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Evaluation of anxiety in children diagnosed with chronic urticaria

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Abstract

This study aimed to evaluate anxiety levels in children diagnosed with chronic urticaria and to compare them with those in a healthy control group. Designed as a cross-sectional study, it included children aged 9–18 years diagnosed with chronic urticaria who attended our Pediatric Allergy and Immunology Clinic. A control group of children aged 9–18 years, free from chronic urticaria and other chronic conditions, was also included. Sociodemographic data, urticaria severity, and anxiety levels were examined. In total, data from 45 children with chronic urticaria and 43 healthy children were analyzed. Of the children with chronic urticaria, 64.4% (n=29) were female, compared to 53.5% (n=23) in the control group (p=0.296). The median ages in the chronic urticaria and control groups were 15.0 (range 7.0–18.0) and 13.0 (range 8.0–17.0), respectively (p=0.296). The state anxiety scores in children with chronic urticaria were significantly higher compared to those in the control group (p=0.010). Although trait anxiety scores were also elevated in the chronic urticaria group, the difference did not reach statistical significance (p>0.05). Additionally, while children with uncontrolled urticaria showed higher state and trait anxiety scores, these differences were not statistically significant (p>0.05). A significant positive correlation was found between age and trait anxiety (r=0.264, p=0.014). Overall, this study highlights that children with chronic urticaria tend to experience higher levels of anxiety. In clinical practice, the need for psychological support in disease management, especially in more risky groups, should be taken into consideration.

Keywords: Chronic urticaria, children, anxiety

Introduction

Chronic urticaria is categorized into chronic spontaneous urticaria and chronic inducible urticaria based on the presence of specific triggering factors such as cold, heat, solar radiation, pressure, or exercise and characterized by the presence of wheals, angioedema, or both, persisting for more than six weeks [1,2]. Chronic urticaria is more common in women than in men. Although most patients with chronic urticaria are over the age of 20 years, it can also be observed in childhood [3]. Its prevalence in children has been reported to be approximately 1% [4].

It has been suggested that individuals with skin conditions

experience significant psychiatric or psychological difficulties [5,6]. Studies emphasize that mental health problems such as anxiety and depression are particularly prevalent among patients who experience chronic itching and discomfort associated with certain skin conditions [7-9]. Acute urticaria often subsides quickly with the avoidance of triggers and appropriate symptomatic treatment. In contrast, the root cause of chronic urticaria remains unidentified in about 70% of cases, complicating the management of the condition [10]. Poor quality of life and sleep disturbance may be observed in patients with chronic urticaria [11,12]. In addition, it is also possible for patients to experience mental disorders in chronic urticaria, which is a chronic and disturbing disease [10]. Many studies

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have reported that patients with chronic urticaria frequently have psychiatric comorbidities [13-15].

Spielberger conceptualized anxiety as state and trait anxiety [16]. State anxiety refers to a temporary emotional response that arises in reaction to a specific stress-inducing situation, marked by physiological changes like sweating, paling, flushing, and trembling due to autonomic nervous system activation, reflecting tension and unease. Trait anxiety, on the other hand, is characterized by a more enduring tendency to experience heightened and persistent anxiety, often disproportionate to any present circumstances or without any clear, objective reason for concern [17].

In the management of chronic diseases, the mental well-being of patients is as important as their physical health. In clinical practice, determination of anxiety levels and related factors in patients with chronic urticaria may increase the awareness of parents and clinicians in terms of mental health of children. In this context, our study aimed to evaluate the anxiety levels of children diagnosed with chronic urticaria and to compare them with a healthy control group.

Material and Methods

Study Type and Design

This cross-sectional study involved children aged 9–18 years diagnosed with chronic urticaria who attended our Pediatric Allergy and Immunology Clinic. Children presenting with wheals, angioedema, or both persisting for more than six weeks were included in the study. The control group consisted of children within the same age range, with no history of chronic urticaria or any other chronic condition, who visited the general pediatric outpatient clinic at our hospital. Children with any chronic illness other than urticaria or those with a known psychiatric disorder were excluded from the study.

