Original Research Article

Role of finasteride in improvement of quality of life in male pattern hair loss

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Abstract

Background: Androgenic alopecia (AGA) may be a common hair loss disorder with genetic predisposition seen usually in men. Despite the fact that the condition is harmless, non-life threatening however it causes a big psychological stress and affects the individual's overall quality of life (QoL). **Objectives**: This study was done to assess the QoL in patients' treatment with 1 mg oral finasteride withthe help of dermatological Life Quality Index (DLQI) form. **Methods**: This study was conducted within the Department of Clinical pharmacology and therapeutics with the collaboration of dermatology department at S. N. Medical College and Associated Hospital, Agra (U.P.), once taking approval from the institutional ethical committee.Seventy male patients were registered during this study, two parameters DLQI score and patient's self-assessment score was taken to access the quality of life. The DLQI uses ten things concerning symptoms and feelings, daily activities, leisure, work and college, personal relationships, and treatment as dimensions of life, every scored on a 0–3 scale. The full DLQI score equals 0–30; higher scores showing bigger impact on QoL. **Results**: Evaluation was done on 62 patients (due to drop out of 8 patients)aged between 18 to 40 years with a mean age of 27.90 ± 5.43 years, the average duration of hair loss was 23.20 months , maximum number of cases were in grade II that was 20 (32.25%). hair growth was seen in decreasing order as the grade increased improvement decreased. 83.8 % patients (52/62) shown improvement in hair growth, in 2 patients loss of hair (3.2%) was seen, in grade wise analysis maximum improvement was seen in grade II and grade III patients. Average DLQI scores before the treatment was 8.76 ±1.13 which decrease to 5.29 ±2.08 after the treatment, this difference was statistically significant (p=0.0001). Higher the DLQI means poorer the quality of life.

Keywords: Androgenic alopecia, Hair loss, Finasteride, Quality of life (QoL)

Introduction

Hair represents physical attractiveness and juvenility to men and women, thus hair loss will have important negative impacts on the conceit and quality of life. The foremost common causes of hair loss in men and women are androgenic alopecia (AGA) that could be a genetically determined,age-dependent,progressive hair-loss condition with gender-specific variations in frequency and severity. Male androgenic alopecia (MAGA) also called male pattern hair loss (MPHL), is characterized by the miniaturization of the hair follicles within the frontal and parietal part of scalp [1]. It is the most common form of alopecia in men with most men in developing some degree of the recession of the hairline during their lifetime, although prevalence may vary, severe MPHL can be seen in around 50% of men beyond age 40 [2,3]. The male hormone androgen plays a vital role within the pathological process of AGA, however heritable heredity is assumed to be the first cause. Within the follicle cells, androgen is reborn into the biologically a lot of active kind, dihydrotestosterone (DHT) a substance, catalyzed by the catalyst 5-alpha reductase enzyme. This binds to steroid hormone receptors within the follicle and therefore the specific bond triggers cellular processes which reduce the duration anagen phase of the hair cycle. For this reason, the hair passes earlier into the telogen phase and falls out. Gradually, over succeeding cycle terminal hair converts into thinner and shorter vellus hair (i.e. the retrograde phase of the cycle) and the hair follicle becomes minute. Hair loss have the negative

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impact on conceit and quality of life of men thus this study was planned to understand the effect of finasteride on quality of life of an AGA patient.

Materials & methods

The present study was conducted within the Department of Clinical Pharmacology and Therapeutics with the collaboration of Dermatology Department at S. N. Medical College and Associated Hospital, Agra (U. P.) after taking approval from the institutional ethical committee. (Letter no: IEC/2017/48).

Inclusion Criteria: All male patients of age between 18-40 years who were diagnosed a case of androgenetic alopecia coming in skin OPD, SN Medical College Agra.

Exclusion Criteria:

- Patients with alternative reason behind baldness
- Seborrheic eczema or disease of the skin on the scalp
- History of allergic reaction to finasteride

Study population

A total of 70 male patients between the ages of 18-40 years in good health, with Androgenetic Alopecia with II to V grade on the modified Norwood Hamilton classificationand had given their written informed consent, who complied with all the inclusion and exclusion criteria and able to read and understand the DLQI form in Hindi or English were enrolled into the study sample size

The sample size is calculated with the following formula

$$n = N z^2 P \frac{(1-P)}{d^2(N-1) + z^2 P(1-P)}$$

Where

n= sample size

z= z statistic for a level of confidence,

P= expected prevalence or proportion (50%)

d= precision (in proportion of one; if 3%, = 0.03)

N= Population size

Study design: It was an observational, prospective, open-label, study conducted to investigate the result of finasteride on quality of life in AGA patients.

Source of data: Patients enrolled who were diagnosed with androgenetic alopecia in OPD of Dermatology in S.N. Medical College, Agra.

Duration of study: One year

Study assessments: Two indices were taken to assess the impact of finasteride on quality of life

1. DLQI: The DLQI form consisted of ten queries concerning symptoms and feelings, daily activities, leisure, work and faculty, personal relationships, and treatment as dimensions of life. Every item was scored on a scale of 0–3 points. Scores were supplementary to yield a complete DLQI of 0–30 points; higher scores indicated poorer the patient's QoL.
2. Patient self assessment- Subjective assessment (the patient's perception of hair loss severity)

Patients assessed their scalp hair on hair growth assessment scale of 0-4

0: (No improvement); 1: (1- twenty fifth improvement); 2: (26-50% improvement); 3: (51 -75% improvement); and 4: (76 -100% improvement)

All the patients were evaluated and details like age of onset, length of sickness, severity grading of AGA was done and details recorded during a structured proforma.

