Psychometric Assessment of Alopecia Areata Patients Before and After Dermatological Treatment

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SUMMARY:
PSYCHOMETRIC ASSESSMENT OF ALOPECIA AREATA PATIENTS BEFORE AND AFTER DERMATOLOGICAL TREATMENT

Object: Alopecia Areata (AA) is reported to account for 2% of dermatology clinical visits with incidence figures ranging up to 3.5 %. The role of stressful life events in the appearance of AA is uncertain. Besides reports associating anxiety and affective disorders with the onset of AA, there has also been studies which did not confirm such an association. There have been reports documenting the efficacy of antidepressants in AA. We wanted to see whether dermatological treatment and recovery in AA patients induces any change in psychometric variables. We wanted to test whether the well-being of patients after dermatological treatment has any association to psychic factors. **Method:** Eighteen patients were recruited in the study and they were assessed with Beck Depression and Hopelessness Scales, State-Trait Anxiety Inventory, Toronto Alexithymia Scale and Brief Symptom Inventory. Patients were given steroid therapy with 3 week intervals and they all responded favorably to treatment. Three months after initial assessment patients were reassessed with the same psychometric scales. **Results:** No statistically significant change was found. **Conclussions:** Despite the limitations of the study, this result may be interpreted as the independence of dermatological recovery from psychological factors. A placebo-controlled study is necessitated to further validate the results of this study.

Key words: *alopecia areata, life events, psychiatric disorder, anxiety, depression*

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ÖZET:
ALOPESİ AREATA'LI HASTALARDA DERMATOLOJİK TEDAVİ ÖNCESİ VE SONRASINDA PSİKOMETRİK DEĞERLENDİRME

Amaç: Alopesi Areata'lı (AA) hastalar dermatoloji kliniğine başvuruların genellikle %2'sini oluştururlarsa da bazen bu rakam %3.5'a kadar tırmanabilir. Stres verici yaşam olaylarının AA oluşumundaki rolü belirsizdir. Anksiyete ve Duygulanım Bozuklukları'nı bu rahatsızlığın başlangıcıyla ilişkilendiren çalışmalar olduğu gibi bu ilişkiyi yadsıyan çalışmalar da vardır. AA'da antidepresanların yararlı olduğunu bildiren çalışmalar vardır. Bu çalışmada biz dermatolojik tedavi ve iyileşmenin psikolojik değişkenlerde bir değişiklik yaratıp yaratmadığını görmek istedik. Hastaların cildiye tedavisi sonrasındaki iyiliklerinin psişik etkenlerle ilgisini araştırmayı amaçladık. **Yöntem:** Çalışmaya 18 hasta alındı ve Beck Depresyon ve Umutsuzluk Ölçekleri, Durumluk-Sürekli Kaygı Envanteri,Kısa Semptom Envanteri ve Toronto Aleksitimi Ölçeği ile tedavi öncesi ve tedavi başlangıcından üç ay sonra değerlendirildiler. Hastalara üçer hafta arayla steroid tedavisi uygulandı ve hepsi tedaviye olumlu cevap verdi. **Bulgular:** Tedavi öncesi ve sonrası psikiyatrik ölçümler arasında istatistik olarak anlamlı bir fark bulunmadı. **Tartışma:** Çalışmanın sınırlamalarına rağmen bu sonuç, AA hastalarında dermatolojik iyileşmenin psişik etkenlerden bağımsız olduğunu düşündürebilir. Bu sonuçların geçerliliği ancak plasebo kontrollü bir çalışmayla sağlanabilecektir.

Anahtar sözcükler: *alopesi areata, yaşam olayları, psikiyatrik bozukluklar, depresyon, anksiyete.*

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INTRODUCTION

Alopecia Areata (AA) is reported to account for 2% of dermatology clinical visits with incidence figures ranging up to 3.5% (1). Its clinical presentation can vary from a single patch of nonscarring hair loss, to multiple patches or total hair loss. Patches of hair loss in AA are typically circumscribed, with smooth skin. Though the cause remains to be unknown there are reports linking this disorder to immunological changes, endocrine factors, infections, physical or psychological trauma (2). Recent evidence suggests an autoimmune process as a possible cause of the disorder, and an interrelationship with other autoimmune diseases has also been pointed out. Genetic causes have not been identified and there is a familial appearence in 10% to 20% of cases (3). The role of stressfull life events in the appearance of AA is uncertain. Besides reports associating anxiety and affective disorders with the onset of AA, there has also been studies which did not confirm such an association (4). One study examining the nature of psychopathology of children with AA, reported that children with AA had more psychiatric symptoms in general and more symptoms of anxiety or depressi-

