

A Cohort Study of the Relationship Between Anger and Chronic Spontaneous Urticaria

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ABSTRACT

Introduction: Anger plays a major role in psychodermatological diseases. Researchers have reported that anger and other psychological factors play a role in the etiology of chronic urticaria. This study aimed to examine symptoms of anger, anger-related behavioral patterns, thoughts associated with anger, situations that cause anger and experiences of interpersonal anger in patients

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with chronic spontaneous urticaria (CSU). The authors hypothesized that patients with CSU react to more situations with anger and experience more anger symptoms as compared to alopecia areata (AA) patients and healthy controls.

Methods: The cohort study population consisted of literate adult patients aged <65 years that were diagnosed with CSU at the outpatient dermatology clinics of Başkent and Gazi University, Ankara, Turkey, between September 2011 and October 2012. The first control group included individuals without any physical or mental disorders and the second one included literate adult patients diagnosed with AA. The patients and controls were matched according to age, gender, and level of education. A sociodemographic data form, and the Hospital Anxiety and Depression Scale and Multi-Dimensional Anger Inventory were administered to the participants. Data were analyzed using SPSS v.17.0 for Windows. The primary outcome was to determine whether there was a relationship between anger and CSU.

Results: The CSU group consisted of 30 participants; AA group consisted of 30

participants; and the healthy group consisted of 39 participants. Anxiety and depression scores in the CSU group were significantly higher than those in the healthy control group. Symptoms of anger, situations that cause anger, and thoughts associated with anger were significantly more common in the CSU group compared to AA group and healthy group.

Conclusion: More of the CSU patients were observed to respond with excessive anger to most situations, to have high levels of anxiety anger and passive aggressive interpersonal relationships.

Keywords: Anger; Psychodermatology; Psychosomatic medicine; Psychosomatic disorders; Urticaria

INTRODUCTION

Anger plays a major role in somatization, and the relationship between the expression of anger and somatic symptoms has been investigated. It was reported that introverted anger was associated with somatic disorders, somatoform disorders, and anxiety disorders, whereas the expression of anger was strongly associated with somatization in depressive disorders [1, 2]. Many researchers have reported the role of psychological factors in the etiology of chronic spontaneous urticaria (CSU) [3]—especially emotional distress, severe depression and anxiety [4–6].

The present study aimed to examine symptoms of anger, anger-related behavioral patterns, situations that cause anger, thoughts associated with anger, and the experience of anger in interpersonal relationship in patients diagnosed with CSU. Furthermore, it was aimed to determine if any dimensions of anger play a specific role in the etiology of CSU, as compared

to alopecia areata (AA)—another psychodermatological disease. The authors hypothesized that patients with CSU react to more situations with anger and experience more anger symptoms as compared to AA patients and healthy controls.

METHODS

The study population included three groups. The first one, CSU group, included literate patients aged 18–65 years that presented to Başkent and Gazi University between September 01, 2011 and October 30, 2012, were diagnosed as CSU, had the mental capacity to complete the assessment tools, and volunteered to participate. A dermatology specialist made the diagnosis of CSU by ruling out any etiological factor that can cause chronic urticaria such as allergy, infection, and autoimmunity with laboratory tests. The second group, AA group, included literate patients diagnosed with AA. AA and CSU groups each included 30 patients. The third group, healthy group, included 39 volunteers with no known psychiatric or dermatological disease that were matched with the patients according to age, gender, and level of education via the snowball technique. All the evaluations were made during remission periods of diseases. Each participant was administered a sociodemographic/clinical data form by the researchers, and self-completed the Hospital Anxiety and Depression Scale and Multidimensional Anger Inventory.

Compliance with Ethics

The Başkent University Ethics and Research Board, Ankara, Turkey, approved the study protocol. All procedures followed were in

accordance with the ethical standards of the responsible committee on human experimentation (institutional and national) and with the Helsinki Declaration of 1975, as revised in 2000 and 2008. Informed consent was obtained from all patients for being included in the study.

