

Quality of life assessment in patients with alopecia areata and androgenetic alopecia in the People's Republic of China

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Introduction: In medical terms, alopecia is considered a relatively mild dermatological condition that nevertheless is a serious condition, but it causes major depression in many sufferers. Alopecia areata (AA) and androgenetic alopecia (AGA) are the main types of hair loss. This study assessed the quality of life (QoL) of Chinese patients with AA and AGA using the Dermatology Life Quality Index (DLQI) questionnaire.

Methods: A total of 178 AA and AGA patients were enrolled in this study, and DLQI was used to evaluate the QoL of the patients. The DLQI used 10 items regarding symptoms and feelings, daily activities, leisure, work and school, personal relationships, and treatment as dimensions of life. Each was scored on a 0–3 scale. The total DLQI score equaled 0–30; higher scores showed greater impact on QoL.

Results: The DLQI scores of the 178 patients ranged from 0 to 28, with a mean score of 6.3. Higher DLQI scores were reported by younger patients ($P<0.05$) and by those who had hair loss for a duration of >12 months ($P<0.05$). The DLQI score of AA patients was significantly higher than that of AGA patients ($P<0.05$). QoL was not affected by gender, marital status, educational level, past history of alopecia, family history of alopecia, or severity of alopecia.

Conclusion: AA and AGA moderately affected the QoL of the patients. A higher DLQI score was significantly associated with younger age, hair loss for a duration of >12 months, and AA. Both AA and AGA moderately affected the QoL of the patients not only in physiological aspects but also in their emotional and social aspects. The bio-psycho-social aspects of disease need to be addressed in patients with AA and AGA, even though these conditions are not life-threatening.

Keywords: alopecia, quality of life, People's Republic of China

Introduction

Although alopecia is regarded by physicians as a relatively mild skin disease, many patients with alopecia consider their hair loss to be a serious problem leading to distress in their everyday life and negatively affecting their activities of daily living. Because hair is a very important component of self-image, patients with alopecia may develop a distorted body image and get negative feelings.¹ Reid et al reported that some patients regard their alopecia as a more serious problem than do their dermatologists.² Therefore, it is important to understand the impact of alopecia on the quality of life (QoL) of patients.

It has been reported that the QoL of patients with hair loss was lower than that of patients with cardiovascular disease, diabetes, and cancer.³ In recent years, the

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importance of QoL has been widely accepted to assess the therapeutic effects in patients with hair loss.⁴ Some studies have concluded that physicians and patients use different criteria to assess the severity of alopecia.⁵ Physicians use the severity of the signs and symptoms of disease to assess alopecia, while patients focus on impaired activities and their QoL. Therefore, it is very important to understand the impact of alopecia on the QoL of patients while assessing its severity. Different instruments and questionnaires are used to assess the QoL of patients with alopecia. In 1994, Finlay and Khan⁶ developed the Dermatology Life Quality Index (DLQI) questionnaire to assess the QoL of patients with different skin diseases, and it has been widely used to assess alopecic severity in many countries.^{7,8} DLQI is a compact questionnaire, consisting of 10 questions addressing symptoms and feelings, daily activities, leisure, work and school, personal relationships, and treatment.⁶ The patients' scores on the DLQI range from 0 to 30, with higher scores indicating worse QOL. Given that alopecia areata (AA) and androgenetic alopecia (AGA) are the main types of hair loss in People's Republic of China, the purpose of this study was to assess the QoL of patients with AA and AGA in Chinese patients using DLQI.

Patients and methods

Patients

A total of 178 AA and AGA patients aged >18 years were enrolled in this 2-year study at Jinan Central Hospital Affiliated to Shandong University and Qilu Hospital, Jinan, People's Republic of China, from January 1, 2013, to December 31, 2015. All the patients were diagnosed with AA and AGA by two independent dermatologists. They

included patients who visited a hospital for the treatment of alopecia and others who visited a hospital for the treatment of different diseases and showed clinical hair loss. All the patients were otherwise mentally and physically healthy and gave written informed consent to take part in the study. This study was approved by the Medical Ethics Committee for Human Studies of Shandong University.

