

Quality of Life in Patients with Androgenetic Alopecia

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Abstract

Objective: To assess the impact of androgenetic alopecia on quality of life in our patients using DLQI.

Design: Observational study.

Place and Duration of Study: The study was carried out in Outpatient Department of Dermatology, KEMU/ Mayo Hospital, Lahore, for six months from (15-04-2010 to 14-10-2010).

Material and Methods: A total of 125 patients suffering from androgenetic alopecia, of any severity, with age 18 years or above, belonging to either sex, who themselves were able to understand and complete the DLQI questionnaire in English or Urdu version, were enrolled in the study. Patients were asked to indicate how their life has been affected over the preceding week. The data was analyzed after compiling the

results. The higher the DLQI score, the poorer is the QoL.

Results: The mean DLQI score in 125 patients (53 males and 72 females) was 12.80 ± 3.76 . The findings indicate several areas in which androgenetic alopecia had an impact on individual's QoL, particularly in relation to symptoms and feelings and personal relationships. Women reported poorer QoL compared to men. Mean DLQI score was 11.87 ± 3.35 in males and 13.49 ± 3.91 in females.

Conclusion: It was noted that in patients of androgenetic alopecia, there were significant psychosocial limitations resulting from reactions of close relatives and friends.

Keywords: Androgenetic alopecia, Quality of life, DLQI.

Introduction

Androgenetic alopecia (AGA) is a hereditary androgen-dependent disorder.¹ It is the most common type of baldness and is characterized by a defined pattern of hair loss from the top of scalp and regression of the frontal hair line.² It usually begins between the age of 12 and 40 years in both sexes.³ The etiology of androgenetic alopecia is multi-factorial.⁴ Hair play an important role in determining self image, social perceptions and psycho-social functioning.⁵ Male pattern hair loss (MPHL) can have a serious psychological impact as seen in many studies.⁶

Quality of life (QoL) is defined as capacity to perform the daily activities appropriate to person's age and his / her major role in the society.⁷ The role could

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be paid employment, schooling, house work or self care. Several indices are available in the form of questionnaires to measure the extent of disability caused by skin diseases.⁷ In order to assess the impact of androgenetic alopecia on QOL in our society, a ten-item DLQI was used.⁸ It is a valid, simple and practical questionnaire designed to measure the disability caused by various skin conditions.⁹

There has been no research, in our community, addressing the patients' belief about this disorder and how they relate it to quality of life. So, the present study was planned at the Dermatology Department, King Edward Medical University / Mayo Hospital, Lahore, to assess the quality of life in patients with androgenetic alopecia.

Material and Methods

It was a questionnaire – based study. The study protocol was approved by the Institutional Review Board Committee (IRBC). The study was carried out at the Department of Dermatology, King Edward Medical University / Mayo Hospital, Lahore during the period from April, 2010 to September, 2010. A full medical history and clinical assessment of alopecia with informed consent was taken. One hundred and twenty five patients of either sex but of the age 18 years or above, with clinically diagnosed androgenetic alopecia (of all severities i.e. mild, moderate and severe), who could understand and complete the questionnaire in English or Urdu (National language in Pakistan) version, were enrolled.

Those patients were excluded who were suffering from systemic causes of alopecia on history and previous records e.g. diabetes (fasting blood sugar > 120), hepatitis, leukemias, lymphomas, other malignancies etc. Patients diagnosed of having other local (scalp) dermatoses on clinical examination e.g. tinea capitis, folliculitis decalvans, lichen planopilaris, discoid and systemic lupus erythematosus, telogen effluvium, trichotillomania etc, were also excluded from the study. Patients with history of taking drugs that cause hair loss e.g. chemotherapeutic agents were also omitted from the study.

All the patients were instructed to complete a DLQI questionnaire (Table 1) that included 10 questions covering six different domains of QoL e.g. symptoms and feelings (Q_{1,2}), daily activities (Q_{3,4}), leisure activities (Q_{5,6}), work and schooling (Q₇), personal relationships (Q_{8,9}) and treatment of disease (Q₁₀). The

score was given on a scale from 0 to 3, for each of 10 questions, how they felt their lives have been affected by the disease over the preceding week. The total score ranged from 0 to 30. The higher the score, the poorer was the quality of life.

Statistical Analysis

The data was entered into SPSS version 11 for analysis. Study variables included age, sex, and DLQI score. The qualitative data was presented in form of frequency and percentages, like gender, marital status, education status and severity of disease. Mean \pm S.D was used for quantitative data like age and mean DLQI scores. Data was stratified for severity of androgenetic alopecia (Mild = Hamilton – Norwood class 2, 3 and Ludwig class I, Moderate = Hamilton – Norwood class 4, 5 and Ludwig class II, Severe = Hamilton – Norwood class 6, 7 and Ludwig class III and advanced) to address effect modifier. ANOVA was applied to compare the Mean DLQI in age groups and severity of disease. Student's t-test was used for comparison of mean DLQI scores with respect to sex, marital status and education status. For ANOVA and t-test p-value of ≤ 0.05 was considered significant.