Sociodemographic/Clinical Data Form

This form was designed by the researchers to collect sociodemographic and clinical data in accordance with the study's aims.

The Multidimensional Anger Inventory (MAI)

MAI was developed in order to assess feelings, cognitions, and attitudes towards anger. The scale was reported to be valid and reliable for use in Turkey [7]. MAI consists of 158 items for assessing 5 dimensions of anger: symptoms of anger, anger-related behaviors, interpersonal anger reactions, situations that cause anger, and thoughts associated with anger [7].

Hospital Anxiety and Depression Scale (HADS)

HADS is a self-assessment scale used for identifying the risk of anxiety and depression, and for measuring the severity of anxiety and depression in people with an organic disorder that present for primary healthcare [8]. The Turkish version used in this study was reported to be valid and reliable for use in Turkey [9].

Statistical analysis was performed using SPSS v.17.0 for Windows (SPSS, Inc., Chicago, IL). Parametric analysis was used to examine the effect of independent variables methods and descriptive analysis was used to analyze the sociodemographic variables. One-way analysis

of variance (ANOVA) was used to examine differences in the independent variables between groups and post hoc analysis was utilized to determine the significance of differences. A p value ≤ 0.003 after Bonferroni adjustment was accepted as statistically significant.

RESULTS

Mean age in the AA group was 33.3 ± 8.9 , 37.1 ± 13.4 years in the CSU group, and 37.7 ± 10.7 years in the control group. Mean age did not differ significantly between the groups ($\chi^2 = 92$, $p = 0.077$). CSU group consisted of 30 participants; 17 of them were female, 21 of them were married and 19 of them had graduated from university. AA group also consisted of 30 participants; 15 of them were female, 19 of them were married and 18 of them were graduated from university. The healthy group consisted of 39 participants; 25 of them were female, 21 of them were married and 35 of them were graduated from university.

Mean HADS depression scores for CSU, AA and healthy groups were 7.07, 6.93 and 3.95, respectively. Mean HADS anxiety scores for CSU, AA and healthy groups were 8.53, 9.07 and 5.41, respectively. ANOVA was used to determine if there were any differences in HADS and MAI scores between groups; the results are shown in Table 1.

The results of post hoc comparison following Bonferroni correction were, as follows:

1. Symptoms of anger: The symptoms of anger score in the CSU group (mean 40.5) and AA group (mean 35.9) was higher than in the healthy control group (mean 29.0) ($p = 0.000$).
2. Anger-related behaviors: The anxious behaviors score in the CSU group (mean

Table 1 The results of one way variance analysis for between group differences with regards to obtained variables

Values	<i>df</i>	<i>F</i>	<i>p</i>	Post hoc
HADS depression	(2.96)	6.372	0.003	CSU > healthy (<i>p</i> = 0.007) AA > healthy (<i>p</i> = 0.011)
HADS anxiety	(2.96)	8.673	0.000	CSU > healthy (<i>p</i> = 0.005) AA > healthy (<i>p</i> = 0.001)
Multidimension of anger				
1. Anger symptoms				
Anger symptoms	(2.96)	14.923	0.000	CSU > healthy (<i>p</i> = 0.000) AA > healthy (<i>p</i> = 0.005)
2. Anger related behaviors				
Aggressive	(2.94)	4.251	0.017	–
Calm	(2.94)	2.144	0.123	–
Anxious	(2.94)	11.273	0.000	CSU > AA (<i>p</i> = 0.029) CSU > healthy (<i>p</i> = 0.000)
3. Interpersonel anger reaction				
Revenge reactions	(2.94)	3.171	0.046	–
Passive aggressive reactions	(2.93)	6.408	0.002	CSU > healthy (<i>p</i> = 0.004) AA > healthy (<i>p</i> = 0.020)
Introverted reactions	(2.94)	1.683	0.191	–
Unconcerned reactions	(2.96)	0.250	0.779	–
4. Conditions that cause anger				
Not being taken seriously	(2.93)	13.223	0.000	CSU > AA (<i>p</i> = 0.009) CSU > healthy (<i>p</i> = 0.000)
Injustice	(2.93)	6.583	0.002	CSU > healthy (<i>p</i> = 0.009)
Being criticized	(2.95)	7.699	0.001	CSU > healthy (<i>p</i> = 0.001) AA > healthy (<i>p</i> = 0.012)
5. Thoughts associated with anger				
Cognitions related to anger	(2.95)	21.068	0.000	CSU > healthy (<i>p</i> = 0.003)
Anger out	(2.95)	21.068	0.000	CSU > AA (<i>p</i> = 0.002) CSU > healthy (<i>p</i> = 0.000) AA > healthy (<i>p</i> = 0.016)
Anger in	(2.94)	5.882	0.004	–
Hostile outlook	(2.95)	11.870	0.000	CSU > healthy (<i>p</i> = 0.000) AA > healthy (<i>p</i> = 0.042)