Methods

The DLQI questionnaire consisted of 10 questions regarding symptoms and feelings, daily activities, leisure, work and school, personal relationships, and treatment as dimensions of life. Each item was scored on a scale of 0–3 points. Scores were added to yield a total DLQI of 0–30 points; higher scores indicated greater impact on the patient's QoL (Table 1).

Statistical analysis

The results were analyzed using Student's *t*-test. Differences were considered significant if *P*-value was <0.05. The data were processed using an SPSS software package (SPSS 13.0 Inc., Chicago, IL, USA).

Results

DLQI scores

For the 178 patients with AA and AGA in this study, the DLQI scores ranged from 0 to 28, with a mean score of 6.3 ± 6.3 . Topics in questions 2 (embarrassment), 5 (social or leisure), and 7 (work or study) had the most impact on patients with hair loss (Figure 1). The lowest impacts were noted on questions 6 (sports), 8 (relationships), and 1 (symptoms) (Figures 2–5).

Table 1 The Dermatology Life Quality Index

The aim of this questionnaire is to measure how much your skin problem has affected your life over the last week.

Please tick one box for each question.

- Q1. Over the last week, how itchy, sore, painful or stinging has your skin been? (Symptoms)
- Q2. Over the last week, how embarrassed or self conscious have you been because of your skin? (Embarrassment)
- Q3. Over the last week, how much has your skin interfered with you going shopping or looking after your home or garden? (Shopping, daily activities)
- Q4. Over the last week, how much has your skin influenced the clothes you wear? (Clothes)
- Q5. Over the last week, how much has your skin affected any social or leisure activities? (Social, leisure)
- Q6. Over the last week, how much has your skin made it difficult for you to do any sport? (Sport)
- Q7. Over the last week, has your skin prevented you from working or studying? If "no" over the last week, how much has your skin been a problem at work or studying? (Work or study)
- Q8. Over the last week, how much has your skin created problems with your partner or any of your close friends or relatives? (Relationships)
- Q9. Over the last week, how much has your skin caused any sexual difficulties? (Sexual difficulties)
- Q10. Over the last week, how much of a problem has the treatment for your skin been, for example by making your home messy, or by taking up time? (Treatment)

Notes: Each question is answered "Very much" (score 3), "A lot" (score 2), "A little" (score 1), or "Not at all" (score 0). The first part of question 7 has the choices "Yes" (score 3), "No", or "Not relevant" (score 0). The maximum score (indicating highest possible impairment of quality of life) is 30 and the minimum 0. Reproduced from Finlay AY, Khan GK. Dermatology Life Quality Index (DLQI) – a simple practical measure for routine clinical use. *Clin Exp Dermatol.* 1994;19(3):210–216. © Dermatology Life Quality Index. AY Finlay, GK Khan, April 1992.

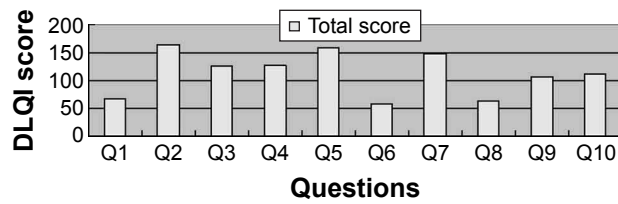


Figure 1 Total DLQI scores for each of the 10 questions for patients with AA and AGA.

Abbreviations: DLQI, Dermatology Life Quality Index; AA, alopecia areata; AGA, androgenetic alopecia.

