers in many studies in the literature, as in our study. It was followed by foods and drugs [14,15,16].

Studies show that foods are responsible for 5.3% of acute urticaria cases. IgE mediated food allergy is rarely observed in urticaria. In IgE-mediated urticaria, if the responsible food is eliminated from the diet, the lesions disappear within 24-48 hours. The most common foods that caused urticaria were eggs and milk in children, while fish and shellfish in adults. There was no pediatric age group in our study. In adults, fish were often found to be the trigger factor, in accordance with the literature [17,18].

In some of the studies, antibiotics are the most frequently held responsible group for drug-induced urticaria, while in others NSAIDs. Urticaria is estimated to occur in 0.1% to 0.3% of the patients who use NSAIDs. NSAID and aspirin use is not recommended, especially in chronic urticaria cases. In our study, it was observed that NSAIDs triggered more urticaria attacks compared to other drugs [19,20]. ACE inhibitors can cause angioedema. Therefore, it is not appropriate to use ACE inhibitors in urticaria cases accompanied by angioedema [21]. In our study, there was no patient group in whom urticaria or angioedema was observed with ACE inhibitors.

In cases of physical and emotional fatigue and stress, both lesions and pruritus may increase, the patient is recommended to stay away from stressful environments that they are aware of and can avoid. Some patients may benefit from psychological support [22].

**Table 1. Trigger factors**

Trigger factors	Number of cases (%)
Physical triggers	34 (23.4)
Foods	14 (9.6)
Drugs	11 (7.5)
Premenstrual period	3 (2)

**Table 2. Physical triggers**

Physical triggers	Number of cases (%)
Aquagenic urticaria	11 (7.5)
Cholinergic urticaria (physical exercise, stress, hot shower)	7 (4.8)
Pressure urticaria	5 (3.4)
Cold urticaria	4 (2.7)
Solar urticaria	4 (2.7)
Heat urticaria	2 (1.3)
Contact urticaria	1 (0.6)

More rarely reported triggers/aggravates are cigarette smoke, house dust mites, pollen, mold and spores, and there are cases with premenstrual exacerbation [23]. The patient should be informed about all these potential exacerbations.

### Study Limitation

The limitation of the study was the inability to test patients for physical triggers.

### Conclusion

According to the results of this study, the most common triggers of urticaria are physical triggers, foods and drugs. In addition to pharmacological treatment, avoiding these triggers will significantly increase the quality of life of patients.

### Ethics

**Ethics Committee Approval:** The study were approved by the Istanbul University Cerrahpasa-Cerrahpasa Faculty Medicine Local Ethics Committee (approval number: 83045809-604.01.02-103775, date: June 2, 2021).

**Informed Consent:** Retrospective study.

**Peer-review:** Internally peer-reviewed.

### Authorship Contributions

Surgical and Medical Practices: S.S., Concept: S.S., Ö.A., Design: Ö.A., R.N.A., Data Collection or Processing: Ö.A., R.N.A., Analysis or Interpretation: Ö.A., T.K.U., Literature Search: Ö.A., R.N.A., Writing: Ö.A., R.N.A.

**Conflict of Interest:** No conflict of interest was declared by the authors.

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