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ORIGINAL RESEARCH

Prevalence of Anxiety, Depression, Sleep Disorders, and Fibromyalgia in Chronic Urticaria Patients: A Comparative Study with Healthy Controls

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ABSTRACT

Chronic urticaria (CU) is a condition characterized by recurrent pruritic wheals that significantly impair quality of life. This study aimed to evaluate the prevalence of anxiety, depression, sleep disorders, and fibromyalgia syndrome (FMS) in CU patients and to compare these outcomes with controls. The study included 161 CU patients and 155 controls with dermatological conditions other than CU. Comprehensive clinical, sociodemographic, and laboratory data were collected, including metabolic syndrome parameters, psychiatric assessments, and sleep quality measures. 68.3% of the CU patients were female. Compared with males, female patients had later disease onset (p=0.002), lower educational levels (p=0.025), and a higher prevalence of thyroid disease (p=0.024), elevated thyroid autoantibodies (p=0.032), and FMS (p=0.028). Compared to controls, CU patients had significantly higher rates of FMS (p<0.001), moderate to severe depression (p<0.001), increased visual analogue scale (VAS) pain scores (p<0.001), greater antidepressant use (p<0.001), and poorer sleep quality (p<0.001). Uncontrolled CU, determined by Urticaria Activity Score (UAS7), was associated with higher VAS pain scores (p<0.001), increased FMS prevalence (p<0.001), greater depression rates (p=0.008), and more frequent sleep disturbances (p=0.009). Additionally, the Hospital Anxiety and Depression Scale (HADS)-anxiety scores were significantly lower in omalizumab users (p=0.028), indicating an observed association that may reflect improved disease management rather than a direct treatment effect. Our findings highlight the significant physical and psychological burden of CU, especially in women and patients with uncontrolled disease, and emphasize the importance of considering comorbid conditions such as fibromyalgia, depression and sleep disorders.

Keywords: Anxiety. Depression. Fibromyalgia. Urticaria. Sleep Disorders.

Kronik Ürtiker Hastalarında Anksiyete, Depresyon, Uyku Bozuklukları ve Fibromiyaljinin Yaygınlığı: Kontrol Grubu ile Karşılaştırmalı Bir Çalışma

ÖZET

Kronik ürtiker (KÜ), tekrarlayan kaşıntılı kabarıklıklarla karakterize olan ve yaşam kalitesini önemli ölçüde düşüren bir hastalıktır. Bu çalışmanın amacı, KÜ hastalarında anksiyete, depresyon, uyku bozuklukları ve fibromiyalji sendromu (FMS) prevalansını değerlendirmek ve bu bulguları sağlıklı kontrollerle karşılaştırmaktır. Çalışmaya 161 KÜ hastası ve KÜ dışındaki dermatolojik rahatsızlıkları olan 155 kontrol grubu hastası dahil edildi. Metabolik sendrom parametreleri, psikiyatrik değerlendirmeler ve uyku kalitesi ölçümleri dâhil olmak üzere kapsamlı klinik, sosyodemografik ve laboratuvar verileri toplanmıştır. KÜ hastalarının %68,3'ü kadındı. Kadın hastalarda hastalık başlangıcı anlamlı olarak daha geç (p=0,002), eğitim düzeyi daha düşük (p=0,025), tiroid hastalığı (p=0,024), tiroid otoantikor yüksekliği (p=0,032) ve FMS sıklığı (p=0,028) erkeklere göre daha yüksekti. Kontrol grubuna kıyasla, KÜ hastalarında FMS (p<0,001), orta-şiddetli depresyon (p<0,001), daha yüksek VAS ağrı skoru (p<0,001), antidepresan kullanımı (p<0,001) ve kötü uyku kalitesi (p<0,001) daha yaygındı. Ürtiker Aktivite Skoru (UAS7) ile belirlenen kontrolsüz KÜ, daha yüksek VAS ağrı skoru (p<0,001), artmış FMS prevalansı (p<0,001), daha yüksek depresyon oranı (p=0,008) ve daha sık uyku bozukluğu (p=0,009) ile ilişkiliydi. Ayrıca, omalizumab kullanan hastalarda Hospital Anxiety and Depression Scale (HADS)-anksiyete skorları anlamlı derecede daha düşüktü (p = 0.028). Bu durum, doğrudan bir tedavi etkisinden ziyade daha iyi hastalık yönetimini yansıtan gözlemsel bir ilişkiye işaret etmektedir. Bulgularımız, özellikle kadınlarda ve kontrolsüz hastalığı olanlarda KÜ'nün önemli fiziksel ve psikolojik yükünü ortaya koymakta ve fibromiyalji, depresyon ve uyku bozuklukları gibi eşlik eden durumların dikkate alındığı bütüncül bir yaklaşımın gerekliliğini vurgulamaktadır.