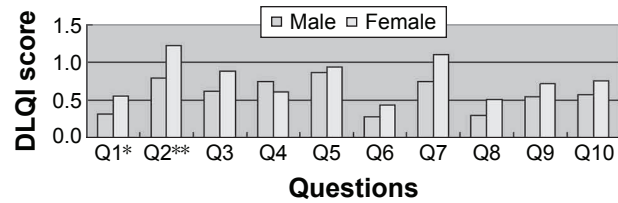


Figure 2 The mean DLQI scores for each of the 10 questions for males and females are shown (* $P < 0.05$, ** $P < 0.01$).

Abbreviation: DLQI, Dermatology Life Quality Index.

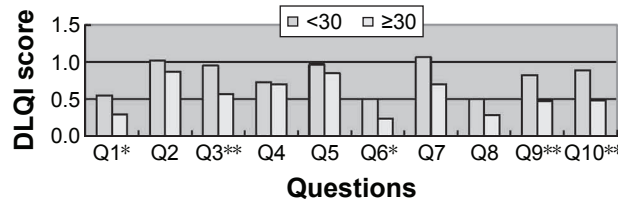


Figure 3 The mean DLQI scores for each of the 10 questions for patients aged <30 and ≥30 years are shown (* $P < 0.05$, ** $P < 0.01$).

Abbreviation: DLQI, Dermatology Life Quality Index.

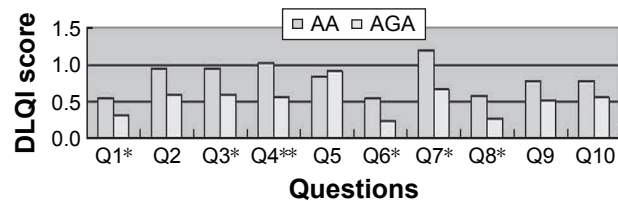


Figure 4 The mean DLQI scores for each of the 10 questions for patients with AA and AGA are shown (* $P < 0.05$, ** $P < 0.01$).

Abbreviations: DLQI, Dermatology Life Quality Index; AA, alopecia areata; AGA, androgenetic alopecia.

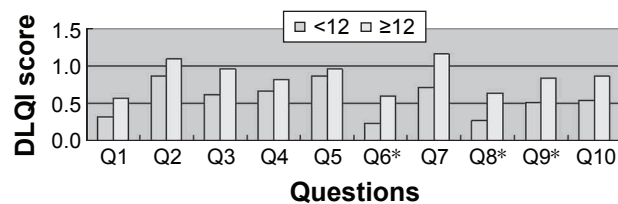


Figure 5 The mean DLQI scores for each of the 10 questions for duration of <12 and ≥12 months are shown (* $P < 0.05$).

Abbreviation: DLQI, Dermatology Life Quality Index.

Table 2 Correlation between clinical characteristics of patients and DLQI score

Clinical characteristics	Case	sample mean ± SD	DLQI score	
			Student's t-test	P-value
Gender			1.731	0.087
Male	125	5.7760±5.8283		
Female	53	7.6415±6.9700		
Age (years)			2.522	0.013
<30	59	7.9839±6.9795		
≥30	116	5.54483±5.3558		
Marital status			0.533	0.594
Couple	92	6.5652±6.3129		
Single	86	6.0814±5.7481		
Educational level			0.987	0.325
Low (occupational school or less)	80	5.8375±5.5243		
High (more than college education)	98	6.7347±6.4209		
Duration of hair loss (months)			2.255	0.028
<12	134	5.6269±5.1499		
≥12	44	8.4773±7.8488		
Diagnosis			2.2375	0.020
AGA	123	5.5122±5.0316		
AA	55	8.1636±7.5640		
Past history of AA			1.465	0.148
Primary	134	5.8806±5.3495		
Recurrent	44	7.7045±7.6693		
Family history of AA			0.422	0.674
Positive	139	6.2302±6.0161		
Negative	39	6.6923±6.1651		
Severity of alopecia			1.819	0.071
Severe	40	7.8500±6.7351		
Mild	138	5.8913±5.7676		

Abbreviations: DLQI, Dermatology Life Quality Index; AA, alopecia areata; AGA, androgenetic alopecia.

