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Original Article PSYCHIATRY

The role of childhood trauma in patients with chronic urticaria

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ABSTRACT

OBJECTIVE: Chronic urticaria (CU) is a common skin disease in which the etiology involves immunological and psychological factors. Childhood traumas may disrupt the development of the neuro-immuno-cutaneous-endocrine system and start a complex pathophysiological process with inflammatory abnormalities, potentially leading to the development of skin disease. In light of this information, we believe that childhood trauma may play a role in the onset and severity of disease in CU patients. Our study aimed to discover a potential relationship between CU and childhood traumatic experiences.

METHODS: This study was conducted with 53 controls and 50 CU patients. The participants were given a questionnaire form that included sociodemographic information, Beck Anxiety Scale, Beck Depression Scale, and Childhood Trauma Questionnaire (CTQ-28).

RESULTS: The rates of childhood trauma were found to be 68% in the patient group, and 54.7% in the control group. The patient group demonstrated higher scores for moderate to severe anxiety and depression. The mean emotional abuse score was significantly higher in early onset (<35 ages) urticaria patients in comparison to late onset urticarial (≥35 ages) and the control group. It was found that depression scores were positively correlated with all abuse sub-types, excluding sexual abuse, and total CTQ-28 scores. Anxiety scores were positively correlated with emotional abuse, physical neglect, emotional neglect, and total CTQ-28 scores.

CONCLUSION: Childhood traumas are associated with the early onset and severity of disease in CU patients as well as the accompanying depression and anxiety.

Keywords: Anxiety; childhood abuse; chronic urticaria; depression; neglect.

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Chronic urticaria (CU) is a common skin disease that is considered to have a lifetime incidence rate of 20% in society. It is a disease characterized by itching, erythematous papules, or plaques and superficial swelling of the dermis which last for more than 6 weeks [1]. Although the etiopathogenesis of the disease is not completely clear, urticaria is among the psychodermatological diseases since psychological factors are effective in the onset and exacerbation of the disease [2, 3]. On the other hand, the chronic course of disease and discomfort caused by CU symptoms (itching, sleeplessness, etc.) also affects the patient's emotional state and results in the development of comorbid psychiatric disorders such as anxiety-depression [4, 5]. With time, this bidirectional interaction reduces the coping strength of CU patients, and significantly affects the cost of treatment [6]. For this reason, determining the factors that affect the course of disease has been a significant issue attracting the attention of researchers.

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The relationship between stress and dermatological disease has actually been known for a long time. Increasing frequency of urticaria during the COVID-19 outbreak also supports that urticaria is closely related to anxiety [7, 8]. Contemporary studies have reported that stress causes the development of skin diseases by delaying the healing of wounds through a direct effect on interleukins and by directly disrupting the balance of the epidermal permeability barrier [9]. In addition, it has been shown that chronic stress, especially traumatic experiences in early childhood computed tomography (CT), may lead to the development of dermatological disease similar to psychiatric and physical diseases by causing changes in a wide range of areas extending from deterioration of brain plasticity to disturbing hypothalamic-pituitary-adrenal axis activity, immunological response, and development of emotion [10, 11].

Based on this information, this study was conducted with the hypothesis that childhood trauma may be a triggering factor in the onset of CU and may negatively affect the severity and course of disease by causing comorbidities such as anxiety or depression.

MATERIALS AND METHODS

The study was approved by Inonu University Clinical Research Ethics Committee (2019/80). This cross-sectional study was conducted between January and May 2020 with 50 patients who applied to the dermatology clinic of a tertiary university hospital. The control group was composed of 53 people selected from the general population without dermatological problems matching the patient group in terms of age and gender. All patients were evaluated by the same dermatologist. Patients younger than 18 years of age, older than 65 years of age, those whose history included dementia, psychotic disorder, mental retardation, chronic medical disease, and cortisone and antidepressant treatment within the past month were excluded from the study.

Four scales were used in the evaluation of all patients in the study. 1-Socio-demographic data form including questions such as age, gender, marital status, birthplace, lifespan psychiatric treatment history, alcohol-substance addiction, smoking, legal problems, suicide attempt, onset and duration of illness, and history of hospitalization in a dermatology clinic. 2-Childhood trauma questionnaire (CTQ-28) used to evaluate the childhood traumatic experiences of the patients, 3-Beck Depression Scale (BDS), and 4-beck

Highlight key points

- In our study, although the difference in the incidence of CT between the control group and the CU group may have been insignificant, the CT rate was higher in the CU group.
- While the most common type of trauma was physical neglect, it was observed that emotional abuse was correlated with the early onset of CU. The presence of any history of trauma was linked to an increase in the UAS scores.
- This result implies that traumatic childhood experiences may play an important role in both the severity and onset of dermatological diseases.

