

ORIGINAL RESEARCH

A COMPARATIVE STUDY OF EFFICACY OF 5% MINOXIDIL AND 1 MG FINASTERIDE IN ANDROGENETIC ALOPECIA MALE PATIENTS

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ABSTRACT

Background: Androgenetic alopecia (AGA) is the most common form of hair loss experienced in genetically predisposed individuals. The present study evaluated efficacy and safety of 5% minoxidil and 1 mg finasteride in Androgenetic Alopecia male patients.

Materials & Methods: 74 male Androgenetic Alopecia male patients were divided into 2 groups. Group I patients received minoxidil 5% topical solution 1 ml twice a day and group II received oral finasteride 1 mg tablet once a day. Standardized colour global photographs of the affected area were taken and baseline and post-treatment photographs were compared.

Results: Age group 20-40 years had 14, 40-60 years had 25 and >60 years had 35 patients. The difference was significant ($P < 0.05$). The mean scalp hair count in group I before treatment was 94.2 per square centimetre and in group II was 96.4 per square centimetre. The mean scalp hair count in group I after treatment was 116.4 per square centimetre and in group II was 106.2 per square centimetre. The difference was significant ($P < 0.05$). Score -1 was seen in 3 in group II, 0 in 17 in group I and 10 in group II, 1 in 8 in group I and 6 in group II, 2 in 6 in group I and 8 in group II and 3 in 6 in group I and 10 in group II. The difference was significant ($P < 0.05$).

Conclusion: Oral 1 mg finasteride was found to be more effective than topical 5% minoxidil in management of Androgenetic Alopecia.

Key words: Androgenetic Alopecia, dihydrotestosterone, Scalp

Introduction

Androgenetic alopecia (AGA) is the most common form of hair loss experienced in genetically predisposed individuals. It occurs due to the stimulation of genetically susceptible hair follicles by dihydrotestosterone (DHT).¹ DHT causes follicular miniaturization, resulting in decreased hair density. Male androgenetic alopecia (MAGA) is characterized by the miniaturization of the hair follicles in the frontal and parietal scalp. Prevalence may vary, seen in around 50% of men beyond age 40.² There are a lot of treatments available in the market but in spite of these people are still suffering with baldness and seeking a reliable option. Currently, two FDA-approved medicines used for AGA are topical minoxidil and oral finasteride.³

Topical minoxidil is a widely used, effective treatment for hair loss in men with AGA.⁴ Topical minoxidil 2–5%, oral finasteride, and low-level laser therapy are current the standard first-line treatments for androgenetic alopecia (AGA). Minoxidil in an oral formulation has been previously used in general medicine for the treatment of severe and uncontrolled hypertension at a dose of 10–40 mg.⁵ Unintentionally, the early trials of oral

minoxidil as an antihypertensive drug documented side effects such as hypertrichosis and hirsutism with chronic use and reported the drug's potential for stimulating hair growth.⁶ The present study evaluated efficacy and safety of 5% minoxidil and 1 mg finasteride in Androgenetic Alopecia male patients.

Materials & Methods

The present study consisted of 74 male Androgenetic Alopecia patients. All were informed regarding the study and their written consent was obtained.

Data such as name, age etc. was recorded. Patients were divided into 2 groups. Each group comprised of 37 patients. In group I patients were treated with minoxidil 5% topical solution 1 ml twice a day and in group II with oral finasteride 1 mg tablet once a day. The paired baseline and post-treatment photographs with rating scale following 7 points (-3: greatly decreased, -2: moderately decreased, -1: slightly decreased, 0: no change, +1: slightly increased, +2: moderately increased, +3: greatly increased) was used for hair assessment. Data thus obtained were subjected to statistical analysis. P value < 0.05 was considered significant.

Results

Table I Distribution of patients

Age groups (years)	Number	P value
20-40	14	0.05
40-60	25	
>60	35	

Table I shows that age group 20-40 years had 14, 40-60 years had 25 and >60 years had 35 patients. The difference was significant (P< 0.05).