Correlation between clinical characteristics of patients and DLQI score

As shown in Table 2, a higher DLQI score was significantly correlated with younger age of the alopecia patients ($P < 0.05$) and hair loss for a duration of >12 months ($P < 0.05$). The DLQI score of AA patients was significantly higher than that of AGA patients ($P < 0.05$). However, QoL was not affected by gender, marital status, educational level, past history of alopecia, family history of alopecia, or severity of alopecia ($P > 0.05$).

Discussion

In our study, the mean score of DLQI was 6.3±6.3, and this is taken to represent a moderate limitation of QoL. A study by Williamson et al⁹ that included 70 patients with alopecia

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showed that the mean score of DLQI was 8.3 ± 5.6 . They found that the DLQI scores of patients with alopecia were similar to those of patients with severe psoriasis.⁹ Cartwright et al studied 300 patients with severe AA and found that the mean DLQI score was 13.5.¹⁰ Qi et al studied 698 Chinese patients with AA and found that the mean DLQI score was 5.8 ± 5.6 .¹¹ These difference in findings might be due to the differences in the type of alopecia patients selected and in the degrees of severity of these alopecia patients. Our study showed that AA and AGA moderately affected the QoL, including feelings of loss of self-confidence and low self-esteem. In our study, the DLQI score of AA patients was 8.2 ± 7.6 , which was significantly higher than that of the AGA patients. Stressful life events can be triggering factors for AA patients and they may find themselves in a vicious circle of anxiety.¹² In the questionnaire used in our study, items 1 and 9 referred to the physiological effects, while the remaining (2–10) referred to emotional and social effects of the disease. Our study showed that AA and AGA affected not only the physiological aspects of the patients' lives but also their emotional and social well-being.

In this study, we found that continued changes in physiological appearance made QoL worse over time. We also found that regardless of the severity of alopecia, the mean score of younger patients was higher than that of the older ones. It appeared that the impact of alopecia on their appearance made the QoL of younger patients who were applying for a job, seeking a partner, or participating in other social activities worse. Although there were few local symptoms, presence of an itchy, sore, and painful scalp was associated with a significant increase in DLQI score.

Whether the QoL of female patients is more severely affected than that of males remains controversial. Hair has different symbolic meanings for people across cultures, affecting religious, social, and/or political beliefs in different people.¹³ Hair quality and appearance can be an indicator of attractiveness and sexuality for many people, and visible hair loss can have a major negative impact, particularly in some women, on self-perceptions of feminine characteristics and attractiveness.¹⁴ This appears to be a result of the emphasis and importance of physical appearance and body image in social settings.¹⁵ Some studies show that women with hair loss experience increased self-consciousness, feelings of unattractiveness, social withdrawal, emotional stress, and worry compared with women without hair loss or men with hair loss.¹⁶ Recently, however, a number of studies have also verified the psychosocial difficulties experienced by men with hair loss. These studies concluded that men with visible hair

loss are generally seen by others as being significantly older, less physically and socially attractive, weaker, duller, and less potent than their peers.¹ In our study, the mean DLQI scores in female patients were slightly but not significantly higher than those in male patients, and overall QoL in the male and female patients was similar.

The present study had several limitations. First, all the patients in our study were recruited in a dermatology clinic in a tertiary hospital, and selection bias may, therefore, have affected the results. Also, the study sample was relatively small compared to the total population of alopecia patients in People's Republic of China.

Conclusion

Both AA and AGA moderately affected the QoL of our patients. A higher DLQI score was significantly associated with younger age, hair loss for a duration of more >12 months, and AA. We found that AA and AGA moderately affected the QoL of the patients not only with respect to basic physiological aspects of hair loss but also with respect to the emotional and social aspects of their lives. The medical system needs to adequately address the problems of daily living and bio-psycho-social concerns of these patients, even though their visible hair loss is not a life-threatening condition.

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Disclosure

The authors report no conflicts of interest in this work.

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