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INVESTIGATIVE REPORT

Psychological Status of Patients with Alopecia Areata

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Alopecia areata is not painful or life-threatening, but its aesthetic repercussions can lead to profound changes in patients' psychological status and relationships. The psychological status and personality traits of 73 patients and 73 controls were evaluated with the Minnesota Multiphasic Personality Inventory (MMPI-2). Analysis of the MMPI-2 profile showed that scores for some scales (i.e. Depression, Anxiety, Family relationships) were higher for patients with alopecia areata than for controls. Patients with alopecia appeared to experience more depressive, hysterical and anxiety feelings, have more hypochondriac tendencies, and to be more in conflict with their social environment. In order to provide more effective management, the psychological status of patients with alopecia areata should be evaluated in dermatological settings. ***Key words: alopecia areata; psychological status; Minnesota Multiphasic Personality Inventory; MMPI-2.***

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Alopecia areata (AA) is a non-scarring, autoimmune, inflammatory disorder characterized by patchy areas of hair loss (1). It has been hypothesized that AA is an organ-specific autoimmune disease with genetic predisposition and an environmental trigger (2).

Emotional or stressful life events are often mentioned as possible causes of onset and exacerbation of the disease, with perceived stress sometimes appearing to be more important than the stressful situation itself (3, 4).

Many studies focused on personality traits describe patients with AA as having psychopathological disorders, such as depression, anxiety, social phobia, adjustment disorders and paranoid disorders, more often than the general population (5, 6), and psychiatric morbidity has been observed among patients with skin diagnoses, with a particularly high prevalence in patients with alopecia (7, 8).

Other studies, however, reveal that anxiety and depression do not play a major role in the aetiopathogenesis of the disease, and patients do not have personality traits that are qualitatively different from other patients with skin diseases (9).

Different types of alopecia may lead to different psychological problems. AA is generally more frequent and is more responsive to medical treatment than other, more severe, forms of the disease (10, 11).

Although alopecia is not painful or life-threatening, hair loss can lead to profound emotional stress and reduced self-esteem (12). These negative effects may alter patients' social interactions, daily activities and psychosocial state.

The present study evaluated the personality traits and psychological status of patients with alopecia, using the Italian version of the Minnesota Multiphasic Personality Inventory (MMPI-2), which is the most-used personality measure in clinical psychology. In addition, a psychological interview was conducted with patients in order to investigate their present psychological status and to reveal the presence of any stressful events occurring in the 6 months preceding the onset of the disease.

MATERIALS AND METHODS

A cross-sectional study was performed in the Dermatological Day-Hospital of the Istituto Dermopatico dell'Immacolata (IDI-IRCCS) in Rome, Italy, between November 2009 and October 2010. The study was approved by the ethics committee of IDI-IRCCS and all participants provided written informed consent.

Inclusion criteria for patients were: age ≥18 years; diagnosis of AA, totalis, or universalis; Italian language; no dementia or cognitive impairment, and no use of psychoactive drugs. The control group included volunteers working at IDI-IRCCS (e.g. nurses, researchers, administrators). Marital status and educational level data were collected for both groups. Duration of disease, family history, and clinical type were collected only from patients. Patients also underwent a clinical interview focused on recent stressful life-events (i.e. in the 6-month period before the onset of AA).

Both the patient group and the control group completed the pencil and paper version of the MMPI-2 for the psychological evaluation of personality traits.

The MMPI-2 is a self-administered standardized questionnaire. It evaluates personality traits and psychological disorders, and contains 567 true-false items. It has three validity scales: L (lie-rational judgements), F (frequency-low frequency of endorsement) and K (correction-response distortion and normal profile). Validity scales assess the sincerity of the answers. Ten clinical scales, denominated Hypochondriasis, Depression, Hysteria, Psychopathic deviance, Masculinity-Femininity, Paranoia, Psychasthenia, Schizophrenia, Hypomania and Social introversion provide a reliable personality profile. In addition, there are 15 content scales: Anxiety, Fears, Obsessiveness, Depression, Health concerns, Bizarre thoughts, Anger, Cynicism,

Antisocial practices, Type A behaviour, Low self-esteem, Social discomfort, Family problems, Work interference, Negative treatment indicator.

The validated Italian version of MMPI-2 (13) was used in the present study. Following the customary interpretation of MMPI-2 standardized scores, T-scores over 65 were considered to be "elevated". Norms for the MMPI-2 were developed from both normal and clinical populations.

T-scores over 65 on the "Lie" scale determine an invalid profile.

RESULTS

Baseline demographic data, including age, sex, educational level, marital status for both groups, duration and clinical type of alopecia are shown in Table SI (available from http://www.medicaljournals.se/acta/content/?doi=10.2340/00015555-1239).

The study included 73 adult patients with alopecia (40 women, 33 men; age range 18–73 years). The control group comprised 73 healthy subjects frequency-matched for sex and age, such that the sex distribution of "cases" and "controls" was the same, and the mean ages of patients and controls were 35.2 ± 9.2 and 35.1 ± 9.1 years, respectively.

Sixty-five patients and 72 controls were high-school or college graduates. Thirty-six (49.3%) patients and 43 (58.9%) controls were married, 31 (42.5%) patients and 28 (38.4%) controls were single, 5 (6.8%) patients and 2 (2.7%) controls were separated or divorced. Only one patient (1.4%) was a widower/widow.

Forty-five patients were diagnosed with AA, 19 with alopecia totalis, and 9 with alopecia universalis, and the duration of the disease was less than one year for most patients (54.8%).