Anahtar Kelimeler: Anksiyete. Depresyon. Fibromiyalji. Ürtiker. Uyku Bozuklukları.

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Chronic urticaria (CU) is defined by the presence of recurrent urticaria, angioedema, or both for a period of six weeks or longer.[1] CU affects approximately 1% of the general population[1] and most commonly begins between the third and fifth decades of life.[1] Women are affected twice as often as men[1]. It presents as chronic spontaneous urticaria (CSU), chronic inducible urticaria (CIndU), or both in the same person[2].

Despite its cause being unknown, CSU is linked to a higher prevalence of autoimmune diseases, and is often worsened by triggers like stress, infections, certain foods or some drugs.[3] In CIndU, hives or wheals are triggered by environmental factors including heat, cold, pressure, exercise, water, vibration and sunlight[4].

CU significantly impacts patients' health-related quality of life and often leads to sleep disturbances, depression, and emotional distress[5]. A recent meta-analysis showed that patients with CU have a threefold increased risk of anxiety or depression, while those with CSU face a sixfold increased risk compared to controls[5]. Studies also indicate a higher prevalence of Fibromyalgia Syndrome (FMS) in CU patients[6]. These factors collectively contribute to a significant emotional burden, psychiatric disorders, and other comorbidities.

In this study, we aimed to determine the prevalence of anxiety, depression, sleep disorders and fibromyalgia in patients with CU and to compare it with controls.

Material and Method

Patients with CU who applied to the dermatology outpatient clinic of a university hospital with the diagnosis of CU between 01.01.2023 and 01.01.2024 and gave consent to participate in the study were included. Ethics committee approval was obtained from the Scientific Research Ethics Committee of our Faculty of Medicine (dated 17/02/2022, No: 2021/351).

Sociodemographic data such as age, gender, education level, marital status, and chronic diseases were recorded. In relation to the diagnosis of CU, disease duration, presence of dermographism, inducible urticaria features, treatments for urticaria, and routine laboratory parameters (haemogram, thyroid autoantibodies, acute phase reactants such as C-reactive protein and sedimentation, total IgE) were recorded. Metabolic syndrome (MetS) was diagnosed by the presence of three or more parameters according to the National Cholesterol Education Program's Adult Treatment Panel III (NCEP-ATP III 2001) criteria: waist circumference ≥ 90 cm in men or ≥ 80 cm in women; hypertriglyceridemia (triglyceride level ≥ 150 mg/dl); high-density lipoprotein (HDL) cholesterol level < 40 mg/dl in men or < 50 mg/dl in women; blood pressure ≥ 130/85 mmHg; and fasting plasma glucose level ≥ 100 mg/dl.[7]

Patients who had been treated for anxiety, depression, sleep disorder, or fibromyalgia before the diagnosis of CU were excluded. Weekly Urticaria Activity Score (UAS7), Hospital Anxiety and Depression Scale (HADS), Pittsburgh Sleep Quality Index (PSQI), Beck Depression Inventory (BDI), and Visual Analogue Scale (VAS) pain score questionnaires were completed.

Both HADS and BDI were administered; HADS was chosen due to its suitability for patients with medical conditions and its exclusion of somatic symptoms, whereas BDI was included to provide a more comprehensive assessment of depressive symptomatology. This combined approach allowed for cross-validation and ensured robustness of the findings.

The control group consisted of patients who visited the dermatology clinic for conditions other than chronic urticaria (e.g., seborrheic dermatitis, tinea infections, or benign dermatoses such as verruca). Patients with a history of CU or autoimmune connective tissue disease were not included in the control group.