A value of $p \leq 0.003$ was accepted statistically significant after Bonferroni adjustment

HADS Hospital Anxiety and Depression Scale, CSU chronic spontaneous urticaria, AA alopecia areata

- 15.7) was significantly higher than in the AA group (mean 13.8) and the healthy control group (mean 12.4) ($p = 0.000$).
3. Interpersonal anger: The passive aggressive reactions score in the CSU group (mean 35.2) and AA group (mean 34.4) was higher than in the healthy control group (mean 30.5) ($p = 0.002$).
4. Situations that cause anger: The “not being taken seriously” score in the CSU group (mean 79.5) was higher than in the AA group (mean 69.4) and healthy group (mean 63.3) ($p = 0.000$); the injustice score in the CSU group (mean 71.4) was higher than in the healthy group (mean 63.4) ($p = 0.002$), and the being criticized score

in the CSU group (mean 18.5) and AA group (mean 17.8) was higher than in the healthy group (mean 15.3) ($p = 0.001$).

- Thoughts associated with anger: The “cognitions related to anger” score in the CSU group (mean 23.3) was higher than in the healthy group (mean 17.0) ($p = 0.000$); the “anger out” score was higher in the AA group (mean 18.7) than in the healthy group (mean 15.3), and was significantly higher in the CSU group (mean 23.2) than in the AA group (mean 18.7) and healthy group (mean 15.3) ($p = 0.000$); the “anger in” score in the CSU group (mean 16.3) was significantly higher than in the AA group (mean 13.7) and healthy group (mean 12.9) ($p = 0.000$); and the “hostile outlook” score in the CSU group (mean 13.5) and AA group (mean 11.2) was significantly higher than in the healthy group (mean 8.9) ($p = 0.000$).

DISCUSSION

Findings in the literature regarding anxiety and depression scores in patients with dermatological disease are inconsistent. The present findings show that depression and anxiety scores in the CSU and AA patients were significantly higher than in the healthy controls, as previously reported. Sperber et al. reported that depression and anxiety scores were higher in CSU patients than in controls; however, Topal et al. noted higher scores in the severity of anxiety, but not in depression [10, 11]. Higher depression and anxiety scores in both AA and CSU patients bring to mind that this fact might be specific for dermatological diseases. Preston reported that depression accompanies the most frequently seen dermatological diseases at a rate >50% [12]. In

addition, apart from dermatological diseases, the fact that similarly higher depression scores reported in coronary disease and gastrointestinal system disorders could address that it is valid for all diseases of psychosomatic origin [13, 14]. Although some studies suggest that psychiatric disorders play a role in the etiology or exacerbation of some dermatological diseases, it is not possible to determine if their role is causative or secondary, because many studies have reported that dermatological disease is a risk factor for depression and anxiety.