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on compared with controls (5). In another study AA patients reported significantly more frequent life events than the control groups including uncontrolled events, socially undesired events and exits (4). There has also been researches investigating the prevalence of psychiatric disorders in AA. In a classical study 67% patients showed no abnormality, 22% showed a mild psychiatric disturbance and 11% were felt to have a severe psychiatric disturbance (6). In another study thirty-one patients with AA were administered a structured psychiatric interview (the Diagnostic Interview Schedule; DIS). Overall, 74% had one or more lifetime psychiatric diagnoses. Particularly noteworthy were the high lifetime prevalence rates of major depression (39%) and generalized anxiety disorder (39%). Patients with patchy alopecia areata were more likely to have generalized anxiety disorder (7). In a double-blind placebo-controlled study of imipramine in alopecia; a clinically significant hair growth occured in 5 of the 7 patients on imipramine whereas no response was observed in the placebo group. An improvement in psychic symptomatology was present in both groups (8). Another study conducted in Turkey investigated the efficacy of fluoxetine and psychotherapy in AA patients who did not benefit from topical dermatological treatment. In a double-blind placebo-controlled design, both fluoxetine and psychotherapy were found significantly more effective than placebo in alleviating the symptoms of AA (9). The major limitation to this study was relatively small number of cases in each group. The same study revealed that all of the patients were in the depression and anxiety range as indicated by Beck and Spielberger scales. To sum up the data on the role of psychological factors in AA, it is assumed that life events and intrapsychically generated stress can play an important role in triggering of some episodes. The comorbidity of psychiatric disorders, mainly generalized anxiety disorder, depression, and phobic states, are high. The role of treatment of concomitant psychopathological disorders is a vital one. Indeed this treatment can positively affect how the patient adapts to his/her alopecia and social setting and perhaps can even lead to a better dermatological evolution of the alopecia (10).

We evaluated the patients with AA psychometrically before and after dermatological treatment. We wanted to investigate the impact of dermatological recovery on the psychological well-being of the patients. We hypothesized that if an improvement occurs in psychometric ratings following the recovery of AA, it might be an indice of the role of psychological factors in AA.

METHOD

18 male patients were recruited in the study who consulted to the dermatology department of Çorlu Military Hospital. AA diagnosis was made by inspection and attention was given to the absence of atrophy or bacterial infection. The patients had one to eight discrete patches with surface areas ranging from 2 to 150 square cm. The patients were given information on the research and their consent was taken. We applied intralesional triamsinolone acetanide 40 mg/ml with 3 week intervals to each patient. Recovery was assessed 3 months later by inspection and hair regrowth of 90% in the previously alopecic regions was regarded as the cosmetic response. All the patients receiving steroid therapy responded favorably and displayed moderate to good cosmetic response. The psychometric scales were as follows:

1. Beck Depression Scale: It measures the somatic, emotional, cognitive and motivational signs in depression. The aim of the scale is to determine the degree of depression objectively rather than diagnosing depression. 21 category signs have four choices and every item gets scores ranging from 0-3. Global score is regarded as the sum of the scores of each item (11).

2. Beck Hopelessness Scale: It measures the negative expectancies of future in individuals. It is comprised of 20 items which are scored between 0 and 1. The total score ranges between 0 and 20. Hopelessness is regarded high when the total score is high (12).

3. Toronto Alexithymia Scale (TAS): TAS is a psychometrically well validated and reliable instrument in the assessment of alexithymia. Though it can be clustered into 4 factors, global scores will be taken into consideration in our research (13).

4. Brief Symptom Inventory: It is comprised of 53 items and has been shown to have acceptable reliability in psychiatric patients and in general populations as a global measure of psychological distress. We used the general severity index, that is the total score of BSI as an indicator of psychological distress (14).

5. State-Trait Anxiety Inventory: It is a 40 item scale which assesses both state and trait anxiety. State anxiety describes the individual's feelings at a particular time and under particular conditions, whereas trait anxiety describes the usual feelings of the individual (15).

Statistical significance was determined by Wilcoxon's Signed Rank Test, correlation by Pearson correlation coefficients and analyses were performed with SPSS for Windows.

RESULTS

All patients were male and their ages ranged between 20 to 26 with a mean of 21.3. Five of them were graduates of elementary school, 7 secondary school and 6 had finished high school. None of them revealed prior history of medical or psychiatric disease. 8 of them were married and 10 were bachelors. 8 out of 18 reported stressful life events prior to onset of AA. The patients were assessed with the psychometric scales before and three months after dermatological treatment. There was not a statistically significant change in pre and post treatment psychometric indices. The results are given on Table 1.

When the correlation analysis of pretreatment psychometric variables was made, depression was found to be associated with alexithymia, brief symptom inventory, state and trait anxiety and hopelessness. Alexithymia was associated with depression and trait anxiety whereas hopelessness was associated with depression and state anxiety. BSI total scores were related to all pcyhometric indices except trait anxiety. State anxiety was associated with all of the indices whereas trait anxiety was unrelated to alexithymia, BSI and hopelessness. The results are given on Table 2.