The 2016 diagnostic criteria of the American College of Rheumatology (ACR) were used for the diagnosis of FMS.[8] The diagnosis was made by summing the Widespread Pain Index (WPI) and Symptom Severity Scale (SSS). The maximum total score was 19 + 12 = 31. Accordingly, total scores below 12 were suggestive of fibromyalgia. A score of WPI ≥ 7 and an SSS ≥ 5, or a score of WPI = 4–6 and an SSS ≥ 9, was considered diagnostic of fibromyalgia. The severity of the disease increased proportionally with increasing score. The diagnosis of FMS was made by a physical medicine and rehabilitation physician.

The seven-day Urticaria Activity Score (UAS7) was used to assess disease control: a total score (minimum 0–maximum 42) ≤ 6 was considered well controlled, 7–15 mild, 16–27 moderate, and 28–42 severe urticaria.

Statistical analysis

Data analysis was performed using SPSS 23.0. Descriptive statistics were presented as numbers and percentages for categorical variables, and as mean, standard deviation, minimum, and maximum for metric variables. Normality was tested using the One-Sample Kolmogorov–Smirnov Test. For two-group comparisons, the Student's t-test was used for normally distributed data, and the Mann–Whitney U-test for non-normal data. The Chi-Square Test analyzed categorical differences.

Results

Sociodemographic characteristics in patients with CU

A total of 161 CU patients (68.3% female, 31.7% male) and 155 controls were included. The mean age of CU patients was 42 ± 14.5 years, with female patients being significantly older than males (p=0.002). The mean disease duration was approximately 50 months. Educational status was significantly higher in males than in females (p=0.025).

Regarding comorbidities, metabolic syndrome was present in 3.7% of CU patients, while the most common associated conditions included thyroid disease (20.5%) and psychiatric disorders (25.5%). Concomitant thyroid disease was significantly more frequent in women than in men (p=0.024). Sociodemographic characteristics and comorbidities of CU patients are summarised in Table I.

Table I. Sociodemographic characteristics and comorbid conditions in patients with chronic urticaria

	Female n(%)	Male n(%)	Total n(%)	p value
Mean age at onset (mean ± std dev)	45.28±14.41	37.78±13.35	42±14.53	**0.002**
Educational Status:				**0.025**
1-Primary School	7(6.3)	2(4.1)	9(5.6)	
2-Secondary School	41(36.6)	9(18.4)	50(31.1)	
3-High School	31(27.7)	25(51)	56(34.8)	
4- University	33(29.5)	13(26.5)	46(28.6)	
Marital Status, Single:	31(27.7)	21(42.9)	52(32.3)	0.058
Smoking, Yes:	37(33)	17(34.7)	54(33.5)	0.857
Alcohol Use, Yes:	3(2.7)	1(2)	4(2.5)	0.811
Metabolic syndrome, Yes:	3(2.7)	3(6.1)	6(3.7)	0.288
Hyperglycaemia, Yes:	15(13.4)	4(8.2)	19(11.8)	0.344
Hypertension, Yes:	21(18.8)	5(10.2)	26(16.1)	0.175
Diabetes mellitus, Yes:	9(8)	1(2)	10(6.2)	0.147
Hyperlipidaemia, Yes:	16(14.3)	5(10.2)	21(13)	0.479
Cardiovascular disease, Yes:	12(10.7)	3(6.1)	15(9.3)	0.356
Thyroid disease, Yes:	26(23.2)	4(8.2)	30(20.5)	**0.024**
Urinary system disease, Yes:	4(3.6)	3(6.1)	7(4.3)	0.465
Gynaecological disease, Yes:	16(14.3)	0	16(9.93)	*
Psychiatric disease, Yes:	29(25.4)	12(24.5)	41(25.5)	0.509

* p value cannot be calculated

Subtypes of Chronic Urticaria and Their Management

Among CU patients, 32.7% had CSU, 13.7% had CIndU, and 53.6% had both. Dermographism was the most common physical subtype, followed by cold, heat, and solar urticaria. Exercise-induced urticaria and cyclosporine (CsA) use were significantly more frequent in males (p=0.015 and p=0.014, respectively). The mean UAS7 score was 15.9 ± 12.4. Antihistamines (91.7%) and omalizumab (69.2%) were the most commonly used treatments. Subtypes of CU and treatment patterns are summarised in Table II.

