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Evaluation of Anxiety, Depression and Quality of Life in Patients with Chronic Urticaria

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ABSTRACT

Objective: Chronic urticaria (CU), a common disease characterized by itching wheals, leads to a negative effect of on quality of life (QoL). It may cause anxiety and depression or result in exacerbation of these. We aimed to i) evaluate depression, anxiety levels and QoL in patients with CU and compare these with those of controls, ii) show whether there is any correlation between disease activity and QoL, anxiety, and depression.

Materials and Methods: A total of 105 CU patients and 86 controls, all above the age of 18 years, were included. Levels of anxiety, depression, and disease activity in patients and controls were measured with the Spielberger State/Trait Anxiety Inventory (STAI-S/T), Beck Depression Inventory (BDI), and Urticaria Activity Score 7 (UAS7). QoL was evaluated with the Dermatology Life Quality Index (DQLI) for CU patients. Data were analyzed with SPSS 24.0. A p-value of less than 0.05 was considered statistically significant.

Results: STAI-S showed that the anxiety rate was nearly two-fold in patients with CU compared to the controls (63.4% vs. 35.1%, p=0.001). When BDI scores were categorized, a higher fraction of controls had minimal BDI scores, compared to the patients who had moderate to severe depression (75.2% vs. 39%, p=0.0001). A positive, but low-to-moderate correlation was determined between disease activity and impaired QoL (R: 0.448, p: 0.001).

Conclusion: Anxiety and depression levels were higher in CU patients. DQLI was low-to-moderately correlated with disease activity; patients with higher disease activity had higher levels of impairment in the quality of life. A psychological pre-assessment and psychiatric consultation in necessary cases could make a significant improvement in the management of CU.

Keywords: Allergy, anxiety, chronic urticaria, depression, quality of life.

INTRODUCTION

Chronic urticaria (CU) is a common disorder characterized by itchy erythematous papules or plaques with superficial swelling of the dermis and wheals for more than six weeks (1). Autoimmune diseases, chronic infections, pseudoallergens, stress and immune dysfunctions are conditions associated with the prevalence and severity of CU. However, a considerable number of CU patients remain idiopathic, even after many years of follow-up and despite extensive work-up to identify possible underlying causes (2,3).

A frequent question an allergologist faces in daily clinical practice is: "Are these hives on the body caused by stress?" Indeed, the relationship between psychological factors and CU has been researched for a long time (4). Although many studies report that anxiety is a major aggravating factor for urticaria and CU patients have increased incidence of anxiety and depression, it is not certain whether anxiety and depression are the cause or the result of urticaria (5). Interestingly, there are several case reports indicating recovery from urticaria following psychotherapy and/or antidepressant therapy in patients with psychiatric diseases, such as anxiety, depression and post-traumatic stress disorder (6,7). In patients with chronic urticaria, disease exacerbations, frequency of hospital admissions, long-term use of antihistamines, side effects of medicines, sleeping disorders, social isolation,

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and the negative effect of urticaria on quality of life (QoL) may cause or exacerbate anxiety and depression (8).

Although there are several studies on the relationship between psychological factors and the frequency, severity, or effect of CU on QoL, the literature is limited on the status of QoL, psychological factors, and severity of CU altogether, as well as on the correlation between these factors. Herein, we aimed to combine interview/questionnaire-based psychiatric and clinical allergy evaluations of depression, anxiety levels, and QoL in patients with CU and compare them with controls. We also aimed to show whether there is correlation between disease activity and QoL, anxiety, and depression in patients with CU.

MATERIALS and METHODS

Study Design, Place and Time

This cross-sectional study was performed at an Allergy and Immunology clinic that provides services to a wide geographical area in southern Turkey. Ethical approval was gained from (censored) University Non-Interventional Clinical Studies Ethics Committee (Date: 10.01.2019, Approval number: 01/13). Additional approval to carry out the study was received from (censored) Provincial Health Directorate Scientific Studies Review Commission. All participants signed an informed consent form prior to the study.

Subjects

A total of 105 patients diagnosed with chronic urticaria (70 females, 35 males) were included in the study. A total of 86 age- and sex-matched healthy subjects (57 females, 29 males) were included as the control group. Inclusion criteria for the study group were i) being diagnosed with CU, ii) aged between 18 and 65 years, and iii) able to sufficiently read, write, and comprehend the Turkish language. Exclusion criteria were i) a cerebral and cognitive disorder, ii) a malignant disease, iii) history of a major chronic disease, iv) having used corticosteroids in the last four weeks, and v) use of antidepressants or antipsychotic drugs. The diagnosis of CU was based on the current European Academy of Allergology and Clinical Immunology / Global Allergy and Asthma European Network / European Disability Forum/World Allergy Organization (EAACI/GA2LEN/EDF/WAO) guidelines (3).