Measurements

The study assessed sociodemographic characteristics (including age and gender), urticaria severity, and anxiety levels in children diagnosed with chronic urticaria. Anxiety levels were measured using the State-Trait Anxiety Inventory for Children, while the Urticaria Control Test was used to evaluate the severity of urticaria.

State-Trait Anxiety Inventory for Children

Spielberger developed this self-report scale to assess anxiety, dividing it into two subscales, each containing twenty items that evaluate state and trait anxiety separately [16]. Özusta conducted the validity and reliability study for the scale in our country [18]. The inventory uses a three-point Likert format (1=almost never, 3=often) and has two independently scored subscales. Each subscale produces a score ranging from 20 to 60, with higher scores reflecting a greater intensity of the anxiety characteristic assessed by the items [16,18].

Urticaria Control Test

Patients with urticaria are asked to assess their urticaria symptoms over the past four weeks and the impact of these symptoms on daily life. The test consists of four questions, each scored from 0 to 4. A score of 12 or above indicates well-controlled disease, while a score of 11 or below indicates uncontrolled disease [19].

Statistical Analysis

Data analysis was performed using IBM SPSS software, version 25. Descriptive statistics were provided as counts (n), percentages (%), and median values with minimum and maximum ranges. Normality of continuous variables was assessed using the Kolmogorov–Smirnov and Shapiro–Wilk tests. The Mann-Whitney U test was applied to compare two independent groups, and Spearman's correlation test was used to examine relationships between two numerical variables. Statistical significance was set at $p < 0.05$.

Ethics

This study adhered to the principles outlined in the Declaration of Helsinki. Ethical approval was granted by the Ethics Committee of Ümraniye Training and Research Hospital (Date: 27.02.2024, Decision number: 59), and informed consent was obtained from all participants.

Results

The data of 45 pediatric patients with urticaria and 43 healthy children were evaluated. While 64.4% ($n=29$) of the group with chronic urticaria was female, 53.5% ($n=23$) of the control group was female ($p=0.296$). The median age was 15.0 (7.0-18.0) and 13.0 (8.0-17.0) years in the chronic urticaria group and the control group, respectively ($p=0.296$).

The median duration of complaints in chronic urticaria patients was 12.0 months (2.0-72.0). The majority of patients had uncontrolled urticaria ($n=35$, 77.8%). Antihistamines were used in the majority of patients ($n=39$, 86.7%). While 33.3% of the children had a family history of chronic urticaria, 17.8% ($n=8$) had a family history of atopy. One patient had house dust mite allergen sensitization (Table 1).

The state and trait anxiety scores of children with chronic urticaria and those in the control group were analyzed. Children with chronic urticaria showed a statistically significant increase in state anxiety scores compared to the control group ($p=0.010$). While trait anxiety scores were also elevated in the urticaria group relative to the controls, this difference did not reach statistical significance ($p > 0.05$) (Table 2).

Factors that may affect anxiety scores of chronic urticaria patients were evaluated. Although state and trait anxiety scores were higher in patients with uncontrolled urticaria, statistical significance was not observed. Family history of atopy, history of chronic urticaria, gender and treatment had no statistically significant effect on state and trait anxiety ($p > 0.05$) (Table 3).

Spearman correlation analysis was used to assess the relationship between age, duration of chronic urticaria symptoms, and anxiety scores in patients with chronic urticaria. The analysis revealed no significant correlation between symptom duration and either state or trait anxiety scores ($r=0.000$, $p=0.995$ and $r=0.076$, $p=0.623$, respectively). Although age did not show a significant association with state anxiety ($r=0.195$, $p=0.069$), a significant positive correlation was observed between age and trait anxiety ($r=0.264$, $p=0.014$) (Table 4).

Table 1. Clinical features of the chronic urticaria patients

Clinical features		
Duration of symptoms (months), median (min-max)		12.0 (2.0-72.0)
Chronic urticaria control test, n (%)	Uncontrolled urticaria	35 (77.8)
	Well-controlled urticaria	10 (22.2)
Treatment, n (%)	Antihistamine	39 (86.7)
	Omalizumab	6 (13.3)
Family history of atopy, n (%)		8 (17.8)
Family history of chronic urticaria, n (%)		15 (33.3)
Allergen sensitization, n (%)		1 (2.2)
* House dust mite allergen sensitization was detected in 1 patient with allergen sensitization.		