VAS pain scores, depression, anxiety, fibromyalgia, and sleep quality in patients with CU

VAS pain score were above the median in 27.3% of patients, while FMS was observed at 38.5%. Moderate to severe Beck Depression scores were recorded in 13% of patients. According to the PSQI, 26.7% had poor sleep quality, and based on the HADS-anxiety scale, 11.8% had anxiety levels above normal. Antidepressant use was reported in 24.4% of patients. FMS and elevated thyroid autoantibodies were significantly more prevalent in women than men (p=0.028 and p=0.032, respectively), whereas no gender differences were observed in VAS pain scores, Beck Depression scores, PSQI, or HADS-anxiety scores. The type and severity of urticaria and the evaluation of depression, anxiety, FMS, sleep quality indices and laboratory parameters in patients with CU are presented in Table II.

Psychological and Clinical Correlates of Omalizumab Use, Disease Control, and Urticaria Duration

We compared CU patients who had used or were currently using omalizumab with those who had never received this therapy. Among omalizumab users, the rates of moderate to severe depression (BDI), borderline or abnormal anxiety (HADS), and poor sleep quality (PSQI) were 18.8%, 8.3%, and 14.6%, respectively, compared with 11.1%, 20.8%, and 28.7% in non-users (p=0.197, p=0.028, and p=0.058, respectively).

VAS score, sleep disturbance (PSQI), HADS depression score, and FMS were significantly higher in patients with uncontrolled urticaria (based on UAS7) compared to those with well-controlled urticaria (p<0.001, p=0.009, p=0.008, p<0.001, respectively).

When assessed based on urticaria duration, a longer disease duration was associated with higher VAS scores (p=0.008) and an increased frequency of depression according to the Beck Depression Inventory (p=0.007). However, no significant correlation was found between urticaria duration and sleep disturbances (PSQI) (p=0.859).

Additionally, no significant differences were observed between patients with uncontrolled and well-controlled urticaria in terms of eosinophilia, elevated IgE levels, or thyroid autoantibody elevation (p=0.405, p=0.779, p=1, respectively).

Table II. Evaluation of urticaria type, severity and depression, anxiety, fibromyalgia syndrome, sleep quality indices and laboratory parameters in patients with chronic urticaria

Variables	Female n(%)	Male n(%)	Total n(%)	p value
Mean age at onset (mean ± std dev)	45.28±14.41	37.78±13.35	42±14.53	**0.002**
Duration of urticaria (months)	44.73±51.32	61.46±81.13	49.88±62.24	0.122
Chronic spontaneous urticaria	37(34.3)	14(29.2)	51(32.7)	0.531
Angioedema	49(44.5)	22(43.1)	69(44.2)	0.462
Chronic inducible urticaria				
1- Dermographism	33(30.6)	13(27.1)	46(29.5)	0.661
2- Delayed pressure urticaria	7(6.5)	2(4.2)	9(5.6)	0.567
3- Vibratory angioedema	1(0.9)	2(4.2)	3(1.9)	0.174
4- Heat contact urticaria	11(10.2)	5(10.4)	16(10.3)	0.965
5- Cold contact urticaria	16(14.8)	6(12.5)	22(14.1)	0.701
6- Excersize induced urticaria	1(0.9)	4(8.3)	5(3.2)	**0.015**
7- Adrenergic urticaria	2(1.9)	1(2.1)	3(1.9)	0.923
8- Cholinergic urticaria	2(1.9)	1(2.1)	3(1.9)	0.923
9- Solar urticaria	8(7.4)	3(6.3)	11(7.1)	0.794
10- Contact urticaria	0(0)	0(0)	0(0)	*
11- Aquagenic urticaria	4(3.7)	2(4.2)	6(3.8)	0.890
Treatments for urticaria				
1- Antihistamine	99(91.7)	44(91.7)	143(91.7)	1.000
2- Systemic steroid	45(41.7)	19(39.6)	64(41)	0.319
3- Omalizumab	73(67.6)	35(72.9)	108(69.2)	0.475
4- Cyclosporine	4(3.7)	7(14.6)	11(7.1)	**0.014**
Urticaria activity score (UAS)				0.158
1- ≤6 (well controlled)	38(35.2)	22(45.8)	60(38.5)	
2- 7-15(light)	24(22.2)	9(18.8)	33(21.2)	
3- 16-27 (medium)	10(9.3)	8(16.7)	18(11.5)	
4- 28-42 (severe)	36(33.3)	9(18.8)	45(28.8)	
VAS pain scores (0-10)				0.192
1- Below median value	78(69.6)	39(79.6)	117(72.7)	
2- Above median value	34(30.4)	10(20.4)	44(27.3)	
Fibromyalgia syndrome	49(43.8)	13(26.5)	62(38.5)	**0.028**
Beck depression score				0.479
1- Minimal / mild degree	96(85.7)	44(89.8)	140(87)	
2- Moderate/severe degree	16(14.3)	5(10.2)	21(13)	
PSQI				0.432
1- Good sleep quality (<5)	83(74.1)	35(71.4)	118(73.3)	
2- Poor sleep quality (≥5)	29(25.9)	14(28.6)	43(26.7)	
HADS-Depression				0.489
1- Normal (0-7 points)	82(74.6)	43(84.4)	125(77.7)	
2- Borderline (8-10 points)/ Abnormal (≥11 points)	28(25.4)	8(15.6)	36(22.3)	
HADS- Anxiety				0.344
1- Normal (0-7 points)	97(86.6)	45(91.8)	142(88.2)	
2- Borderline (8-10 points)/ Abnormal (≥11 points)	15(13.4)	4(8.2)	19(11.8)	
Antidepressant use	28(25.9)	10(20.8)	38(24.4)	0.494
Elevated Total Ige	56(50.9)	32(62.7)	88(54.7)	0.073
Hypereosinophilia	4(3.6)	1(2)	5(3.1)	0.606
Elevated APR	19(17)	8(16.3)	27(16.8)	0.921
Elevated thyroid autoantibody	28(25)	5(10.2)	33(20.5)	**0.032**