Table 1. Sociodemographic characteristics of the patient and control groups

Variables	Urticaria (n=50) (%)	Controls (n=53) (%)	p
Age, Mean±SD	38.3±11.7	34.8±9.2	**0.14
Gender			*1.00
Female	60	60.4	
Male	40	39.6	
Marital status			*0.17
Married	66	62.3	
Divorced	8	–	
Single	26	37.7	
Birthplace			*0.09
Rural	44	26.4	
Urban	56	73.6	
Lifespan psychiatric treatment history			*0.37
Yes	24	15.1	
No	76	84.9	
Alcohol/substance addiction			*1.00
Yes	4	3.8	
No	96	96.2	
Smoking			*0.83
Yes	32	35.8	
No	68	64.2	
Legal problem			*0.61
Yes	6	1.9	
No	94	98.1	
Suicide attempt			*0.23
Yes	6.7	–	
No	93.3	100	

SD: Standard deviation; *: Chi-square test, and fisher exact χ^2; **: Mann-Whitney U test.

Table 2. Childhood abuse, depression, and anxiety rates in the patient and control groups

Variable	Urticaria (n=50)		Controls (n=53)		p
	Yes (%)	No (%)	Yes (%)	No (%)	
Emotional abuse	36	64	24.5	75.5	*0.29
Physical abuse	14	86	17	83	*0.88
Physical neglect	44	56	28.3	71.7	*0.14
Emotional neglect	34	66	35.8	64.2	*1.00
Sexual abuse	10	90	7.5	92.5	*0.73
Any abuse presence	68	32	54.7	45.3	*0.23
Moderate to severe depression	24	76	3.8	96.2	***0.007**
Moderate to severe anxiety	52	48	20.8	79.2	***0.002**

*: Chi-square test, and fisher exact χ^2.

anxiety scale (BAS) for determination of comorbid depression and anxiety. Disease severity of patients with CU was assessed by a dermatologist with Urticaria Activity Score (UAS).

CTQ-28: It is a self-report survey with 28 questions that are useful in the qualitative evaluation of abuse and neglect in childhood and adolescence [12]. The inventory was translated into Turkish by Sar et al. [13] and tested for validity and reliability in 2011 lifespan. This inventory gives five sub-scores on childhood sexual, physical, emotional abuse as well as emotional and physical neglect; the CTQ-28 total score is found by adding these sub-scores. Each item is rated from 1 (never) to 5 (very often). Scores range from 5 to 25 for each type of trauma and 25–125 for the total trauma score.

BDS: This scale, which was developed by Beck in 1961, determines the risk of depression as well as the level and severity of depressive symptoms in adults. Its Turkish validity and reliability study was conducted by Hisli et al. [14] in 1989. This 21-question self-report scale measures the physical, emotional, cognitive, and motivational symptoms seen in depression. A score between 1 and 10 is considered as normal, a score between 11 and 16 is considered as mild depression, a score between 17 and 20 is considered as border, a score between 21 and 30 is considered as moderate depression and a score between 31 and 40 is considered as severe depression.

BAS: It is a self-report scale examining the frequency of anxiety symptoms and consists of a total of 21 questions. High score shows the severity of anxiety experienced by the individual. Its validity and reliability study was conducted by Ulusoy et al. [15]. A score between 8 and 15 is considered mild anxiety symptoms, a score between 16 and 25 is considered as moderate anxiety symptoms, and a score between 26 and 63 is considered as severe anxiety symptoms.

UAS: Calculated based on the total score of urticarial plaque count, width, and itching severity. Urticarial plaque count grading is as follows: 10 or less small plaques (diameter <3 cm) is considered 0 points, 10–50 small plaques, or 10 or fewer large plaques (diameter >3 cm) is considered 1 point, more than 50 small plaques or 10–50 large plaques is considered 2 points, diffuse plaques that cover roughly the entire body are evaluated as 3 points. Evaluation of itching severity; 0 points for no itching, 1 point for mild, 2 points for moderate, and 3 points for severe itching. The total score in daily evaluation can vary between 0 and 6 points. Apart from daily evaluation, the UAS system is also used weekly (UAS7) to evaluate the patient's previous 7 days. In weekly evaluation, the patient's complaints throughout the last 7 days are scored and added up. The total score can vary between 0 and 42. Our study utilized the UAS7 [16].