Demographic and clinical data—age, gender, marital status (single/divorced or married), education status (primary school, high school or university), income level (low, moderate/high), and information on current medications—were recorded for all participants.

Assessment Instruments

The urticaria activity score (UAS7) was used according to the recommendations of EAACI/GA2LEN/EDF/WAO guidelines to determine urticaria disease activity (3). An urticaria activity score was determined for the previous seven days, varying between 0 and 42 points. UAS7 was administered before other assessment instruments.

Levels of depression, anxiety, and QoL were assessed with the Beck Depression Inventory (BDI), State-Trait Anxiety Inventory (STAI), and the Dermatology Life Quality Index (DLQI), respectively. All questionnaires were written and self-reported by participants.

BDI, adapted to Turkish by Hisli (9), was used to evaluate the depression level of all participants. The inventory is comprised of 21 items, with each question scored between 0 and 3. Total score varies between 0 and 63; higher scores are evaluated as higher depression levels. For the interpretation of symptom severity, score intervals have been recommended as "0–13: minimal," "14–19: mild," "20–28: moderate," and "29–63: severe" (10).

STAI, adapted to Turkish by Öner and Le Compte (11), was used to evaluate the anxiety level. STAI consists of two parts, which are the state anxiety scale (STAI-S) and trait anxiety scale (STAI-T). Each item is scored with a four-point Likert-type scale. Total trait and state anxiety scores vary between a minimum of 20 and a maximum of 80 points, with higher scores corresponding to higher anxiety levels. Although there are no conventional cut-off scores for STAI, a cut-off point of 39–40 was previously reported (12).

To measure QoL, DLQI was used as a dermatological disease-specific QoL measurement (13). The DQLI inventory consists of a total of 10 Likert-type questions, with a maximum of 30 and a minimum of 0 (zero), with the higher scores indicating a greater impairment in QoL. Ranges of scores were recommended as "0–1: no effect at all on the patient's life," "2–5: small effect on the patient's life," "6–10: moderate effect on the patient's life," "11–20 very large effect on the patient's life," and "21–30 extremely

large effect on the patient's life" (14). DLQI scores were obtained from CU patients only.

Statistical Analysis

All study data statistical analyses were performed with IBM SPSS (Statistic Program for Social Sciences) version 24 for Windows (IBM). Demographic and clinical data were presented as mean and standard deviation (SD) or as number and percentage values. For inter-group analysis, a chi-square test was used for categorical variables. Mann–Whitney U and Kruskal–Wallis H tests were used for the comparison of continuous data. Spearman's correlation tests were used to analyze the relationship between continuous data. A p-value of less than 0.05 was considered statistically significant.

RESULTS

The demographic characteristics of the patient with CU and control groups are given in Table I. Patient and control groups were similar regarding age, gender, education, and marital and socioeconomic status. The mean age of the study population was 37 years; two-thirds of the study population were female, had primary education, and were married. More than half of the study population had a moderate-to-high socioeconomic status.

BDI scores, as well as STAI-S and STAI-T scores, were higher in CU patients compared to controls (p=0.0001, Table II). Using a cut-off of 40 for STAI-S, patients with CU had a two-fold rate of anxiety compared to controls (63.4% vs. 35.1%, p=0.001). A higher fraction of controls had

Table I: Demographic and clinical characteristics of the study population.

	Patients (n=105)	Controls (n=86)	P value
Age, years	37.53 ± 13.7	37.65 ± 10.03	0.945
Duration of illness, weeks	96 (6-676)	-	-
UAS7 score	28 (14-42)	-	-
Gender			
Female	70 (66.7%)	57 (66.3%)	
Male	35 (33.3%)	29 (33.7)	0.955
Educational status			
Primary	66 (63%)	61 (71%)	
High school	22 (21%)	19 (22%)	
University	17 (16%)	6 (7%)	0.14
Marital status			
Single	32 (30.5%)	25 (29.1%)	
Married	73 (69.5%)	61 (70.9%)	0.83
Socioeconomic status			
Low	51 (48.6%)	31 (36.1%)	
Moderate-High	54 (51.4%)	55 (63.9%)	0.08

UAS7: Urticaria activity score.