* p value cannot be calculated, APR: Acute Phase Reactants

Comparison of urticaria patients with the control group

Compared with controls, CU patients had significantly higher rates of hyperglycemia, thyroid autoantibodies, thyroid disease, antidepressant use, VAS pain scores above the median, fibromyalgia, depression (BDI), and poor sleep quality (PSQI) (all $p<0.05$). No significant differences were observed in HADS-anxiety or HADS-depression scores. The comparison of sociodemographic characteristics, depression and anxiety scores, FMS, sleep quality index scores, and laboratory parameters between CU patients and the population is presented in Table III.

Table III. Comparison of sociodemographic characteristics, depression and anxiety scores, fibromyalgia syndrome, sleep quality index scores, and laboratory parameters between chronic urticaria patients and the control group

	Urticaria patient, n(%)	Control, n(%)	p value
Age at Onset: (mean ± std dev)	42±14.53	41.51±14.22	0.363
Gender, Female	112(69.6)	76(50.3)	**<0.001**
Educational Status:			0.868
1- Primary School	9(5.6)	6(4)	
2- Secondary School	50(31.1)	46(30.5)	
3- High School	56(34.8)	51(33.8)	
4- University	46(28.6)	48(31.8)	
Marital Status: Single	52(32.3)	61(40.4)	0.085
Smoking, Yes:	54(33.5)	46(30.5)	0.323
Alcohol Use, Yes:	4(2.5)	2(1.3)	0.456
Metabolic Syndrome, Yes:	6(3.7)	5(3.3)	0.842
Hyperglycemia, Yes:	19(11.8)	8(5.3)	**0.041**
Hypereosinophilia, Yes:	5(3.1)	0(0)	*
Elevated APR, Yes:	27(16.8)	20(13.2)	0.384
Elevated thyroid autoantibodies, Yes:	33(20.5)	0(0)	**<0.001**
Hypertension, Yes:	26(16.1)	26(17.2)	0.800
Diabetes Mellitus, Yes:	10(6.2)	8(5.3)	0.730
Hyperlipidemia, Yes:	21(13)	19(12.6)	0.903
Cardiovascular Disease, Yes:	15(9.3)	13(8.6)	0.830
Thyroid Disease, Yes:	30(18.6)	0(0)	**<0.001**
Psychiatric Disease, Yes:	41(25.5)	27(17.9)	0.105
Antidepressant Use	38(24.4)	10(6.62)	**<0.001**
VAS pain scores (0-10)			
1- Below median value	117(72.7)	136(90.1)	**<0.001**
2- Above median value	44(27.3)	15(9.9)	
Fibromyalgia syndrome	62(38.5)	16(10.6)	**<0.001**
Beck depression score			**<0.001**
(Moderate/severe degree)	21(13)	2(1.3)	
PSQI			**<0.001**
Poor sleep quality (≥5)	43(26.7)	0(0)	
HADS-Depression			0.338
Borderline (8-10 points)/ Abnormal (≥11 points)	36(22.3)	24(15.8)	
HADS- Anxiety			0.176
Borderline (8-10 points)/ Abnormal (≥11 points)	19(11.8)	11(7.3)	