Statistical Analysis

The data were evaluated using Statistical Package for the Social Sciences (SPSS) software (SPSS Inc., Chicago, IL, USA, v17.0). In the analysis of how negative childhood experiences can affect clinical status, due to the small sample size, the CU group was divided into 2 sub-groups based on the presence of childhood trauma, and statistical comparisons were conducted accordingly.

Table 3. Comparison of sociodemographic and clinical characteristics of the patients with and without abuse

Variable	Abuse (+) n=34 (68%) %	Abuse (–) n=16 (32%) %	p
Sex			*0.95
Male	38.2	43.8	
Female	61.8	56.2	
Marital status			*0.07
Maried	76.4	43.8	
Divorced	8.8	6.3	
Single	14.7	50	
Birthplace			*0.74
Rural	47.1	37.5	
Urban	52.9	62	
Lifespan psychiatric treatment history			*0.48
Yes	20.6	31.3	
No	79.4	68.7	
Alcohol/substance addiction			*0.09
Yes	0	12.5	
No	100	87.5	
Smoking			*1.00
Yes	32.4	31.3	
No	67.6	68.8	
Legal problems			*0.54
Yes	8.8	–	
No	91.2	100	
Suicide attempt			*0.54
Yes	2.9	6.3	
No	97.1	93.8	
Onset of urticarial			*0.91
<35 ages	50	56.2	
≥35 ages	50	43.8	
Duration of urticarial			*0.33
6 weeks-6 months	5.9	–	
6 month-1 year	14.7	6.3	
1 year-2 years	5.9	18.8	
>2 years	73.5	75	
Dermatology inpatient treatment			*0.26
Yes	58.8	37.5	
No	41.2	62.5	
UAS, Mean±SD	14.1±11.5	7.3±6.5	****0.035**
BD score, Mean±SD	17.7±11.3	10.9±11.1	****0.013**
BA score, Mean±SD	21.5±14.0	13.7±12.7	****0.039**

UAS: Urticaria activity score; BD: Beck depression; BA: Beck anxiety; *: Chi-square test, and Fisher exact χ^2; **: Mann–Whitney U test.

In terms of clinical significance, the cut-off scores were established as ≥21 for moderate and severe depression, and ≥16 for moderate and severe anxiety. The age of onset for CU was classified as early onset for ages <35, and late onset for ages ≥35.

Data for qualitative variables were given as number and percentage, and data for quantitative variables as mean±SD. The normal distribution of the data was evaluated by Shapiro–Wilk's test. Mann–Whitney U test was used in the statistical evaluation of quantitative data that were not normally distributed. Chi-square test and Fisher exact χ^2 were used to compare categorical variables. A value of $p<0.05$ was accepted as statistically significant. Spearman correlation analysis was applied to the continuous variables of the study.

RESULTS

The study included 50 urticaria patients (30 female, 20 male) and 53 control patients (32 female, 21 male). The mean age was 38.3±11.7 (min–max = 18–62) in the patient group and 34.8±9.2 (min–max = 18–59) in the control group. The patient group and control group did not demonstrate a statistical difference in terms of age, gender, and marital status ($p>0.05$). Table 1 displays the sociodemographic characteristics of the CU patients and control group.

The rates of CT were found to be 68% in the patient group and 54.7% in the control group. In the patient group, physical neglect had the highest rate (44%) followed by emotional abuse (36%), emotional neglect (34%), physical abuse (14%), and sexual abuse (10%). However, emotional neglect was the most prevalent in the control group (35.8%). There was no significant difference between the two groups in terms of CT incidence rate ($p>0.05$). The patient group demonstrated higher scores for moderate and severe anxiety and depression compared to the control group ($p=0.007$ and $p=0.002$, respectively). Table 2 shows the CT sub-types and incidence rates for CT, moderate to severe depression and anxiety in the CU and control groups.