Table II Scalp hair count values before and after treatment

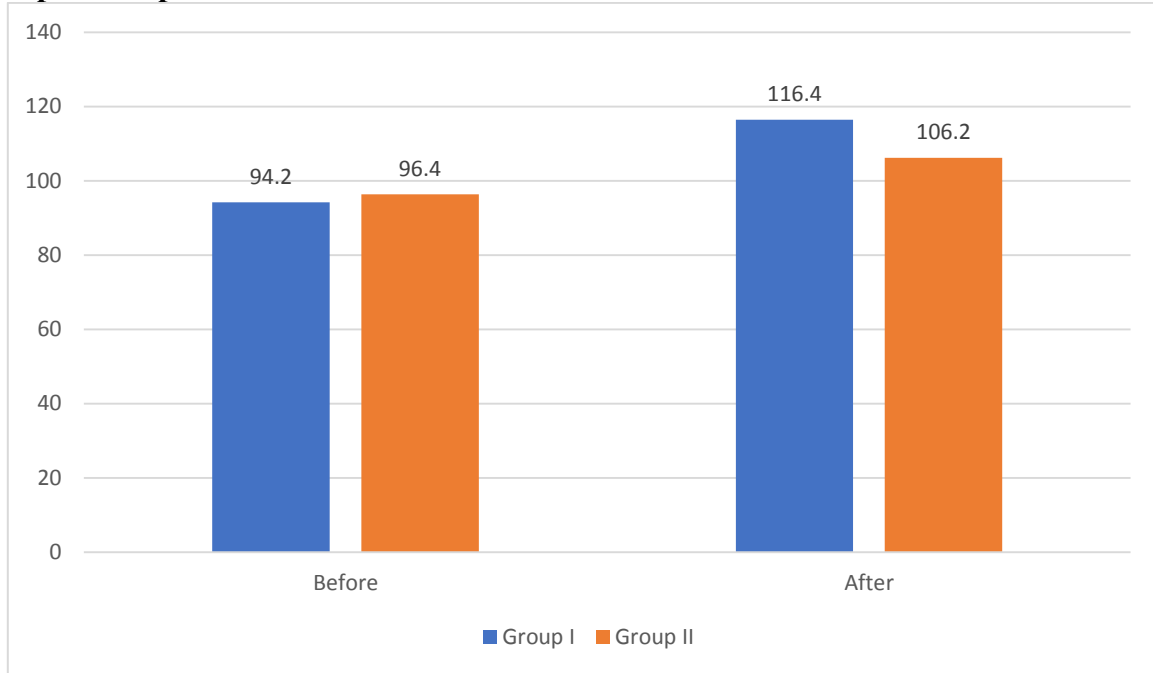
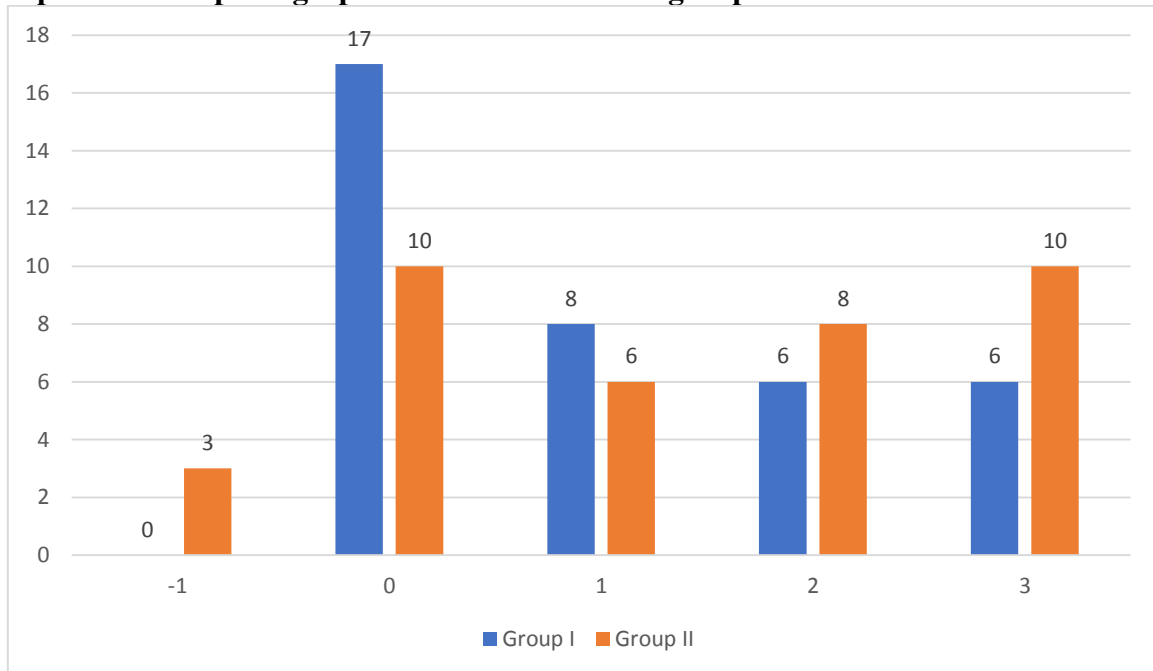
Period	Group I	Group II	P value
Before	94.2	96.4	0.82
After	116.4	106.2	0.05

Table II, graph I shows that mean scalp hair count in group I before treatment was 94.2 per square centimetre and in group II was 96.4 per square centimetre. The mean scalp hair count in group I after treatment was 116.4 per square centimetre and in group II was 106.2 per square centimetre. The difference was significant (P< 0.05).

