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### Brief Report

## Relationship between anxiety, depression and stressful life events with chronic idiopathic urticarial

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#### Abstract

**Introduction:** Chronic idiopathic urticaria is a kind of urticaria, although it doesn't have known external cause, but many studies have shown the role of psychological factors in development of allergic diseases. The aim of this study is to compare the anxiety, depression and mental pressures caused by stressful life events in patients with chronic idiopathic urticaria and healthy people.

**Materials and Methods:** This case-control study was performed on 22 patients with chronic idiopathic urticaria compared with 22 healthy subjects. Both groups responded to the checklist for demographic characteristics, Spielberger State/Trait Personality Inventory, Beck Depression Inventory, Pakel Life Events Inventory and the severity of the urticaria rash. The data analyzed through SPSS 10 software.

**Results:** Results showed no significant difference in terms of age, gender, marital status and education level between the two groups. State/trait anxiety ( $P=0.006$  and  $P=0.003$ ) and depression scores ( $P=0.044$ ) were significantly higher in the case group than control group. In the case of stressful life events, the mean scores of patients and cases were not different significantly ( $P=0.418$ ). On the other hand, the results of the study showed that with increasing the level of state/trait anxiety and depression in patients, the severity of urticaria rash has been significantly increased as well.

**Conclusion:** Regarding the higher level of anxiety and depression in patients with chronic idiopathic urticaria, mental interventions are necessary for the treatment of these patients.

**Keywords:** Anxiety, Chronic idiopathic urticaria, Depression, Stressful life events.

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#### Introduction

Chronic urticaria is a kind of reactive skin lesions, in the form of an edematous plaque with a specified margin that lasts for more than

6 weeks, with a prevalence of about 0.5 to 1 percent of normal population (1-5). Chronic urticaria has significant negative affect on the

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quality of life and can cause sleep disturbances and sleep deprivation throughout the day (6). Chronic idiopathic urticaria, which constitutes about one-third of chronic urticaria, does not have any known cause and definitive treatment. Since the treatment of this disease is more based on antihistamines and steroids, using these drugs for long-term will have irreparable complications, whereas the use of these medications only causes temporary cessation of the disease (1,3,7).

Regarding the role of released corticosteroids because of activity of the adrenal pituitary system on the production of inflammatory interleukins and increased IgE production, one of the reasons that can form chronic idiopathic urticaria are psychological factors such as anxiety and depression, which can lead to immune and allergic reactions (7-10).

In different countries, several studies investigated the effects of anxiety and depression on the incidence of chronic urticaria and their relationship has been shown (4,11-14).

But considering the impact of socio-cultural factors on the results of such experiments, these findings cannot be generalized to other societies.

Moreover, there are a few researches that have focused on the role of stressful events in the occurrence of chronic urticaria in Iran. Findings of this study can help patients with chronic idiopathic urticaria, who are the major percentage of chronic urticaria. Moreover, results aid this group of patients who benefit from supportive therapies slightly and could even reduce the complications and therapeutic costs.

### Materials and Methods

This case-control study is done during the years 2013-2015 and investigated 22 patients with chronic idiopathic urticaria who referred to Dermatology Clinic of Imam Reza Hospital of Mashhad. The statistical population was not included under treatment patients; children lower the age of 16, and pregnant or lactating women.

First, oral satisfaction was taken from patients, and then the dermatologist documented the severity of the urticaria as mild, moderate and severe according to the number of rashes and the severity of itching.

The assessment of severity of urticaria is explained in a study by Melink et al (15). The

patients were then asked to answer to the checklist for demographic characteristics including gender, age, education, marital status and state/trait anxiety Spielberger's inventory, Beck Depression inventory, and Pakel Life Events.

Then, the same numbers of people among the companions of patients (with diseases other than urticaria or other autoimmune diseases referring to Imam Reza skin clinic) were entered to the study.

They did not have a history of any specific diseases and did not take any psychiatric medications and were more corresponded with patient group in terms of gender and age. They were selected as control group by purposive sampling and were asked to answer questionnaires.

### Research instrument

*A) Spielberger's State/Trait Anxiety Inventory:* This questionnaire has 40 questions. It consists of state and trait anxiety questions that are answered with very low, low, high and very high, giving them a score of 1-4. Validity of the Persian questionnaire has been assessed by Gholami et al. (16).

*B) Beck Depression Inventory:* It is a 21-items questionnaire with four-choice answers and gives each item a score of 0-3. This questionnaire was normalized in Iran by Jalili and Okhovvat (quoted by Kazemi (17) and Pedram (18)).

*C) Pakel Life Events Inventory:* It contains 68 questions about stressful life events in the past 2 years. The person quantifies the psychological stress of each item in very low, low, moderate, high and very high, and gives them a score of 0-4. Mohammadian has assessed the validity of the Persian questionnaire (19).

After collecting data, they were recorded in the IBM SPSS 21.0 statistical software. Then statistical tests were used to compare the variables.

### Results

In both of the case and control groups, there were 4 males and 18 females. According to the statistical tests, there was no meaningful difference between the two groups regarding age, education level and marital status (Table 1).