Although the role of anger in psychosomatic diseases has been investigated, a limited number of multidimensional studies on anger have examined symptoms, thoughts, and behaviors associated with anger. In the present study the higher anger scores in the CSU and AA groups than in the control group could indicate that the patients experienced the physiological aspects of anger more frequently than the controls. As this finding cannot be generalized to other psychosomatic diseases, more comprehensive relevant studies are needed. In term of situations that cause anger, it was observed that perceptions of injustice, not being taken seriously, and being criticized, were associated with higher anger scores in the CSU group, which might be why the frequency of anger symptoms was higher in CSU group and also it could demonstrate that the occurrence of anger happened more easily in CSU groups than healthy controls.

In the present study the threshold for anger was lowest in the CSU group, which is consistent with a report suggesting that patients with CSU experience more irritation than healthy controls [15]. Apart from conditions “injustice” and “being criticized”, the fact that “not being taken seriously” was associated with higher anger scores for CSU

group compared to both AA and groups. The condition “not being taken seriously” may be a specific cause of anger for CSU patients and this is consistent with Papodopoulos et al.’s [16] finding that CSU patients have low self-esteem. Anger was suggested to be inversely correlated with self-esteem [17]. Although being insignificant in CSU group, it could be a confounding variable for anger arousing situations, due to the effect of higher depression scores on self-esteem.

The CSU patients in the present study had higher anxious behavior scores than the AA patients and controls. Many earlier studies reported that CSU patients exhibit introverted anger reactions and had difficulty expressing their anger [1, 18–20]. It is possible that CSU patients are anxious due to their inability to control anger. It appears that the results about how anger was reflected in interpersonal relationships were somewhat consistent with the previous findings. Passive aggressive behavior in interpersonal relationships were observed more frequently in the present study’s CSU and AA groups than in the control group. This result could be generalized to other psychosomatic diseases. Likewise, Stokvis reported that repressed aggression was an important factor in all psychosomatic diseases [21]. Nevertheless, it was reported that not openly expressed anger was reverted toward one’s self later and resulted in psychosomatization or depression [1]. Specific psychiatric interventions that help patients manage and express anger more adaptively may be useful to lower emotional distress in patients with CSU.

Although the mechanism of the psychosomatic relationship between anger and urticaria is unclear, biologically, anger may play a role by increasing sympathetic nervous system

activity [22]. In addition the difference of psychosomatic relationship between CSU and AA is still unclear and further studies are needed to determine the difference, if any.

One of the limitations of the present study is that although the size of the sample was adequate, it was insufficient for performing regression analysis and it was not sufficiently heterogeneous to be representative of the general population. As the present study’s patients all lived in Ankara city and the study was performed with a socioculturally homogenous group, the generalizability of the findings—especially those related to anxiety and depression—is limited. Another limitation of the study relating to its reliability is that data were obtained using HADS and MAI, both of which are self-report scales.

CONCLUSION

The present study examined the anger-related behavioral patterns in CSU and AA patients, as well as other dimensions of anger, including symptoms of anger, situations that lead to anger, and thoughts about anger. Comprehensive collaboration between psychiatrists and dermatologists is crucial in the evaluation of patients with dermatological diseases.

Further research questions that could be explored include:

- Are there any other personality features related with CSU?
- Does any type of psychotherapy prevent or reduce relapsing periods of CSU?
- What if anger management therapy were given to CSU patients? Would it prevent or reduce relapsing periods of CSU?
- What is the difference between psychosomatic relationships of CSU and AA?

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Conflict of interest. Ali Ercan Altinöz, Nilgün Taşkintuna, Şengül Tosun Altinöz and Selvi Ceran have no conflict of interest to disclose.

Compliance with ethics guidelines. All procedures followed were in accordance with the ethical standards of the responsible committee on human experimentation (institutional and national) and with the Helsinki Declaration of 1975, as revised in 2000 and 2008. Informed consent was obtained from all patients for being included in the study.

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