Table II: STAI-S, STAI-T, BDI, and DQLI scores of the study population.

	Patients (n=105)	Controls (n=86)	P value
STAI-T	44.97 ± 9.83	37.63 ± 10.35	0.0001
STAI-S	47.70 ± 8.93	42.18 ± 9.85	0.0001
BDI	16.08 ± 9.22	9.67 ± 8.37	0.0001
DQLI	13.26 ± 6.62	-	-

BDI: Beck Depression Inventory, **DLQI:** Dermatology Life Quality Index, **STAI-T:** Spielberger Trait Anxiety Inventory, **STAI-S:** Spielberger State Anxiety Inventory.

minimal BDI scores (70.9% vs. 24.8%, p=0.0001, Figure 1). The frequency of moderate-to-severe depression dropped dramatically in the control group. In contrast, in the patient group, more than a third of the population had moderate-to-severe depression (29.5% vs. 10.5% in the moderate and 9.5% vs. 2.3% in the severe group, respectively, p=0.0001, Figure 1). Only 3 patients had the lowest possible DLQI scores (2.9%), meaning no effect at all on the patient's life; 9 (8.6%) had a small, 28 (26.7%) had a moderate, 47 (44.8%) had a very large and 18 (17.1%) had an extremely large effect on the patient's life.

A subgroup analysis among CU patients revealed that the STAI-S and STAI-T scores of women were higher than those of men (46.5±9.7 vs. 41.8±9.4, p = 0.02 and 49.6±8.2 vs. 43.8±9.1, p = 0.002, respectively). Higher state and trait anxiety scores in women were also observed in the control group (39.2±9.52 vs. 34.3±11.28, p=0.05 and 44.2±9.17 vs. 38.2±10.11, p=0.013, respectively). BDI scores were also higher in women compared to men with CU (17.2±8.9 vs. 13.7±9.4, p=0.03). However, no significant difference was determined between genders with regard to BDI depression scores in the control group.

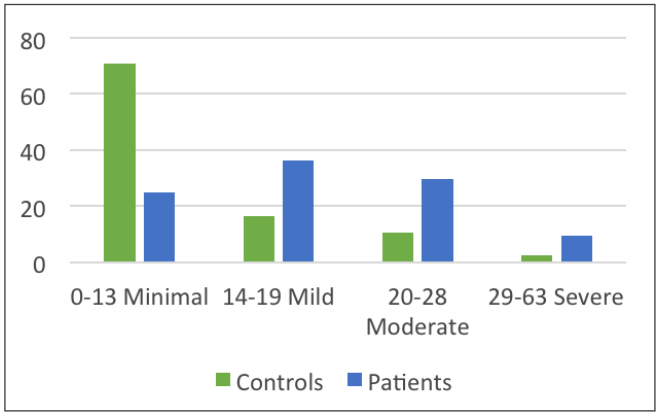

Figure 1. Frequency distribution of BDI depression scores of the patient and control groups according to severity classification (**BDI:** Beck Depression Inventory).

Urticaria disease activity, measured by UAS7, was similar regarding age, gender, marital, educational, and socioeceonomic status within the patient group. UAS7 score was higher in patients with a quality of life score of 11 and above (11–20 very large effect on the patient's life and 21–30 extremely large effect on the patient's life) compared with patients with lower scores (6–10: moderate effect on the patient's life, and 0–6: minimal effect on the patient's life) (28.5±7.5 vs. 24.6±6.9, p=0.01).

While we identified several statistically significant positive correlations between DLQI-UAS7, STAI-S and STAI-T, STAI-S and BDI, STAI-T and BDI, each of the STAI-S, STAI-T and BDI scores (all p values below 0.001) in the correlation analysis results of the CU patients, all correlation coefficients showed a low-to-moderate positive effect. All correlation test results of the patient group are presented in Table III.

DISCUSSION

In this study, we aimed to evaluate depression, anxiety, and QoL in patients with CU and show whether there is correlation with disease activity. Our results show higher anxiety and depression rates in CU patients compared to controls. Anxiety and depression were even higher in women compared with men in both the patient and control groups in accordance with the literature (15). In CU patients, QoL evaluated with DQLI was not associated with anxiety and depression but was low-to-moderately correlated with disease activity. Patients with higher disease activity had particularly higher levels of impairment in their quality of life.

An increasing number of epidemiological and clinical studies report that the prevalence of psychiatric comorbidities, such as hypochondriasis, depression, schizophrenia, and social introversion, was significantly higher in CU patients, irrespective of the duration of illness

Table III: Correlation coefficient analysis of DQLI, STAI-T, STAI-S and BDI scores in the patient group.