**Table 1.** Patient's demographic characteristics

| Variable       | Case  | Control   | Statistical value of the test | Probability value |
|----------------|---|---|-------------------------------|-------------------|
| Age (year)     | 39.73 ± 16.67   | 37.45 ± 12.95   | U Mann-Whitney 241            | P=0.981           |
| Sex            | Male: 18.2%<br>Female: 81.8%  | Male: 18.2%<br>Female: 81.8%  | Fishers' exact test           | P=1.00            |
| Marital status | Single: 40.9%<br>Married: 59.1%   | Single: 27.3%<br>Married: 72.7%   | Pearson Chi-square<br>=0.91   | P=0.34            |
| Education      | Under the diploma: 31.8%<br>Diploma: 18.2%<br>Bachelor: 22.7%<br>Masters: 27.3% | Under the diploma: 27.3%<br>Diploma: 22.7%<br>Bachelor: 27.3%<br>Masters: 22.7% | Pearson Chi-square<br>=0.37   | P= 0.946          |

According to the data analyzes, the severity of rash in the case group was mild in 8 patients (36.4%), moderate in 8 patients (36.4%) and severe in 6 patients (27.3%). The test scores showed that in the case group, the state anxiety was mild in 13.6%, moderate in 54.6% and in 31.8% of cases were severe. While 18.2% of controls had mild and 81.8% of controls had

moderate state anxiety. Also, in the case group the trait anxiety was 9.1% mild, 63.7% moderate and 27.2% severe, while in the control group, the trait anxiety in 27.3% was mild and in 72.7% was moderate. The results of statistical tests indicate that the state and trait anxiety in the case group was significantly more than the control group (Tables 2 and 3).

**Table 2.** Score distribution of state anxiety test

| Variable            | Group   | Mean ± standard deviation | Statistical value of the test | P value |
|---------------------|---------|---------------------------|-------------------------------|---------|
| State anxiety score | Case    | 47.36 ± 11.1              | U Mann-Whitney<br>=126        | 0.006   |
|                     | Control | 38.82 ± 7.98              |                               |         |

**Table 3.** Score distribution of trait anxiety

| Variable            | Group   | Mean ± standard deviation | Statistical value of the test | P value |
|---------------------|---------|---------------------------|-------------------------------|---------|
| Trait anxiety score | Case    | 46.09 ± 10.85             | T= 3.1                        | 0.003   |
|                     | Control | 37.41 ± 7.4               |                               |         |

Depression scores in the case group were mild, moderate and severe in 18.2%, 40.9% and 13.6% respectively. On the other hand, in the control group, 36.4% had mild depression, 22.7% moderate and 4.5% had severe depression.

The scores of the other patients and the control group did not reach the cut-off point. According to the statistical tests, the level of depression in the case group was significantly more than control group (Table 4).

**Table 4.** Score distribution of depression test

| Variable         | Group   | Mean ± standard deviation | Statistical value of the test | P value |
|------------------|---------|---------------------------|-------------------------------|---------|
| Depression score | Case    | 18.73 ± 9.26              | T= 2.08                       | 0.044   |
|                  | Control | 13.23 ± 8.28              |                               |         |

Moreover, the mean scores of Pakel's questionnaire, which shows psychological pressures of the stressful life events, were 32.18 in the patients with chronic idiopathic urticaria and 24.18 in the control group. While this mean

in the case group was greater than control group, but according to the P-value of test, the higher mean of the two groups was not meaningful (Table 5).

**Table 5.** Score distribution of stressful events

| Variable               | Group   | Mean $\pm$ standard deviation | P-value of the normalization test | Statistical value of the test | P value |
|------------------------|---------|-------------------------------|-----------------------------------|-------------------------------|---------|
| Stressful events score | Case    | 32.18 $\pm$ 20.64             | 0.004                             | U Mann-Whitney = 207.5        | 0.418   |
|                        | Control | 24.18 $\pm$ 12.59             | 0.2                               |                               |         |

In this study the correlation between anxiety (state and trait) and depression with severity of rash in patients with chronic idiopathic urticaria was evaluated by Spearman correlation coefficient. The results indicated that whatever the state and trait anxiety scores of patients increased, the severity of urticaria rash increased as well (the measure of the state anxiety correlation was 0.61 and the trait anxiety was 0.69). This correlation has reached to a significant level (the state and trait anxiety with severity of urticaria was  $P=0.002$  and  $P=0.000$ ). There was positive correlation between depression level measured by Beck depression test and severity of urticaria rash. The correlation rate was 0.57 and it was significant ( $P= 0.005$ ).

### Discussion

In this research, patients with chronic idiopathic urticaria and the control group were compared and patients showed a higher level of anxiety and depression than the control group.

These results are similar to previous studies. In a study in 2011 by Barbosa et al., the level of anxiety was significantly higher than the control group (4). Also, in a study in Turkey in 2006 by Engin et al., anxiety and depression levels in patients were measured using Beck anxiety and depression inventory. They found that the level of anxiety and depression in the patients group was significantly higher than the control group (14). In the present study, although the mean scores of stressful life events

in the case group were greater than the control group, this difference did not reach to the significant level.

This result was inconsistent with the findings of a study by Yang et al. in Taiwan. In their study, stressful life events in the chronic idiopathic urticaria group were significantly higher than the control group (20). This contradiction can be due to cultural, social and livelihood differences in the general population among communities and more stressful events in Iranian general population (21-24). The results of this survey show with increasing the level of state and trait anxiety and depression in patients, severity of urticaria would increase as well. In contrary of our results, there was no relationship between scores of depression, anxiety and quality of life with score of severity of urticaria in a study by Engin et al. (14). The reason of difference between results of these two studies is that patients were under treatment in Engin's research, which is an effective factor in severity of urticaria rash (14).

### Conclusion

Findings indicate anxiety and depression in chronic idiopathic urticaria patients are higher than those in healthy people. In addition, with increasing anxiety and depression, the disease becomes more severe and more painful. This shows the psychological stress effects on the onset or aggravated by the inflammatory reaction of the urticari seriously, so early psychiatric interventions, along with the therapeutic interventions of these patients, are necessary.

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