Results

A total of 125 patients, clinically diagnosed as androgenetic alopecia, were studied. Mean age of the patients was 29.01 ± 8.62 years. There were 55 patients in the age range of 18 – 25 years, 44 between 26 – 35 years, 18 in the range of 36-45 years and 8 patients between 46 – 55 years. As regards the gender, there were 53 (42.4%) male and 72 (57.6%) female patients. Fifty seven (45.6%) patients were married and 68 (54.4%) unmarried. Most of the patients were students (38.4%) followed by house wives (28.0%), office workers (16.0%), laborers (14.4%) and doctors (3.2%). Amongst them, educated patients were 60.8% and uneducated 39.2%.

According to severity, there were 50 (40.0%) patients with mild disease, 45 (36.0%) with moderate disease and 30 (24.0%) patients with severe disease. The duration of disease was < 2 years in 34 (27.2%), between 2 – 4 years in 65 (52.0%) and > 4 years in 26 (20.8%) patients. Mean DLQI score of total sample size was 12.80 ± 3.76 . Comparing the mean DLQI scores according to sex, it was found that females had a higher DLQI score (13.49 ± 3.91) than males (11.87

± 3.35), with p-value = 0.017 (This comparison was done by applying student's t-test).

While comparing mean DLQI scores between different age groups through ANOVA, it was relieved that there was no significant difference in mean DLQI scores with respect to different age groups., p-value = 0.634.

As regards the comparison between mean DLQI scores with respect to severity, patients with mild disease had mean DLQI scores of 10.74 ± 3.06 while those with moderate and severe disease had the scores of 13.44 ± 3.47 and 15.27 ± 3.46 respectively, indicating that high DLQI scores were seen with more severe disease. The student's t-test was used for comparing the mean DLQI scores of patients with different severity of disease. A p value of <0.01 was found between mild and moderate and mild and severe disease, whereas a p value of 0.029 was observed between moderate and severe disease. Therefore, the difference was statisti-

cally significant between mild, moderate and severe disease as p values were less than 0.05 (Table 2).

Mean DLQI score was higher in patients who were having the disease for > 4 years (14.12 ± 3.99) as compared to those where the disease was present for last 2 – 4 years (13.58 ± 3.51) or in those who had AGA for < 2 years (10.29 ± 2.83). Using ANOVA, the mean difference in DLQI was significant in relation to the duration of disease, p-value 0.0000. Singles had a higher mean DLQI score (13.53 ± 3.53) as compared to married (11.93 ± 3.86), p-value = 0.017 (using t-test). Patients who were educated had higher mean DLQI scores (13.66 ± 3.63) as compared to uneducated patients (11.47 ± 3.59), p-value = 0.001 (using t-test). Mean DLQI scores for each question demonstrate that maximum score was found for question No. 2 (2.64) which is related to symptoms and feelings followed by question No. 8 (2.19) which is about personal relationships (Figure 1).

Table 1: Dermatology Life Quality Index.

1. Over the last week, how itchy, sore, painful or stinging has your skin been?	very much <input type="checkbox"/>	a lot <input type="checkbox"/>
	a little <input type="checkbox"/>	not at all <input type="checkbox"/>
2. Over the last week, how embarrassed or self conscious have you been because of your skin?		
3. Over the last week, how much has your skin interfered with you going shopping or looking after your home or garden?		
4. Over the last week, how much has your skin influenced the clothes you wear?		
5. Over the last week, how much has your skin affected any social or leisure activities?		
6. Over the last week, how much has your skin made it difficult for you to do any sport?		
7. 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?		
8. Over the last week, how much has your skin created problems with your partner or any of your close friends or relatives?		
9. Over the last week, how much has your skin caused any sexual difficulties?		
10. 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?		

Table 2:
Mean DLQI Scores according to Severity of Disease.

a: Overall p-value was calculated using ANOVA (F-test)
b: Multiple comparison test (LSD) was performed.

