INTRODUCTION

Alopecia areata (AA) is a disorder characterized by scarfree loss of hair, especially on the scalp or anywhere in the body, in sharp, oval-shaped or round patch areas. Sometimes it can progress to the total alopecia, where all hair is lost, as well as the universal form in which all body hair is lost. It is seen equally among men and women. It can be seen in any group and person without discrimination of race, age or gender. Its etiology is thought to be multifactorial; and autoimmune factors, genetic factors, infections, psychological factors and neuropeptides play a role (1). Psychiatric factors are very important among the triggering factors and psychiatric assistance should be provided to the patient if necessary (2). It is also considered as a psychosomatic disease as mental trauma plays an important role in initial and inflammation phase of the disease (3, 4). However, there are psychiatric disorders such as anxiety disorders, obsessive compulsive disorder (OCD), depression, personality disorders that are reported to show comorbidity with AA (5-7). The presence of many psychiatric disorders and factors associated with AA suggests that the disease has a mutual interaction with the mental state. From this point of view, we can point out a mutual interaction in which mental disorders and stressful life events adversely affect the course of the disease and this causes increased mental problems. Distress tolerance (DT) can be defined as the ability to experience and endure negative psychological conditions.
Although distress is deemed an emotional condition, it is accepted that it emerges as a result of cognitive or physical processes (8). DT covers all emotional states and also indicates whether these conditions can be controlled (9). Leyro et al. (10) expresses the level of distress tolerance as the capacity to withstand mental and/or physical events that are actually being experienced or perceived negative emotions and inhibitions. This can be interpreted as more psychiatric and psychosomatic symptoms can be seen in individuals with low capacity to tolerate distress. DT is thought to be one of the factors that determines the response to treatment and is intended to increase in psychotherapy as well as being important in the etiopathology of mental disorders (11). It is essential to identify psychiatric symptoms in AA patients and to study their relationship with the course of their disorders.

We believe that possible differences in DT level may have an effect on psychosomatic symptoms and therefore provide important data for AA. DT has been associated with many mental disorders such as depression, anxiety disorders, OCD, personality disorders and eating disorders (12-14). In this study, it was aimed to determine the levels of distress tolerance in AA patients and compare them with healthy controls.

MATERIALS and METHODS

Thirty-six patients between the ages of 18 and 65 who did not have any dermatological or mental disorder, admitted to Firat University Dermatology outpatient clinic between 03/15/2018 and 03/15/2019, were included in the study. As a control group, 36 healthy volunteers, who had any physical, dermatological or mental disorder, matched with the patient group in age and gender, were included in the study. Sociodemographic-Clinical Data Form (SCDF), Distress Tolerance Scale (DTS), Hospital Anxiety and Depression Scale (HADS) were applied to patients and healthy volunteers. Before starting the study, the necessary permission and approval was obtained from the Ethics Committee of Firat University, Faculty of Medicine (ethics committee approval number 04/02 dated 15.02.2018). All patients and controls were informed prior to this study and their consents were obtained.

Distress Tolerance Scale: Distress Tolerance Scale (DTS), developed by Simons and Gaher, aims to measure the personal differences in the level of distress tolerance. (8). The increase in scale scores indicates the high level of the participants’ DT levels. In addition to the total score of the scale, there are 3 sub-scales: tolerance (DTS-1), regulation (DTS-2) and self-sufficiency (DTS-3). Validity and reliability studies in our country were conducted by Sargin et al. (15).

Hospital Anxiety and Depression Scale: It was developed to determine the risk of occurrence of anxiety and depression and to measure the severity and changes of these symptoms. It was developed mainly for people with physical diseases and those who are admitted to the primary health care group. The test is a self-assessment scale (16). Turkish validity and reliability studies were carried out (17).

Statistical analysis

SPSS Ver. 22 was used for statistical analysis. Descriptive statistics for continuous (quantitative) variables are expressed as mean, standard deviation, minimum and maximum values, while categorical variable number is expressed as (n) and percentage (%). The compatibility of the data to the normal distribution was examined statistically and visually and parametric tests were determined as it was compatible with the normal distribution. The characteristic features and categorical data of the patients were evaluated by Ki Square test. Two dependent groups were analyzed by data analysis, dependent groups by Student t test, independent two groups were analyzed using independent groups Student t test. ANOVA test was performed in cases where there are more than two variables. The correlation between numerical variables was evaluated by Pearson correlation analysis. The significance rate (α%5) was considered p =0.05.

