Psychological Profile and Quality of Life of Patients with Alopecia Areata

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Keywords

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Abstract

Alopecia areata (AA) is a nonscarring alopecia with an autoimmune etiology, unpredictable course, multiple presentations, and variable psychological distress. We conducted a cross-sectional study which included 126 patients with AA. A complete medical history was documented using the Severity Alopecia Tool (SALT) to assess the severity of the disease, and the following questionnaires were applied to the participants: the Dermatology Life Quality Index (DLQI), Hospital Anxiety and Depression Scale (HADS), Plutchik Suicide Risk Scale, and the Perceived Stress Scale (PSS-14) for adults. The Child Dermatology Life Quality Index (cDLQI) and the Birleson Depression Self-Rating Scale questionnaires were applied for children. Quality of life (QoL) disturbance was detected in 77.6% of adult participants, 65.9% of them had signs of depression or anxiety, and 12.8% were at risk of committing suicide. The PSS-14 average score for adults was 24.5. QoL disturbance was detected in 76.7% of children participants, and 6.3% of them showed signs of depression with

the Birleson Depression Self-Rating Scale. We conclude that patients with AA could experience changes in their QoL and signs of depression, anxiety, and suicide risk, mainly in the adult population, during the course of the disease.

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Introduction

Alopecia areata (AA) is a nonscarring alopecia with an autoimmune etiology, unpredictable course, multiple presentations, and variable psychological distress [1]. It is a common disease in dermatology consultations with a global prevalence of 0.1–0.2% and a lifetime risk of 1.7% [2–4]. It affects both genders equally, all ages, and all races [5].

The course of the disease is unpredictable. Previous studies have shown that 34–50% of patients will present spontaneous recovery 1 year after the onset of the disease. Other studies reported that up to 80% of patients would recover after 1 year; 15–25% lose all their head and/or body hair, and less than 10% of this group will be recovered [6, 7].

Different studies have found a prevalence of psychiatric disorders in AA patients, with a range of 22–70%. The most frequent diagnoses were depression, generalized

anxiety disorder, and social phobia [8]. Although depression is frequently seen in AA patients, no increase in suicide risk has been documented [8].

The influence of mental disorders in the pathogenesis and prognosis of AA is suggested; however, the triggering role of stressful life events is yet to be ascertained [3]. A correlation between the presence of a mental disorder and the severity of the disease has not been found. However, there is a higher impact in the quality of life (QoL) of those patients with an associated mental disorder [9].

Despite the fact that AA is considered a benign disease, it highly influences the QoL of patients, affecting their functional, work, and social capacities. To our knowledge, there is a lack of information concerning the prevalence of mental disorder symptoms and QoL in AA patients in our country. The aim of this study was to determine the prevalence of mental disorder symptoms and QoL among Mexican patients with mild and severe forms of AA and to analyze if there is an association between the severity of AA and their psychological profile.

Materials and Methods

A cross-sectional study was conducted from March 1, 2017 to February 28, 2018 in the “Dr. Ladislao de la Pascua” Dermatology Center. The Institutional Review Board and Ethics Committee approved the protocol before enrollment, and all participants signed an informed consent form. We recruited participants, both children and adults, with a clinical diagnosis of AA and clinical signs of active disease. After completing their medical history, a dermatologist assessed the Severity Alopecia Tool (SALT) to determine the severity of the participants’ disease. The SALT scale considers the percentage of affected hairy skin and divides it into 6 subclasses (S_0 0%, S_1 <25%, S_2 25–49%, S_3 50–74%, S_4 75–99%, and S_5 100%). After taking clinical and dermoscopy images of the patients’ scalp, we asked them to complete the following questionnaires: the Dermatology Life Quality Index (DLQI), Hospital Anxiety and Depression Scale (HADS), Plutchik Suicide Risk Scale, Perceived Stress Scale (PSS-14) for adults; and the Child Dermatology Life Quality Index (cDLQI) and Birlson Depression Self-Rating Scale for children. We used the Spanish adapted versions of all questionnaires previously described.

DLQI and cDLQI are questionnaires specifically designed for patients with skin diseases [10]. They measure how much the skin disease affects the daily life of the patients in a 7-day period. Both have 10 questions and the score is calculated by summing the score of each question resulting in a maximum of 30 and a minimum of 0. The higher the score the more QoL is impaired.