The results of the MMPI-2 for the alopecia patients, compared with the control group, are summarized in Table I. Analysis of the MMPI-2 profile showed that, on average, patients and controls had a profile that was essentially within normal limits. The configuration of the validity scale showed a valid profile in both groups, indicating that their responses appeared to be realistically truthful. The Fisher's exact test showed that the scores on the scales of Depression, Hysteria, Psychopathic deviance, Psychasthenia, Schizophrenia, Anxiety, Health concerns, Bizarre thoughts and Family problems were significantly higher in patients compared with the control group.

When considering the duration of the disease (Table SII; available from http://www.medicaljournals.se/acta/content/?doi=10.2340/00015555-1239), the highest scores were observed for durations between 6 and 11 months rather than for shorter (i.e. < 6-month) or longer (i.e. ≥ 12-month) periods. In fact, even with small numbers in each subgroup, a statistically significant difference is seen for several MMPI-2 scales (those of Frequency, Hysteria, Psychasthenia, and Anger), and particularly on the Paranoia and Schizophrenia scales. Furthermore, other scales showed differences that were close to the conventional limit of statistical significance: Psychopathic deviance, Depression, Antisocial practices, and Family problems. Males had significantly higher scores than females on the Psychopathic deviance, Antisocial practices, and Family problems scales.

Eighteen patients (24.6%) reported stressful events at the onset or before the exacerbation of alopecia, 10 reported family problems, five reported work problems and three reported mourning.

DISCUSSION

The MMPI questionnaire was administered to an unselected group of patients with alopecia and to a sample of age- and sex-matched controls. On average the overall profiles of both groups were within normal limits, so that specific psychological disease levels were not reached. However, the alopecia patients had higher proportions of "above cut-off" scores (particularly on the Anxiety, Depression, and Family relationships scales) compared with the controls.

Patients scoring high on the Depression, Hysteria, Psychopathic deviance, Psychasthenia and Schizophrenia scales were often described as depressive,

Table I. *Proportion of patients with alopecia and controls above the threshold (T>65) for the different Minnesota Multiphasic Personality Inventory (MMPI) scales*

T>65 MMPI scales	Patients %	Controls %	*p*-value*
Lie	5.5	0	0.120
Frequency	6.8	0	0.058
Correction	2.7	2.7	1.000
Hypochondriasis	11.0	4.1	0.208
Depression	13.7	0	**0.001**
Hysteria	11.0	0	**0.006**
Psychopathic deviance	12.3	1.4	**0.017**
Masculinity–Femininity	4.1	0	0.245
Paranoia	8.2	1.4	0.116
Psychasthenia	11.0	0	**0.006**
Schizophrenia	8.2	0	**0.028**
Hypomania	9.6	1.4	0.063
Social introversion	6.8	0	0.058
Anxiety	13.7	0	0.001
Fears	6.8	0	0.058
Obsessiveness	2.7	2.7	1.000
Depression	12.3	0	**0.003**
Health concerns	16.4	1.4	**0.002**
Bizarre	8.2	0	**0.028**
Anger	6.8	5.5	1.000
Cynicism	1.4	1.4	1.000
Antisocial practices	4.1	2.7	1.000
Type A behaviour	1.4	1.4	1.000
Low self-esteem	1.4	0	1.000
Social discomfort	4.1	1.4	0.620
Family problems	8.2	0	0.028
Work interference	2.7	0	0.497
Negative treatment indicator	1.4	0	1.000

*Fisher's exact test. Significant values are shown in bold.

sad, tense, weak, and self-doubting. They might have pessimistic worries, show a lack of interest, involvement and initiative, and have feelings of inefficiency, somatization and indirect expressions of approval being characteristic, and may feel stressed by their general psychosocial environment.

High scores on the Health concerns scale indicate frequent, abnormal health worries, and feeling more unwell than the average general population; high scores on the Bizarre thoughts scale may include deranged and delusional thoughts; high scores on the Family scale show a likelihood of having a number of problems with their own partner, or with their children or parents.

As for the role of stress, the most stressful situations were linked to family problems, thus confirming results discussed above. The type of stress seems to be long-standing rather than linked to particular events. However, when looking at differences in the MMPI-2 between patients with higher and lower levels of stress, only slight differences were observed, and such differences reached statistical significance only on the Schizophrenia and the Depression scales.

Interestingly, the larger differences on the MMPI-2 scales were observed for the "duration of disease" variable, with higher scores for patients with an intermediate duration of disease (i.e. 6–12 months). The pattern was constant over most of the scales, and more apparent on the of Hysteria, Paranoia, Psychasthenia, Schizophrenia, and Depression scales. A possible explanation could be that by the time they reach this period patients have realized more fully what the negative implications of their disease may be, but have not yet acquired the necessary skills to cope with them.

This study defines a profile of the domains in which patients with alopecia seem to experience a higher burden. The main limitation of the study is the length of the questionnaire, and thus the time needed to complete, score, and interpret it. Despite its limitations the MMPI-2 can provide a specific diagnosis on the psychological status of patients. However, having highlighted the anxious-depressive traits of this population, this study might encourage dermatologists and clinical psychologists to use other, simpler instruments to evaluate their patients' psychological discomfort. For instance, the 12-item General Health Questionnaire has been shown to perform well in dermatological patients (14, 15), and it may be of help in identifying patients with specific needs, and thus in providing more comprehensive care for the complex situation of these patients.

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