RESULTS

Thirty-six AA patients and 36 healthy subjects, who were matched in age and gender with the patient group and had no history of psychiatric and dermatological disease in their past and present, as control group were included in the study. Sociodemographic and psychiatric scale results of both groups were noted. Demographic information and scale results of patients are summarized in Table 1.

<table>
<thead>
<tr>
<th>Table 1. Characteristics parameters of patients</th>
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<tbody>
<tr>
<td>Alopecia Areata</td>
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<tr>
<td>Control</td>
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<tr>
<td>31.39±11.25</td>
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<tr>
<td>Marital Status</td>
</tr>
<tr>
<td>Female: 10 (27.7%)</td>
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<tr>
<td>Male: 26 (72.3%)</td>
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<td>Positive = 4 (11.1%)</td>
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<tr>
<td>Gender</td>
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<tr>
<td>Positive = 5 (13.9%)</td>
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<tr>
<td>History</td>
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<tr>
<td>Alopecia Areata Control</td>
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<tr>
<td>31.39±11.25</td>
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No significant differences were found between the groups in terms of age and gender. The mean age of the patient group was 30.37±9.45 and the mean age of the control group was 32.97±10.57. In the patient group, significant difference was found in terms of the total score of DTS (patient: 42.08±12.968, control: 58.19±7.285) (p<001) and DTS tolerance (patient 25.69±8.667, control 36.55±5.546), DTS regulation (patient 7.30±5.709, control 9.58±2.545) and DTS self-sufficiency sub-scales (patient 9.08±3.06, control 12.05±2.0416) in comparison with the control group (p=0.004, p=0.008, p=0.006 respectively). When the groups were evaluated in terms...
with higher AA severity, while more severe AA symptoms will be seen in patients with higher psychiatric comorbidity will be seen in patients. It may be considered that the relationship between hair loss and psychiatric symptoms is evaluated in AA patients; it may be considered that the relationship between psychiatric comorbidities and AA is well known, the mechanism of this relationship is still unclear and this matter needs to be clarified.

There are studies reporting that the relationship between anxiety, psychological problems and AA is related to both cause and effect and this impairs the quality of life in AA patients (23, 24). In the findings of this study, we found that anxiety levels in AA patients were higher than in the control group. These mental problems seen in patients and negative repercussions on quality of life may result in psychiatric disorders.

Distress tolerance can be defined as the ability of people to cope with their negative emotional lives. Inability to tolerate distress has been associated with many mental disorders such as depression, anxiety disorders, OCD, personality disorders and eating disorders (9, 12, 25). As far as we know, this study was the first in the literature to examine DT levels in AA patients. The low DT levels we obtained in AA patients may indicate that the patients experience mental problems more frequently and that they feel they cannot cope with these problems. Significant low levels in the distress tolerance subscales can be construed as the AA patients have low level of distress tolerance (DTS-1), ability to regulate distress (DTS-2) and their self-sufficiency in this regard (DTS-3) is not sufficient as they evaluate themselves. DT level is thought to be determined as multifactorial factors such as genetic, personality and environmental factors (11). Increasing DT levels with psychotherapy methods such as cognitive behavioral therapy, which its effectiveness has previously been shown, can be a good target for AA patients (11). Many mental symptoms such as anxiety, alexithymia observed in AA patients may be associated with DT levels. However, it is difficult to make such a generalization because this study was the first study to show low distress tolerance levels in AA patients. Further study is needed in this area.

There are some limitations of this study with the findings we have obtained. First of all, the number of patients may have a negative effect on the interpretation. Secondly, the data we obtain may be influenced by factors that we cannot foresee because they include the scales that we have obtained. First of all, the number of patients may be important for the onset, course and treatment of the disease. It can also be aimed at increasing DT levels during psychotherapy. It is important for clinicians to notice psychiatric comorbidities in AA patients in terms of holistic approach to the patients. Thus, more appropriate support and treatment can be provided to the patients, both spiritually and dermatologically.