Table 2. Anxiety scores of chronic urticaria patients and control group

	Group		P value
	Chronic urticaria	Control	
	Median (min-max)	Median (min-max)	
State anxiety score	37.0 (28.0-51.0)	33.0 (23.0-43.0)	0.010
Trait anxiety score	37.5 (25.0-52.0)	36.0 (23.0-47.0)	0.268

Table 3. Factors affecting the anxiety scores of patients with chronic urticaria

		State anxiety score		Trait anxiety score	
		Median (min-max)	P value	Median (min-max)	P value
Gender	Female	35.0 (23.0-51.0)	0.215	38.0 (26.0-52.0)	0.482
	Male	34.0 (24.0-45.0)		35.0 (25.0-50.0)	
Treatment	Antihistamine	36.0 (28.0-51.0)	0.504	38.5 (25.0-52.0)	0.355
	Omalizumab	38.5 (32.0-45.0)		33.5 (31.0-41.0)	
Family history of atopy, n (%)	No	38.0 (28.0-51.0)	0.265	38.5 (25.0-52.0)	0.737
	Yes	34.5 (28.0-39.0)		36.5 (27.0-48.0)	
Family history of chronic urticaria, n (%)	No	36.5 (28.0-51.0)	0.523	39.0 (26.0-52.0)	0.327
	Yes	37.0 (28.0-47.0)		35.0 (25.0-47.0)	
Urticaria clinic	Uncontrolled urticaria	37.0 (28.0-51.0)	0.452	38.0 (25.0-52.0)	0.683
	Well-controlled urticaria	32.5 (30.0-47.0)		37.0 (26.0-50.0)	

Table 4. The effect of age and symptom duration on anxiety of patients

		State anxiety score	Trait anxiety score
Age (years)	Correlation coefficient (r)	0.195	0.264
	P value	0.069	0.014
Duration of symptoms (months)	Correlation coefficient (r)	0.000	0.076
	P value	0.995	0.623

Discussion

Children with chronic disease may have impaired quality of life [20]. School performance of children with chronic diseases may also be negatively affected [21]. These disruptions in daily life and school life may negatively affect the mental health of children with chronic disease as well as their physical health [22]. In this study conducted in this context, the anxiety level of children diagnosed with chronic urticaria was evaluated.

In the literature, it is reported that approximately one-third of patients with chronic urticaria present with at least one underlying psychiatric disorder [23]. Increased anxiety levels have been reported in patients with chronic urticaria in the literature [24]. A study conducted in our country on adult patients with chronic urticaria reported that the prevalence of anxiety among urticaria patients was nearly double that of the control group [25]. In another study, the association of chronic urticaria with anxiety and depression was reported to be shaped by symptoms of pruritus and sleep disturbance [26]. Moreover, a large-sample study reported significantly higher frequency of anxiety and depression in patients with chronic spontaneous urticaria compared to controls, with an anxiety prevalence of 9.6% versus 5.7% and a depression prevalence of 11% versus 7.9% [27]. In this study, state and trait anxiety scores of chronic urticaria patients and the control group were evaluated. State anxiety subscale scores were found to be significantly higher in the patient group than in the control group. Trait anxiety scores were also higher in children with chronic urticaria, although statistical significance was not observed. Similarly, a study conducted in our country on adult patients with chronic urticaria reported higher levels of state and trait anxiety compared to the control group [28]. Increased anxiety scores suggest that psychiatric comorbidities may accompany chronic urticaria patients. In the clinical management of chronic urticaria, in addition to controlling the physical symptoms of the disease, the burden of comorbid mental illness such as anxiety should also be considered. Patients at risk should be referred to psychiatrist and psychologist support and multidisciplinary approaches should be adopted with pediatricians and psychiatrists. The timely identification and management of potential psychiatric disorders alongside the treatment of urticaria is very essential.