Table III Global photographic assessment in both groups

Score	Group I	Group II	P value
-1	0	3	0.82
0	17	10	0.05
1	8	6	0.97
2	6	8	0.98
3	6	10	0.05

Table III, graph II shows that score -1 was seen in 3 in group II, 0 in 17 in group I and 10 in group II, 1 in 8 in group I and 6 in group II, 2 in 6 in group I and 8 in group II and 3 in 6 in group I and 10 in group II. The difference was significant (P< 0.05).

Graph I Scalp hair count values before and after treatment**Graph II Global photographic assessment in both groups**

Discussion

Androgenetic alopecia (AGA) is the most common male hair loss disorder, affecting 30% to 50% of men aged >50 years and up to 80% of men aged >70 years.⁷ AGA is characterized by a progressive transformation of terminal hair (pigmented, thick, visible) into fine, nonpigmented vellus hair due to the decreasing activity and size of scalp hair follicles.⁸ In men, this results in a receding frontal hair line and balding at the top of the head, which gradually enlarge and merge together.^{9,10} Minoxidil promotes hair growth by shortening the telogen (resting) phase of hair follicles, and inducing the anagen (growth) phase.^{11,12} Treatment should be started as early as possible to halt the progressive hair follicle miniaturization that causes AGA. The first effects of treatment can be expected

approximately 6-8 weeks after treatment initiation, with clinically measurable effects at 3-4 months.^{13,14} The present study was conducted to assess efficacy and safety of 5% minoxidil and 1 mg finasteride in male patients of Androgenetic Alopecia.

We found that age group 20-40 years had 14, 40-60 years had 25 and >60 years had 35 patients. Panchaprateep et al¹⁵ evaluated the efficacy and safety of oral minoxidil for the treatment of male AGA. Thirty men aged 24–59 years with AGA types III vertex to V were treated with oral minoxidil 5 mg once daily for 24 weeks. Efficacy was evaluated by hair counts, hair diameter measurements, photographic assessment, and self-administered questionnaire. The safety of the treatment was closely monitored by means of physical examinations and laboratory investigations. There was a significant increase in total hair counts from baseline at weeks 12 (mean change +26, range 182.5–208.5 hairs/cm²) and 24 (mean change +35.1, range 182.5–217.6 hairs/cm²) (both p=0.007). Photographic assessment of the vertex area by an expert panel revealed 100% improvement (score > +1), with 43% of patients showing excellent improvement (score +3, 71–100% increase). The frontal area also showed a significant response but less than that of the vertex area. Common side effects were hypertrichosis (93% of patients) and pedal edema (10%). No serious cardiovascular adverse events and abnormal laboratory findings were observed.

We observed that score -1 was seen in 3 in group II, 0 in 17 in group I and 10 in group II, 1 in 8 in group I and 6 in group II, 2 in 6 in group I and 8 in group II and 3 in 6 in group I and 10 in group II. Chandrashekar et al¹⁶ assessed the efficacy of maintaining hair growth with 5% topical minoxidil fortified with 0.1% finasteride in patients with AGA after initial treatment with 5% topical minoxidil and oral finasteride for two years. A retrospective assessment was done in 50 male patients aged 20-40 years with AGA. All the patients had been initially treated with topical minoxidil and oral finasteride for a period of two years, after which the oral finasteride was replaced with topical minoxidil fortified with finasteride. Five of 50 patients had discontinued the treatment for a period of 8-12 months and were then resumed with only topical minoxidil fortified with finasteride. The patients' case sheets and photographs were reviewed by independent observers and the efficacy of minoxidil-finasteride combination was assessed. Of the 45 patients who underwent a continuous treatment for AGA, 84.44% maintained a good hair density with topical minoxidil-finasteride combination. Of the five patients who discontinued oral finasteride for 8-12 months, four demonstrated good improvement in hair density when treatment was resumed with topical minoxidil-finasteride combination.

Kaufman et al¹⁷ determined the effect of oral finasteride treatment for two years and the effect of withdrawal of treatment after one year. The results showed that the effect of oral finasteride was much better than the placebo group and there was reversal in the hair density after withdrawing the oral finasteride. This was because of the increased levels of DHT once finasteride had been stopped.

The limitation the study is small sample size.

Conclusion

Oral 1 mg finasteride was found to be more effective than topical 5% minoxidil in management of Androgenetic Alopecia.

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