The patient group was divided into two sub-groups according to the absence or presence of at least one CT; the UAS, Beck depression (BD), and Beck anxiety mean scores (BA) of these sub-groups were then compared in terms of gender, marital status, birthplace, lifespan psychiatric treatment history, alcohol/substance addiction, smoking, suicide attempt, legal problems, onset of urticaria, history of dermatology admission, and dura-

Table 4. Comparison of the depression, anxiety scale total scores and CTQ-28 sub-scores and total scores of the early and late onset urticaria group and the control group

Variables	Early onset urticaria Mean±SD	Late onset urticaria Mean±SD	Urticaria Mean±SD	Controls Mean±SD	*p-values			
					p^1	p^2	p^3	p^4
BD score	17.3±13.1	13.6±9.6	15.5±11.6	9.5±8.9	**0.011**	**0.022**	0.49	**0.003**
BA score	18.0±14.4	20.1±13.7	19.0±14.0	9.3±8.3	**0.006**	**0.001**	0.46	**<0.001**
Emotional abuse	8.6±4.7	5.8±1.4	7.2±3.7	6.2±2.0	**0.042**	0.66	**0.044**	0.29
Physical abuse	5.5±1.3	5.0±0.2	5.3±0.9	5.2±0.6	0.45	0.11	0.051	0.71
Physical neglect	6.8±2.7	6.8±1.9	6.8±2.3	6.2±1.6	0.95	0.24	0.48	0.46
Emotional neglect	10.7±4.0	10.7±5.0	10.7±4.5	10.3±3.2	0.60	0.65	0.50	0.95
Sexual abuse	5.4±1.1	5.0±0.2	5.2±0.8	5.2±0.9	0.28	0.55	0.17	0.68
CTQ-28 total score	37.1±10.4	33.4±6.3	35.3±8.8	33.3±5.6	0.20	0.99	0.33	0.42

SD: Standard deviation; P1: Early onset urticaria and controls; P2: Late onset urticaria and controls; P3: Early onset urticaria and late onset urticaria; P4: Urticaria total and controls; BD: Beck depression; BA: Beck anxiety; CTQ-28 total score; *: Mann–Whitney U test.

tion of disease. The mean scores for UAS, BD, and BA were higher in the CT positive group compared to the CT negative group (p=0.035, p=0.013, and p=0.039, respectively). There was no significant difference between the two groups in terms of the other parameters (p>0.05). No relationship was found between the presence of CT and duration of disease. Table 3 displays the data regarding the relationship between the presence of CT and clinical course.

The early onset and late onset CU groups were compared among themselves and with the control group with respect to CTQ-28 sub-scores, CTQ-28 total scores, and mean BD and BA scores. The mean emotional abuse score was significantly higher in the early onset CU group compared to the late onset and control groups (p=0.044 and p=0.042, respectively). All CU patients had statistically significantly higher mean BD and BA scores in comparison to the control group (p<0.05) (Table 4).

The BD scores were positively correlated to all CTQ-28 sub-scores, excluding sexual abuse, and total CTQ-28 scores. There was a positive correlation between BA scores and emotional abuse, physical neglect, emotional neglect, and CTQ-28 total scores (p=0.001, p=0.001, p=0.001, and p=0.001, respectively). The UAS scores were positively correlated with emotional abuse, physical neglect, emotional neglect, and CTQ-28 total scores (p=0.011, p=0.002, p=0.022, and p=0.002, respectively). Table 5 compares the patient group's CTQ-28 scores results with the BD, BA, and UAS scores.

DISCUSSION

This study aimed to investigate whether urticaria is associated with adverse childhood traumas reported retrospectively, and if so, whether these traumatic experiences have an impact on the onset and prognosis of the disease.

In our study, although the difference in the incidence of CT between the control group and the CU group may have been insignificant, the CT rate was higher in the CU group. While the most common type of trauma was physical neglect, it was observed that emotional abuse was correlated with the early onset of CU. The presence of any history of trauma was linked to an increase in the UAS scores. This result implies that traumatic childhood experiences may play an important role in both the severity and onset of dermatological diseases. In addition, this result also supports the idea that emotional neglect during childhood may induce an increase in a person's vulnerability to skin disease. According to this idea, when the dissociative and suppressive coping abilities interfere with stressful events later in adulthood, the person fails to avoid childhood traumas, and psychosomatic disease may manifest. In other terms, non-pathological dissociation, as a result of emotional neglect, may be an intermediary factor when the patient experiences an outburst of the psychodermatological diseases after a stressful event in adulthood lifespan [17]. As a matter of fact, it is stated in the literature that childhood trauma history is common in psychodermatology patients [18, 19]. The study of Yalcin et al. [20] showed that individuals with