Discussion and Conclusion

In this study, the clinical features, as well as the presence of anxiety, depression, sleep disturbances, and fibromyalgia, were investigated in patients with CU diagnosed with CSU and/or CIndU, and the findings were compared with control group.

A retrospective, population-based study reported a significantly higher prevalence of CU in women than in men (OR=3.82, 95% CI: 1.56–9.37), with a mean age of onset of 40 years[9]. Similarly, Jo YH et al. found that CSU was more prevalent in female patients (female/male ratio: 1.34), with a mean age at first diagnosis of 43.1 ± 14.6 years[10]. Our study findings align with the existing literature. Notably, no previous study has directly compared the age of onset of urticaria between men and women as ours does. This trend suggests that hormonal, immunological, or psychosocial factors may contribute to the higher mean age of onset and persistence of CU in women compared to men[11].

Autoimmune and systemic comorbidities are more frequently reported in women with CU. In a population-based, retrospective analysis, female patients with CU were found to have a significantly higher incidence of rheumatoid arthritis ($p<0.0005$), Sjögren's syndrome ($p<0.0005$), celiac disease ($p<0.0005$), type 1 diabetes mellitus ($p<0.0005$), and systemic lupus erythematosus ($p<0.0005$)[12]. Additionally, one study reported that female patients with CSU had a higher prevalence of thyroiditis and vitiligo compared to males[13]. In our study, comprehensive systemic evaluations were conducted in patients with CU, and only autoimmune thyroiditis was found to be statistically significantly higher in women than in men ($p=0.024$).

Angioedema is a common *clinical* manifestation of CU. In a systematic review and meta-analysis, angioedema occurred in more than a third of patients with CSU, but the prevalence in individual studies ranged from 5 to 67 per cent[14]. A study reported that angioedema coexisted with or appeared during the course of CU in 40% of patients and was associated with disease duration[3]. Similarly, in this study, the prevalence of angioedema was 44.2%. In a retrospective study women presented more often with urticaria accompanied with angioedema[15]; on the contrary, no difference was observed between genders in our study ($p=0.462$).

Regarding urticaria subtypes, 32.7% of patients in our study had CSU alone, 13.7% had CIndU alone, and 53.6% had both conditions. These findings are in agreement with previous estimates showing that among CU cases, approximately 5–25% of patients have CIndU[16], and it is estimated that 20–30% of adults with CSU also have CIndU[17].

Symptomatic dermographism is reported as the most common type of inducible urticaria, affecting 24.8% of patients with chronic spontaneous urticaria.[18] Studies have shown its prevalence ranges from 40.7% [19] to three-quarters of patients, with no gender differences[20]. In our study, dermographism (29.5%) was the most common physical urticaria, followed by cold contact urticaria (14.1%) and heat contact urticaria (10.3%), aligning with existing literature. We found no significant gender differences in physical urticaria types, except for exercise-induced urticaria, which was significantly higher in males (p=0.015).

One study found no gender difference in treatment response[21], while another reported that nonresponse to CsA and Omalizumab was more common in females[22]. However, in our study, omalizumab non-response and CsA use were significantly higher in males (p=0.014), with no gender differences observed for other treatments.

The findings of this study reinforce the significant impact that CU has on patients' quality of life (QoL), encompassing not only physical discomfort but also profound psychological and functional impairments. CU is frequently accompanied by fatigue, sleep disturbances, emotional distress, and social limitations, all of which contribute to a broader psychosocial burden [23]. The most common mental disorders observed in patients with CU include depression, anxiety, and somatoform disorders[5].