Patient Groups	Mean DLQI ± SD	p-value ^a	Comparison of Patient Groups	p value ^b
Mild	10.74 ± 3.06	0.000 Significant	Mild – Moderate	0.000
Moderate	13.44 ± 3.47		Mild – Severe	0.000
Severe	15.27 ± 3.46		Moderate – Severe	0.029
Total Sample	12.80 ± 3.76			

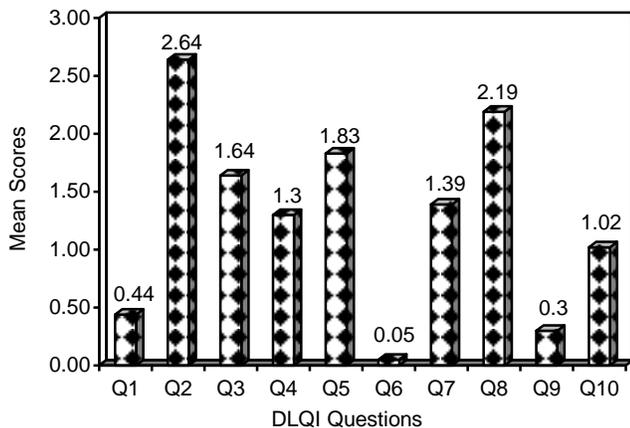


Figure 1: Mean DLQI scores.

Discussion

AGA, most common type of baldness, begins between the ages of 12 to 40 years in both sexes.³ Prevalence of AGA in women of 20 – 70 years of age in Pakistan was found to be 39.6%.¹⁰ Studies to find out exact prevalence of AGA in males of Pakistani origin have not been carried out so far. The incidence and severity of AGA is highest in white men followed by Asians and African Americans and lowest in Native Americans and Eskimos.¹¹ Psychosocial disease caused by AGA is quite a natural phenomenon especially in an image-conscious modern society of today that places great value on retention of youthfulness, a concept reinforced on daily basis by the advertising media.^{12,13}

In the present study, we enrolled 125 patients of androgenetic alopecia and DLQI was used to assess quality of life in these cases. Mean age of the patients in our study was 29.01 ± 8.62 years which is a younger age group. This may be due to the fact that in our society, 20 – 30 years is the prime age to get married, an important reason for them to report earlier about their disease. This is also comparable to studies performed by Cash TF¹⁴ and Wells *et al*,¹⁵ where it was seen that

impairment of QoL is greater in younger age and especially those who are single. But our results are in contrast to the study conducted by Cartwright *et al*,¹⁶ in which the mean age of patients was 35 ± 10.7. The difference may be due to racial and cultural variations in different parts of the world.

The number of female patients (72) in our study was greater as compared to males (53), which is similar to that of Cartwright *et al*¹⁶ study where female patients (171) were also more than males (43). The mean DLQI score of total sample size in our study was 12.80 ± 3.76 while it was 12.49 ± 6.67 in case of Cartwright *et al*¹⁶ study which is comparable with our study. Mean DLQI scores in both the studies fall in the category of 11 – 20 which according to DLQI manual¹⁷ is interpreted as a very large effect on patients. QoL. These results indicate an impairment of QoL in patients with AGA which is in accordance to another study of Cash TF¹⁴ which showed increased stress and poor QoL in patients suffering from AGA.

The difference between mean DLQI scores for females (13.49 ± 3.91) and males (11.87 ± 3.35) was statistically significant in the present study which is comparable to Cartwright *et al*¹⁶ results where females had a significantly higher mean DLQI value (13.04 ± 6.81) as compared to males (10.42 ± 5.69). These results indicate that females experience a greater psychological distress due to AGA. This finding is also comparable to another study conducted by Cash *et al*¹⁸ where AGA was remarkably more stressful for women than men. It was noticed in our study that patients with more severe disease had a higher mean DLQI score (Table 1) with statistically significant *p* value (0.029) indicating that QoL is more impaired in case of severe disease, similar to the trend seen in other studies.^{14,19,20}

In the present study, patients who were single and those with greater duration of disease had a poorer QoL, similar trend seen in the study of Cash TF¹⁴ where it was also observed that QoL is more markedly impaired in singles and in patients with greater durat-

ion of disease. It was also noticed in our study that educated patients showed a greater impairment of QoL which may be due to their increased concern about self image, awareness and high degree of social interactions. The effect of this variable on DLQI, in connection with androgenetic alopecia, has not been observed before.

In the present study, mean DLQI scores were highest for (Q₂) which is related to symptoms and feelings (Figure 1) implying that, this is the most severely affected domain in our patient's lives. This result is also comparable to Cartwright *et al*¹⁶ study where this domain had the greatest mean score.

The present study shows that DLQI can be used to assess the impact of androgenetic alopecia on QoL. Patients with high score may benefit from individual counseling and / or contact with psychologist. This negative impact on QoL can be reversed to some extent by medical treatment as shown by improvement in DLQI scores in patients with AGA after treatment with finasteride in a study conducted by Uchiyama *et al*.²¹

Conclusion

Androgenetic alopecia has a very large effect on patients' quality of life with significant psychosocial limitations. In the present study, impairment of QoL was found to be greater in females, younger age group and severe disease. During daily life, symptoms and feelings followed by personal relationships are found to be more severely affected in our patients.

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