Table 5. The correlation analysis (Spearman) between CTQ-28 sub-scores and total score, anxiety, and depression scale scores in the patient group

	BD score	BA score	UAS	Emotional abuse	Physical abuse	Physical neglect	Emotional neglect	Sexual abuse	CTQ-28 total score
Emotional abuse									
r	0.547**	0.417**	0.286*	1					
p	0.000	0.000	0.011						
Physical abuse									
r	0.213*	0.092	-0.100	0.241*	1				
p	0.032	0.360	0.385	0.014					
Physical neglect									
r	0.299*	0.390**	0.353*	0.397**	0.048	1			
p	0.002	0.000	0.002	0.000	0.632				
Emotional neglect									
r	0.380**	0.392**	0.259*	0.280*	0.191	0.448*	1		
p	0.000	0.000	0.022	0.004	0.053	0.000			
Sexual abuse									
r	0.195	0.178	0.038	0.262*	-0.020	0.134	0.217*	1	
p	0.051	0.075	0.741	0.007	0.841	0.176	0.028		
CTQ-28 total score									
r	0.556**	0.518**	0.343*	0.727**	0.321*	0.694**	0.813**	0.380**	1
p	0.000	0.000	0.002	0.000	0.001	0.000	0.000	0.000	

*: <0.05; **: <0.01; UAS: Urticaria activity score; BD: Beck depression; BA: Beck anxiety; CTQ-28 total score.

neurotic excoriation have a high rate of childhood trauma experience and this is associated with an accompanying psychiatric condition. Willemsen et al. [21] found that CT was also high in patients with alopecia. Similarly, Simonic et al. [22] found that patients with psoriatic arthritis were more exposed to adverse experiences during development, which was associated with the early onset and severity of the disease.

An important result of our study was the positive correlation between CT and depression and anxiety scores in the patient group. In other terms, CT history was increasing psychiatric comorbidity in CU patients. This result supports the studies suggesting that childhood traumas cause persistant sensitization on the central nervous system circuits that regulate stress and emotions which also increase the vulnerability to the development of depression and anxiety [23–26]. In addition, we found that 52% of patients with CU had moderate-to-severe anxiety and 27% had moderate to severe depression. Psychiatric comorbidity may cause the inflammatory response to deteriorate and the physiological disease to exacerbate. Furthermore, the presence of depression and anxiety in CU compromises the quality of life, potentially leading to poor compliance with treatment, decline in patient's satisfaction with medical care and ultimately resulting in the worsening of the situation [27]. For this reason, determining psychiatric comorbidities and traumas associated with the developmental period can contribute to favorable clinical outcomes.

Contrary to the literature, our study did not find a relationship between CT, and alcohol/substance abuse, smoking, legal problems, and suicide attempt. This result reveals that CT alone may not be a sufficient factor in the etiopathogenesis of these behaviors and

should be investigated alongside other factors such as heredity, cultural values, and social environment. One of the compelling findings in our study was that 61% of participants reported that they had previously experienced at least one form of CT. Furthermore, the presence of any trauma was found to be associated with the presence of another trauma. In other words, an emotionally neglected child simultaneously had an increased chance of being physically abused. This finding is significant, as it reveals the prevalence of childhood trauma and indicates that the possible consequences of CT may be more frequent and complex.

There were some limitations to our study. Since we could only reach a limited number of patients, our study may not accurately reflect the entire population. Childhood trauma is a concept that is difficult to define and measure due to its nature. Although psychiatric evaluation is made with proven tests, the reliability of self-reported information may be low. The individual may also not be able to remember or may hide the traumas. The patient's psychological state at the time may affect their answers. These may have prevented the determination of real rates. The beneficial evidence may be acquired in future studies with a psychotherapeutic framework in which the cause-effect relationship can be evaluated through interviews.

Conclusion

Despite its cross-sectional design and low number of participants, our study showed that childhood traumatic experiences may be predictors of disease severity, early onset, and psychiatric comorbidity in CU patients. We believe that the severity and course of CU can be alleviated through the help of psychological interventions that foster trust in interpersonal relationships by increasing social support and the emotional awareness.

Ethics Committee Approval: The Inonu University Clinical Research Ethics Committee granted approval for this study (number: 2019/80).

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

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