Table 1. Pre and post treatment mean scores± standard deviations, z and p values of psychometric scales

SCALE	Pretreatment values	Posttreatment values	z value	p value	significance
Beck Depression Inventory	19.9±10.6	16.8±14.6	-1,445	0.148	Nonsignificant (NS)
Beck Hopelessness Scale	9.7±4.7	8.5±5.8	-0,688	0.491	NS
Toronto Alexithymia Scale	11.4±3.0	11.9±2.7	-0,884	0.377	NS
State Anxiety (STAI-1)	26.5±12.6	25.3±11.0	-0,283	0.777	NS
Trait Anxiety (STAI-2)	29.9±8.8	29.5±10.4	-0,544	0.587	NS
Brief Symptom Inventory (BSI)	67.3±14.6	71.1±42.9	-0,762	0.446	NS

NS: Nonsignificant

DISCUSSION

Our study indicates that hair regrowth in dermatologically treated AA patients is not associated with their psychological well-being. This finding contrasts with many of the previous reports. There is some preliminary evidence that AA is an autoimmune disorder with a dysfunction of T suppressor lymphocytes. Indirectly, our results are not in line with previous reports indicating the efficacy of antidepressant medication in AA patients. One study did not reveal a significant association between onset of a formal psychiatric diagnosis and the onset of alopecia areata. Because 8 of the patients in our sample group reported various stressful environmental stimuli, we think that our findings should be interpreted with caution and these findings should not preclude any possible association of AA with psychological distress. It is assumed that we do not know enough about mediating mechanisms of stressful life conditions and insufficient attention is paid to protective as well as vulnerability mechanisms, which may explain the great variability in people's responses to life stressors (5). Bearing these in mind, our study shows that recovery of AA symptomatology might be independent of psychological variables. This is though indirectly, congruent with another study which revealed 0% suicidal ideation in AA patients whereas

Table 2. Correlation of Psychometric Variables

	Alexithymia	Depression	BSI	$STAI_1$	$STAI_2$	Hopelessness
Alexithymia		P<0.05 r=0,542	P<0.01 r=0,589	P<0.05 r=0,574	NS r=0,305	NS r=0,389
Depression	P<0.05 r=0,542		P<0.01 r=0,848	P<0.01 r=0,777	P<0.05 r=0,500	P<0.01 r=0,688
BSI	P<0.01 r=0,589	P<0.01 r=0,848		P<0.01 r=0,702	NS r=0,415	P<0.01 r=0,588
Stai1	P<0.05 r=0,574	P<0.01 r=0,777	P<0.01 r=0,702		P<0.05 r=0,489	P<0.01 r=0,758
Stai2	NS r=0,305	P<0.05 r=0,305	NS r=0,415	P<0.05 r=0,489		NS r=0,426
Hopelessness	NS r=0,389	P<0.01 r=0,688	P<0.01 r=0,588	P<0.01 r=0,758	NS r=0,426	

NS: Nonsignificant

5.6% suicidal ideation was reported in cystic acne patients (16). No difference in psychopathology between AA patients and controls was reported using Kellner's Symptom Questionairre in one study (17). A major methodological limitation to our study is that it is conducted in a military hospital where attendants to dermatology clinic are people who are under the stress of military milieu continuously. Hence a better methodology would be established if we compared the AA subjects with people who do not have AA but are from the same milieu. Such a design would have been more accurate in estimating the role of psychological factors in AA. One other limitation may be the duration of second assessment. Three months duration may not have been a required duration for assessing psychological well-being. The AA patients could have believed that their situation may worsen again and they may not have felt the certitude of the effectiveness of dermatologic treatment in such a short time. It is known that relapses occur in 40-50% of all cases, and the condition may be permanent in 25% of AA patients (1).

A similar study design was used in acne vulgaris patients where dermatological treatment was found to be effective on the psychological status of patients. Rubinow et al (18) evaluated the psychiatric morbidity and mood characteristics of 72 patients with cystic acne before and after isotretinoin treatment. They observed significant reductions in anxiety in cystic acne patients after successful treatment with oral isotretinoin. Another study showed that the mental status of women who were severely distressed about their acne improved significantly when they were successfully treated with isotretinoin (19). On the contrary a study by Van der Meeren et al found no consistent change in personality factors of acne patients after dermatological treatment. The patients were assessed a year later and a decrease of anxiety which did not reach a level of significance was found (20). Our study is the first one in literature, to our knowledge, which assesses the impact of dermatological recovery on the mental status of AA patients. Trait anxiety and alexithymia scores are rather stable measures and might not be expected to change over time but there did not happen any change also in the other state-dependant variables. Regarding correlation analysis the association of depression to hopelessness and anxiety or overall symptomatology is a well-established phenomena but the significant correlation between alexithymia and state anxiety and depression is confounded. This finding confirms some research data finding the same association (21). A striking finding is state anxiety of AA patients influences or is influenced by most of the other psychometric variables. The distress associated with AA and which is not alleviated by dermatological recovery is reflected in state anxiety scores which in turn may influence the other psychological indices.

Future research should include a placebo-controlled design in assessing the association of dermatological recovery with psychometric indices in AA patients. Against these limitations we believe that this study shed some light on the etiology of AA, pointing towards an immunologic or an other biological mechanism rather than the stress model.

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