HADS is a tool that identifies depressive and anxiety disorders in patients who are physically ill. It differentiates symptoms of pain, sadness, or mourning that can be present in chronic diseases [11]. HADS has 14 items, 7 that assess depressive symptoms and 7 anxiety symptoms. The scale has been used to evaluate patients with skin diseases, including acne, psoriasis, scarring and non-scarring alopecia, among others [12].

Table 1. DLQI and cDLQI scores according to the effect on patients’ life

Meaning of the score	DLQI, % ($n = 94$)	cDLQI, % ($n = 32$)
No effect at all	22.4	23.3
Small effect	32.9	56.7
Moderate effect	23.5	13.3
Very large effect	20.0	6.7
Extremely large effect	1.2	0.0

DLQI, Dermatology Life Quality Index; cDLQI, Children Dermatology Life Quality Index.

The Birlson Depression Self-Rating Scale was designed to quantify the severity of depression symptoms in children and adolescents. It has also been used to follow up the treatment and supervise the response to it [13].

PSS-14 is focused on determining if patients consider their daily situations as stressful and if they generate anxiety. It can also be used to determine if the stress perceived by the individual could be considered as a risk factor or etiological factor for some diseases. The survey has 14 items, the lowest score is 8 and the highest is 51. The highest the score, the highest the stress the patient feels in his/her daily life. It is not a diagnosis instrument, so it does not have a cut point. The obtained score must be compared to the score of a healthy population to whom the survey is also applied [14, 15]. In a population of psychology students in Mexico, the mean was 21.9 (SD 7.03) [15].

We used the Plutchik Suicide Risk Scale, which is a self-assessment instrument with 15 items that measure previous suicidal trends, suicidal ideation, and depression. The score ranges from 0 to 15. From a score of 6, the patient is considered to have similar characteristics to a prototype with suicide risk.

For statistical analysis, we used SPSS version 19. Categorical variables were reported as frequencies and percentages, while continuous variables were described using means and standard deviations. To compare the results of all psychological scales and QoL with the severity of AA, we used Student’s *t* test for normally distributed data and Mann-Whitney U test for data with skewed distribution.

Results

A total of 126 patients (56% females and 41% males) participated in this cross-sectional study during the 1-year period of enrollment. Ninety-four (74.6%) of the participants were adults and 32 (25.4%) children. The youngest participant was 3 years old and the oldest 78 years. The mean age of AA onset was 25 years (SD 5.3 years), and the mean duration of the disease was 3.6 years (SD 6.4 years).

Table 2. Psychological distress and QoL according to the SALT score

SALT score	Psychological distress			QoL	
	adults ^a (<i>n</i> = 62), %	children ^b (<i>n</i> = 2), %	risk of suicide ^c (<i>n</i> = 2), %	DLQI (mean ± SD)	cDLQI (mean ± SD)
<25%	54 (65.8)	2 (8.7)	10 (12.2)	5.61 (5.04)	4.36 (3.96)
25–49%	1 (50)	0	0	9 (2.83)	6 (4.97)
50–74%	3 (75)	0	1 (25)	8.75 (4.35)	7
75–99%	1 (100)	0	1 (100)	13	–
100%	3 (100)	0	0	11 (3.46)	3.33 (2.52)

Percentages were calculated considering the total number classified with the SALT score. Mean and SD were not calculated when the group had only one participant. ^a Symptoms of depression or anxiety according to the HADS. ^b Symptoms of depression according to the Birleson Depression Self Rating Scale. ^c According to the Plutchik Suicide Risk Scale.

Most of the patients had patchy AA (92.9%), 3.2% total AA, 1.6% ophiasis, and 1.6% universal AA. Thirty-nine out of 126 (31%) patients had multiple episodes of AA. The following comorbidities were observed: dyslipidemia in 9.4%, obesity in 7.9%, atopic dermatitis in 8%, allergic asthma or rhinitis in 7.9%, and vitiligo in 4.7%. Only 13.4% of them had nail changes related to AA. Participants' classification according to SALT (severity of the disease) was: 85.6% of patients had <25% of scalp affected, 4.8% from 25 to 49%, 4% from 50 to 74%, 0.8% from 75 to 99%, and 4.8% of patients had 100% of scalp affected.