CU is associated with an increased risk of depression and anxiety, with a study reporting prevalence rate of 48.1% and 38.0%, respectively[24]. In the same study, while anxiety levels were similar between CU and asthma patients, depression was significantly more common in CU patients (48.1% vs. 28.2%, p<0.039)[24]. Another study found that anxiety and depression levels were higher in CU patients compared to controls[25].

In this study, 26.7% of CU patients had a PSQI score ≥ 5, indicating poor sleep quality, whereas none of the individuals in the control group met this threshold. Comparatively, a study from Egypt[26] reported poor sleep quality (PSQI>5) in 48.4% of CU patients, while a study conducted in Turkey[27] found this rate to be as high as 87.5%. Additionally, more than half of CSU patients have been reported to experience frequent sleep disturbances due to pruritus[28]. These findings underscore the high prevalence of sleep impairment among CU patients, although the reported rates vary across different populations.

CU and FMS are both chronic conditions that significantly impair quality of life and frequently co-occur with psychiatric and somatic symptoms. Recent research suggests potential overlaps in their pathophysiology, highlighting the need for integrated clinical approaches. In this study, the prevalence of FMS among CU patients was significantly higher (38.5%) than in controls (10.6%, p<0.001), supporting findings from prior studies[29] that reported similar trends. Additionally, CU patients with FMS experienced a longer disease duration (p=0.001), suggesting that prolonged urticaria may contribute to chronic pain syndromes. This co-occurrence may be driven by shared mechanisms such as central sensitization, stress response dysregulation, and immune system alterations[30].

FMS is known to diminish quality of life through widespread pain, fatigue, sleep disorders, and psychological distress. Neuroimaging studies have shown altered thalamic function in FMS, indicating disrupted pain processing[30]. Furthermore, sleep disturbances may exacerbate stress and inflammation, while cutaneous nerve dysfunction and neuropeptide activity can promote neurogenic inflammation—factors that may also play a role in CU[30].

Although FMS was significantly more prevalent in women (p=0.028) in this study, no gender-based differences were found in CU severity, sleep quality, or psychological distress. This suggests that while FMS disproportionately affects women, the psychosocial burden of CU is substantial and comparable across genders.

Memet et al. reported a positive correlation between disease activity and depression severity in patients with CSU[31]. Similarly, another study demonstrated that sleep disturbances in CU were associated with poorer disease control, increased pruritus and swelling, as well as higher levels of anxiety and sadness[32]. Consistent with these findings, our study also showed that patients with uncontrolled urticaria, as determined by UAS7 scores, had significantly higher VAS pain, PSQI and HADS depression scores, and a greater prevalence of FMS compared to those with well-controlled disease.

Our findings indicate an association between omalizumab use and lower anxiety symptoms. These observations are in line with previous reports describing improvement in anxiety and insomnia among patients receiving omalizumab[33]. The association may be explained by better disease control achieved with treatment, underlining the potential role of effective urticaria management in alleviating psychiatric comorbidities.

However, while treatment-related improvements highlight the importance of effective disease control at the individual level, broader cultural, socioeconomic, and healthcare system factors must also be considered in understanding the prevalence and comorbidity patterns of CU. A population-based study from China reported that higher parental socioeconomic status was associated with an increased prevalence of CSU in adolescents, a finding that may reflect not only improved healthcare access and greater disease awareness but also urbanization-related factors such as

environmental pollution, dietary changes, childhood obesity, and high caesarean section rates[34]. Similarly, a recent global analysis of urticaria burden (1990–2021) demonstrated marked regional variations, with low- and middle-SDI regions consistently exhibiting the highest prevalence, incidence, and DALY rates, largely attributable to environmental exposures, limited healthcare resources, and underdiagnosis, whereas high-SDI regions showed the lowest burden[35].

CU is not merely a cutaneous condition but a systemic disorder with wide-ranging psychological, physiological, and social implications. The high prevalence of mental health disorders, sleep disturbances, and fibromyalgia underscores the need for a multidisciplinary approach to management. Routine screening for psychiatric, autoimmune, and metabolic comorbidities, along with timely intervention, may lead to improved clinical outcomes and enhanced quality of life for patients with CU. Moreover, future research and management strategies should also account for cultural, socioeconomic, and healthcare system differences, as these contextual factors significantly shape disease prevalence, comorbidity patterns, and patient outcomes across populations.

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