### DISCUSSION

DT levels were found low in both total score and all sub-scales in AA patients as a result of this study. Moreover, it is noted that the anxiety scores of the patient group are higher. According to these results, it is understood that the AA patients evaluated in the study had low DT faculty and high anxiety levels.

In recent studies, AA which is considered a disease associated with multiple systems; shows frequent comorbidity with rheumatoid, atopic, thyroid, metabolic and psychiatric disorders (18). The clinic of AA, which frequently causes recurrent, chronic and cosmetic problems, was held responsible for the frequent occurrence of psychiatric comorbidity (19). In addition to trauma, stressful life events and anxiety are known as the most important triggering factors of AA (20). Psychiatric disorders such as anxiety disorders, alexithymia, OCD and depression are significantly higher in AA patients than in the general population (6,21). It is thought that stress and anxiety conditions may be associated with hair loss with various mechanisms. One of them is the deterioration caused by the corticotrophiin releasing hormone (CRH) in the hair follicles due to the increased hypothalamic-pituitary-adrenal axis (HPA) triggered by stress. When the relationship between hair loss and psychiatric symptoms is evaluated in AA patients; it may be considered that higher psychiatric comorbidity will be seen in patients with higher AA severity, while more severe AA symptoms will be observed in patients with psychiatric disorders (5, 22). This view is supported by the positive effects of psychiatric therapies such as antidepressants and hypnotherapy on the clinic of the disease (19). Although the relationship between psychiatric comorbidities and AA is well known, the mechanism of this relationship is still unclear and this matter needs to be clarified.

### Table 2. Comparison of psychometric values between groups

<table>
<thead>
<tr>
<th></th>
<th>Alopecia Areata (n=36)</th>
<th>Control (n=36)</th>
<th>p*</th>
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<tbody>
<tr>
<td>DTS-Total</td>
<td>42.08±12.968</td>
<td>58.19±7.285</td>
<td>&lt;0.001**</td>
</tr>
<tr>
<td>DTS-1</td>
<td>25.69±8.667</td>
<td>36.55±5.546</td>
<td>0.004*</td>
</tr>
<tr>
<td>DTS-2</td>
<td>7.30±3.709</td>
<td>9.58±2.545</td>
<td>0.008*</td>
</tr>
<tr>
<td>DTS-3</td>
<td>9.08±3.06</td>
<td>12.05±2.0416</td>
<td>0.006*</td>
</tr>
<tr>
<td>HAD-A</td>
<td>3.27±1.11</td>
<td>7.55±2.454</td>
<td>&lt;0.001**</td>
</tr>
<tr>
<td>HAD-D</td>
<td>3.36±0.682</td>
<td>3.5±1.298</td>
<td>0.57</td>
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Table 2 = Distress Tolerance Scale, HAD-A= Hospital Anxiety and Depression Scale-Anxiety, HAD-D= Hospital Anxiety and Depression Scale-Depression

*student t test, **p<0.001, **p<0.001

When the scores of all scales and sub-scales are evaluated; no significant correlation was found between scale scores and gender, marital status, nail involvement and duration of illness.

### CONCLUSION

In this study, low DT levels were found in AA patients. DT levels in AA, which is also seen as a psychosomatic disease, may be important for the onset, course and treatment of the disease. It can also be aimed at increasing DT levels during psychotherapy. It is important for clinicians to notice psychiatric comorbidities in AA patients in terms of holistic approach to the patients. Thus, more appropriate support and treatment can be provided to the patients, both spiritually and dermatologically.
This study was presented as a oral presentation at the IDEA Congress 2019 (International Dermatology, Dermatopathology, Esthetics Academy)

Conflict of interest: The authors declare that they have no competing interest.

Financial Disclosure: There are no financial supports.

Ethical approval: This study was conducted with the approval of the Ethics Committee of Firat University. (ethics committee approval number 04/02 dated 15.02.2018)

REFERENCES