The mean DLQI score in adults was 6.1 points (SD 5.1 points), while the mean cDLQI score in children was 2.25 points (SD 0.96 points). A classification of participants according to the DLQI and cDLQI scores is shown in Table 1.

According to HADS scores, 46.8% of adults had symptoms that suggest a clinical problem, 19.1% were classified as borderline cases of depression or anxiety, and 34.1% did not show any signs of depression or anxiety. Excluding patients with other chronic diseases, 71.2% had some degree of depression or anxiety according to HADS results. Patients with at least one symptom of depression or anxiety were referred to the psychiatrist, and 60% of them started pharmacological treatment. The scores obtained with the Plutchik Suicide Risk Scale suggested that 12.8% of the interviewed patients were at risk of committing suicide. All of them were sent to a psychiatric facility for other assessments. The mean PSS-14 score in our adult population was 24.5 (SD 8.1), higher than the cutoff for our population, which is 21.9 (SD 7.03).

In our children participants, only 6.3% reported symptoms of depression according to the Birleson Depression Self Rating Scale. In adults, DLQI scores were higher in

women than in men, without statistical difference (5.3 vs. 4.6 points, respectively, $p = 0.942$). Opposite results were obtained for children, boys had higher scores than girls, without a statistical difference (2.5 vs. 2 points, respectively, $p = 0.136$).

The total DLQI and cDLQI scores did not differ from each other according to the following variables: family history, education level, occupation status, SALT score, and duration of the disease. When we analyzed if the SALT score was associated to the results of the depression and anxiety scales, in both adults and children, we did not find any statistical differences among the subgroups. We obtained the same results for the stress and suicide risk scales. However, when we compared the results of cDQLI with the results of the Birleson scale, we found that only two of the children that reported an effect of AA on their QoL showed signs of depression, the rest of the children with impaired QoL did not refer symptoms of depression ($\chi^2 13.4$, $p = 0.004$). We observed the contrary in AA adults, where patients who reported moderate, very large, and extremely large effects of AA on their lives showed more symptoms of depression and anxiety ($\chi^2 18.7$, $p = 0.017$). Data on psychological distress and QoL according to SALT score are shown in Table 2.

Discussion/Conclusion

Our study demonstrated that 76.7% of children with AA had an impairment in their QoL due to the disease, and 77.6% of adults reported the same impairment. Despite previous studies on QoL in AA patients have been published, none of them recruited Mexican partici-

pants and few of them explored the symptoms of psychiatric disorders with validated screening tools. According to the screening tools we applied, almost three quarters of our adult AA patients were referred to the psychiatrist for the diagnosis of depression or anxiety. In contrast, only 6.3% of AA children had symptoms that suggest a clinical depression.

Our study population is clinically similar to other samples reported in previous studies, except for mean age. The average age of our patients is 25 years, younger than what is generally reported, which ranges from 32.63 (SD 17.4 years) to 35.54 years (SD 19.28 years), due to the fact that we recruited children and adults with AA [16, 17]. The most frequent subtype of AA in our patients was patchy AA, which was observed in 92% of the cases, similar to previous epidemiological studies, where patchy AA represents up to 94.7% of the cases. Our alopecia totalis/universalis patient ratio was 4.8%, comparable to what is reported worldwide (alopecia totalis 2.05% and alopecia universalis 3.25%) [17].

A total of 76% of AA children reported an impairment in their QoL, similar to the 78.2% identified in other studies that used the cDLQI. They reported feeling shame about the loss of hair [12]. Conversely, 77.6% of AA adults reported an impairment in their QoL, similar to the 77.1% published in previous studies that used DLQI [18]. The mean DLQI score in our patients was 6.1, similar to the value of 6.3 obtained in a meta-analysis of 1,330 patients. The mean DLQI score of AA patients is less than the one reported in the following diseases: psoriasis (10.5), atopic dermatitis (11.2), and pemphigus (12.0) [19].