Results

Although the study was started with 70 patients but 8 patients dropout the study due to some unknown reasons so evaluation was done on 62 patients aged between 18 to 40 years with a mean age of 27.90 ± 5.43 years; the average duration of hair loss was 23.20 months, maximum number of cases were in grade II that was 20 (32.25%). hair growth was seen in decreasing order as the grade increased improvement decreased. About 83.8% patients (52/62) shown improvement in hair growth, in 2 patients loss of hair (3.2%) was seen, in grade wise analysis maximum improvement was seen in grade II and grade III patients. Average DLQI scores before the treatment was 8.76 ±1.13 which decrease to 5.29 ±2.08 after the treatment, this difference was statistically significant (p=.0001) higher the DLQI means poorer the quality of life.

Table 1: DLQI before and after treatment

	DLQI Before treatment	DLQI Before treatment
Mean	8.76	5.29
SD	±1.13	±2.08
p value	0.00001	

Table 1 llustrates the dermatology life quality index score change, before and after the treatment in it was 8.76 ±1.13 before treatment 5.29± 2.08 after treatment. This was also statistically significant (p=0.0001).The similar result also find in Yamazaki, Masashi et al study "oral finasteride improved the quality of life of androgenetic alopecia patients "they also said finasteride improve the quality of life [4]. Other study by Xiao-Sheng (2013) et al also finds the similar result [5].

Table 2: Patient self- assessment score change from the baseline to subsequent follow up

Before t/t	After treatment		
	3 (M)	6 (M)	9 (M)
0	0.85	2.00	2.16
0	±0.72	±2.87	±1.27
	2.29	8.61	7.83
	0.02	.00001	.00001

Table 2 illustrates patient self assessment score change from the baseline to subsequent follow up. Patient self- assessment score change from the baseline to 3-month was 0.85 ±0.72 and baseline to 6 & 9 months it was 2.00±2.87 and 2.16±.1.27 respectively .that was statistically significant (P value =0.00001).

Table 3: Analysis of patient's self-assessment after treatment

Patient self-assessment score	Patients (n)	Patients (%)
0	10	16.12
1	5	8
2	22	35.48
3	15	24.19
4	10	16.12

Table 3 illustrates analysis of patient's self -assessment score after the treatment. About 83.88% patients were satisfied with the treatment 16.12 % patients were not satisfied with the treatment. Out of 83.88 % patients 43% patients were satisfied with the mild increase in hair growth and 40% patients were satisfied with the moderate increase in hair growth. About 16.12% patients showed a moderate increase in hair growth.

Discussion

Hair incorporates a big role inside the general look of the person that has numerous social and social implications. Inside the cognitive content context, hair has been given innumerable importance and extensive hair has symbolized vitality, health, and virility, whereas loss or removal of hair will connote subjugation, loss of individuality, impotency, and/or impairment. Hairquality, Associate in good look could also be an indicator of attractiveness for many folks, and visual hair loss will have a heavy negative impact. Hair loss considerably impacts associate in nursing individual's character and studies indicate that patients with the hair loss could have considerably shrunken quality of life. The standard of life is outlined as a result of the subjective perception of the impact on the health standing, and on the physical, psychological, and social functioning and well-being of the patients. Quality of life assessments help, in clinical practice, clinicians to make judgments about which aspects of daily life are most affected by the disease. In our study, the mean DLQI score was 8.76 ±1.13 which are comparable to the score of 6.3reported by Zhang et al in 178 patients of AGA [6].Williamson et al also reported a mean score of 8.3±5.6 in 70 patients with alopecia[7]. Our study showed that AGA moderately affected the QoL, including feelings of loss of self-confidence and low self-esteem. In our study, higher scores were recorded for question 2, 3 and 5 inside the form that mirrored the numerous lowered self-worth and self-perception of one's look due to hair loss and hence the impaired social wellbeing of the patients. We have a tendency to ascertained higher DLQI scores in younger patients, patients with long standing hair loss and in higher grades of AGA. These results are in accordance with the findings by Gupta S study [8]. Zhang et al additionally rumored higher DLQI scores in younger people, long standing illness and in severe grades of AGA [6]. it has been discovered that men who had additional profound hair loss were additional discontented with their look and were additional involved with their older look than those with borderline hairloss and had lower self-image [9]. This seems to be a results of the strain and importance of physical look and body image in social settings [10]. The present study had several limitations. First, all the patients in our study were recruited in a Dermatology Department 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 India.

Conclusion

Patients with AGA have a considerably poor quality of life. Subsequent DLQI score was seen in younger age, long standing hair loss and in severe grades of AGA. Title is said to a lowered self-worth that in turn finishes up in useful consequences in social group and social interactions. It is vital that physicians contemplate the psychosocial impact of title on totally different aspects of patient's lives. This study indicate that treatment with finasteride improve the hair growth considerably that facilitate in up the quality of life in male patients of androgenous phalacrosis.

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