In the study, factors that may affect anxiety scores of chronic urticaria patients were evaluated. Although state and trait anxiety scores were found to be higher in patients with uncontrolled urticaria, statistical significance was not observed. Since uncontrolled urticaria patients have more frequent disturbing symptoms of the disease such as pruritus and rash, their quality of life may be negatively affected. In a study in the literature, a negative correlation was reported between the decrease in quality of life and anxiety levels in patients with chronic urticaria [10]. Another study reported a direct correlation between itching severity and depression score in patients with itchy skin conditions including chronic urticaria

[29]. Another study also demonstrated that as chronic urticaria activity increased, patients' anxiety scores rose accordingly [27]. For these reasons, it is expected that anxiety levels of uncontrolled urticaria patients are higher than well-controlled urticaria patients according to the literature. Controlling the symptoms of the disease in chronic urticaria may improve both physical health and mental well-being in patients.

In this study, a significant positive correlation was observed between age and trait anxiety. In similar studies, a positive correlation was observed between anxiety and depression scores of children with chronic urticaria and age [30,31]. In a study conducted in children aged 8-17 years, general anxiety scores were reported to be higher in adolescents than in younger children [32]. Anxiety levels may be higher in older children due to reasons such as school-related concerns and learning problems [33]. According to our findings, higher anxiety scores at older ages in children with chronic urticaria are compatible with the existing scientific literature.

In the literature, a positive correlation was reported between symptom duration and anxiety and depression scores in children with chronic urticaria [31]. In a study conducted on adult patients with chronic urticaria, a weak positive correlation was identified between the duration of the disease and anxiety scores [28]. In this study, symptom duration of chronic urticaria was not significantly correlated with state anxiety and trait anxiety scores. This discrepancy may be attributed to differences in study populations, sample sizes, or methodological frameworks. Besides, the individual coping behaviours may have more evident role in influencing anxiety levels in this study, rather than symptom duration. Further studies with larger sample sizes and more detailed psychosocial assessments are needed to understand the relationship between disease duration and anxiety in patients with chronic urticaria. Besides, the results of this study suggests that psychiatric comorbidities should be evaluated in all patients with chronic urticaria regardless of symptom duration.

Limitations and Strengths

This study has both limitations and strengths. The limited sample size and the single-center design restrict the generalizability of its findings. In addition, the fact that most of the patient group was diagnosed with uncontrolled chronic urticaria may have negatively affected the statistical comparison of disease activity. Another limitation of our study is that anxiety levels in adolescents may be influenced not only by chronic urticaria but also by factors inherent to adolescence itself.

The fact that the study emphasized the mental effects of the disease in addition to the physical findings of chronic urticaria emphasizes the need to evaluate the effects of chronic urticaria on the overall quality of life of children. In this context, the findings of the study may raise awareness that chronic urticaria patients may also require psychologist or psychiatrist support in the follow-up process and contribute to the adoption of holistic approaches in the management of chronic urticaria.

Conclusion

In the management of chronic diseases, it is very important to consider comorbidities in addition to controlling the physical manifestations of the disease. This study, which examined anxiety levels in children diagnosed with chronic urticaria, shows that chronic urticaria patients have increased anxiety levels. In addition, anxiety levels were found to be higher in older children with chronic urticaria. It should be kept in mind that chronic urticaria may cause psychosocial burden as well as physical disease burden. In clinical practice, the need for psychological support should be considered in disease management, especially in more risky groups. Future studies are recommended to evaluate additional variables that may be associated with anxiety in children and to investigate the pathophysiological mechanisms that could be linked to elevated anxiety levels in children with chronic urticaria.

Conflict of Interests

The authors declare that there is no conflict of interest in the study.

Financial Disclosure

The authors declare that they have received no financial support for the study.

Ethical Approval

The study was conducted in accordance with the Declaration of Helsinki. The ethics approval for this study was granted by the Ethics Committee of Ümraniye Training and Research Hospital (Date: 27.02.2024, Decision number: 59). Informed consent was obtained from all participants.

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