	STAI-S	STAI-T	BDI	UAS7	Age	Duration of illness
DLQI	0.02	0.015	0.073	0.437	-0.15	0.157
STAI-S	-	0.447	0.476	0.19	0.025	-0.033
STAI-T	-	-	0.497	0.122	0.08	-0.087
BDI	-	-	-	0.035	-0.013	-0.032

BDI: Beck Depression Inventory, **DLQI:** Dermatology Life Quality Index, **STAI-T:** Spielberger Trait Anxiety Inventory, **STAI-S:** Spielberger State Anxiety Inventory, **UAS7:** Urticaria activity score.

(16). Although the literature is conclusive regarding the fact that psychiatric comorbidities are more prevalent in CU, the exact prevalence is reported at a wide range. In a systematic review and meta-analysis of psychiatric comorbidities in chronic urticaria, psychiatric comorbidity was determined in 31.61% of CU patients, with the highest prevalence being sleeping disorders, followed by anxiety and mood disorders (30.6% and 29.4%, respectively) (17). However, Özkan et al. (18) reported psychiatric comorbidities in 60% of patients with CU; while the most common diagnosis was depressive disorder with 40%, it was followed by anxiety disorder with 12%, somatoform disorder with 6%, and bipolar disorder with 2%. Additionally, Bozo et al. (19) have shown that CU patients with constantly high anxiety reported higher depressive symptoms, and similar to our results, anxiety and depression levels were shown to be correlated. In our study, both state and trait anxieties were higher in CU; the state anxiety prevalence was 63.4%. Additionally, moderate-to-severe depression was as prevalent as 40% in CU, which is nearly four times more common compared to the controls.

QoL, along with a higher burden of psychiatric comorbidities, was also negatively affected in CU. A previous study by Staubach et al. (20) demonstrated that the quality of life was significantly decreased in CU patients, and there was no correlation with disease duration. Additionally, psychiatric comorbidities, such as anxiety and depression, have been stated to significantly increase the impairment in the quality of life. Consistent with the literature, we showed a lower QoL in patients with CU.

The literature is limited regarding studies with a combined aim to evaluate anxiety, depression, and quality of life in patients with CU. One such study conducted by Engin et al. (8), including 73 CU patients and 34 healthy controls, evaluated the Beck Anxiety Inventory (BAI), BDI, and World Health Organization Quality of Life Assessment-Brief (WHOQOL-BREF) of the participants. In concordance with our results, CU patients had higher BAI and BDI levels and a lower quality of life compared to healthy controls. No relationship was observed between the WHOQOL-BREF, BAI, BDI scores, and age, duration of illness and disease activity in CU patients. In contrast to these results, herein, we report a low-to-moderate correlation between QoL and disease activity. Although the relationship is possibly complex and due to several factors, one possible explanation may be the severity of symptoms, such as itching resulting in a lower QoL or aesthetic aspect and unpredictable exacerbations (21).

Our study has a number of limitations. It is a single-center, cross-sectional study. Patients were non-randomized, and results reflect real-life data. However, herein we report a high number of detailed survey data of CU patients. An interventional approach to treating any psychiatric comorbidity and following up CU treatment was out of the scope of this research project. In this study, we used a dermatological disease-specific model of QoL measurement, DLQI, instead of a more urticaria-specific QoL instrument, such as Chronic Urticaria Patient Perspective (CUPP), as it was not readily available in Turkish at the time of the study. Additionally, we excluded patients currently under antidepressant and antipsychotic drugs to reduce bias since these patients may have reduced anxiety and/or depression. Therefore, these results should be assessed accordingly, and further studies are needed to confirm them.

In this study, we have demonstrated, concordant with the current literature, higher anxiety and depression rates in CU patients. We also demonstrated that DQLI was low-to-moderately correlated with disease activity and patients with higher disease activity had more significant impairment in the quality of life. An evaluation in accordance with the literature shows that psychological pre-assessment and psychiatric consultation (in necessary cases) will ensure significant progress in the management of CU patients. CU patients with anxiety and depression symptoms may be protected from the disease burden brought by anxiety and depression with the help of treatment and support after their psychiatric assessment by the psychiatrist they are referred to, and they will gain some positive benefit regarding the disease course. In line with this approach, there is a need for further studies to evaluate the effect of the treatment of anxiety and depression accompanying CU on CU symptoms and the disease course.

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