Three quarters of our adults with AA (71.2%) had some degree of depression or anxiety according to the HADS scale, and 60% of them initiated pharmacological treatment due to their symptoms. These results agree with those reported by Baghestani et al. [20] who found that in a cohort of 68 AA patients, 47% of the patients showed anxiety signs and 56% of the patients experienced some degree of depression. They concluded that AA patients have a 5 times greater risk of developing depression than their healthy counterparts do. The prevalence of depression and anxiety is higher in women because they could be pressured by the beauty standards expected for their gender. However, Karia et al. [9] reported a prevalence of depression of 18% in 50 AA patients and a prevalence of anxiety of 4%. These discrepancies in the prevalence of psychiatric disorders could be attributed to the characteristics of the patients' personality and to the different social background of

populations. In fact, Kim et al. [21] found a connection between negative personality characteristics (anxiety, hysteria, and antisocial behavior) and AA that should be extensively studied.

Opposite to the adult population, in our study, only 6.3% of children showed an alteration in the applied test. The prevalence of depression and anxiety in children with AA is increased compared to healthy controls [22]. AA in children has an adverse psychological impact because 40% of adolescents report bullying in school, 48% of children say they are ashamed of the condition of their skin, and at least 33% miss school activities due to the disease [23].

The stress perceived by the individual according to the PSS-14 was slightly higher than in the reference population (24.58 [SD 8.1] vs. 21.9 [SD 7.03]) [15]. Therefore, we can conclude that the stress of AA patients does not vary much from the stress of the regular population.

In our study, 12.8% of patients were at risk of committing suicide. A study published previously reported that no AA patient showed suicidal ideation [8]; however, there is a report of 4 cases of patients recently diagnosed with AA who committed suicide [24]. Suicide risk is the result of a cascade of events in the life of an individual, and we cannot conclude that AA as itself confers this risk. Nevertheless, suicide risk should be assessed in AA with poor response to treatment in the context of patients showing signs of depression.

Historically speaking, psychiatric comorbidities have been highly associated to AA. Some studies have found these comorbidities in up to 25% of patients [25]; although other studies failed to demonstrate a strong association between AA and psychiatric diseases. However, we consider that AA should be screened for the diagnosis of depression and anxiety during the course of the disease. In addition, an important number of adult patients are at risk of committing suicide, so we recommend patients to be referred to the corresponding professional if we identify negative affective symptoms.

We found no statistical correlation between severity (measured by SALT score) and QoL (measured by DLQI and cDLQI) in our study due to the small sample size and reduced number of participants with severe AA. Although patients with a higher SALT score had also higher DLQI scores, no statistically significant difference was found. In addition, the characteristics of the patients' personality could influence how the patients cope with the disease.

This study is useful because it highlights the connection between AA and a deterioration in patients' QoL mainly in adults. A great number of adult patients show depression and anxiety symptoms that could be related to negative self-perception symptoms; however, we cannot dismiss a personality factor. Since QoL impairment in adults was related to the presence of signs and symptoms of anxiety and depression, we recommend to screen for these mental disorders in AA patients.

The main limitation of this study is the sample size, even though it is the largest AA study conducted in a Mexican population. However, the demographic characteristics of the studied population are similar to the ones from other larger cohorts studied at a global level; thus, we can conclude that the sample is statistically representative. In addition, another finding that could have interfered with our results is the fact that the majority of patients (69%) had only one episode of AA, while 31% of them had multiple episodes, since it is known that the chronic course of the disease tends to be more associated with psychological disturbances and impairment of QoL. Nowadays, our study patients are being followed in a cohort study to determine if their QoL and psychiatric symptoms change during the course of the disease due to their response to treatments, and if the psychiatric symptoms we found are really associated to AA.

One of the strengths of this study is that we used different validated screening scales to screen for depression, anxiety, suicide risk, and stress. The role of the dermatologist when addressing these patients is to detect mental disorders and refer patients to the corresponding specialist; therefore, it is useful to employ these scales in our daily practice.

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Statement of Ethics

The Institutional Review Board and the Ethics Committee of the Centro Dermatológico “Dr. Ladislao de la Pascua” approved the study protocol. All participants gave their written informed consent to participate in the study. For children, both parents gave and signed the informed consent to participate.

Disclosure Statement

The authors have no conflicts of interest to declare.

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Author Contributions

All authors contributed substantially to the design of the protocol, the acquisition, analysis, and interpretation of the data. All authors reviewed the content of the manuscript and approved the final version. Martha Alejandra Morales-Sánchez is the corresponding author of the study, she planned and conducted the study; and she was the thesis advisor of Rosalía del Carmen Vélez-Muñoz to obtain her dermatologist degree.

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