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Early Intervention of 5% Minoxidil Usage Yields Improved Hair Regrowth in Male Androgenetic Alopecia: The Effects of Age and Stage

Ramond J. Waide PharmD, James A. McGuire MS, Paul LaTerra BS, Asha Patel Shah MD, MBA, FAAD

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Background

Introduction

Androgenetic alopecia is the most common form of hair loss in men, affecting 30-50% of men by age 50[1]. In a survey completed in 2023, 322 male topical minoxidil users were surveyed to inquire how old they were when they started treatment. On average, men started at age 38 and on average wished they had started at age 34[2]. It is often assumed that starting an intervention earlier in any disease process helps mitigate progression of disease. There is a paucity of data in androgenetic alopecia regarding earlier intervention resulting in better outcomes. The objective of this research is to investigate change from baseline non-vellus hair counts within different age groups and different hair loss severity stages, as classified by the Norwood-Hamilton scale. Treatments were compared by covariate category (age and hair loss severity stage) using models with terms for center, treatment, covariate category, and covariate category by treatment.

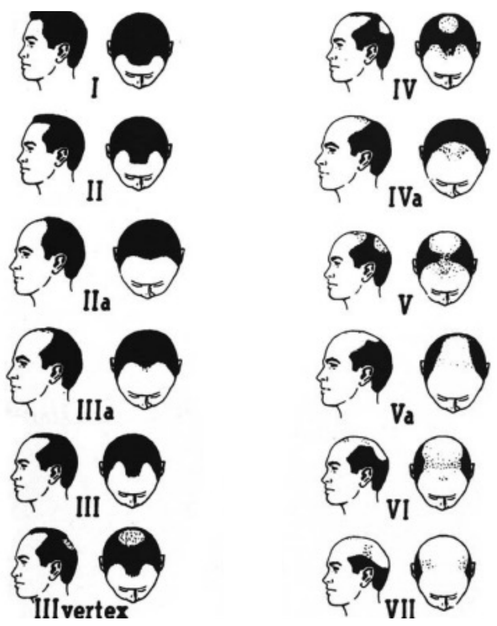
Materials & Methods

Materials & Methods: To explore the relationship between hair regrowth and selected covariates, including subject age and stage of hair loss, the change from baseline at Week 16 in target area hair count (TAHC) was summarized by covariate in a men's 5% Minoxidil Topical Foam (MTF) study. This post hoc analysis builds upon a previous post hoc analysis evaluating change from baseline in hair count at the end of treatment (16 weeks) by age group among men enrolled in a phase III trial of commercially available 5% MTF. Age groups included men 20–30, and men older than 30 years of age. In addition, differences in hair regrowth by stage of hair loss were assessed using mean change from baseline in hair count at Week 16, with hair loss stage classified according to the Norwood-Hamilton scale. Men enrolled in the study had Type III vertex, Type IV, or Type V classifications of hair loss.

Results

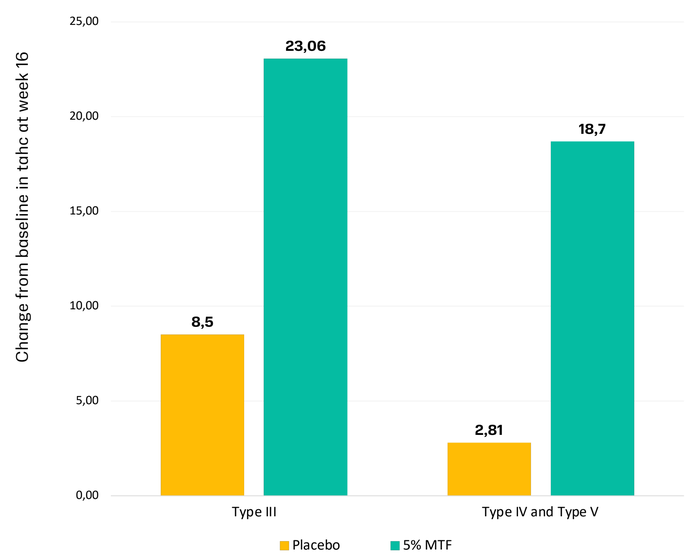
Subjects using 5% MTF twice daily demonstrated greater regrowth of non-vellus hairs from baseline among younger men compared with older age groups. Change from baseline in TAHC at Week 16 was 26.25 hairs among men aged 20–30 years, and 19.93 hairs among men above age 30. Subjects using 5% MTF twice daily also demonstrated greater regrowth of non-vellus hairs from baseline in the Type III hair loss pattern compared with Type IV and Type V patterns. Subjects with Type III classification showed an increase in hair count of 23.06 hairs compared with 18.70 hairs for Type IV and Type V classifications. Subjects using 5% MTF showed statistically significant improvement in hair regrowth compared with placebo across all three hair loss classifications ($p<0.002$).

Norwood-Hamilton Scale for male androgenetic alopecia



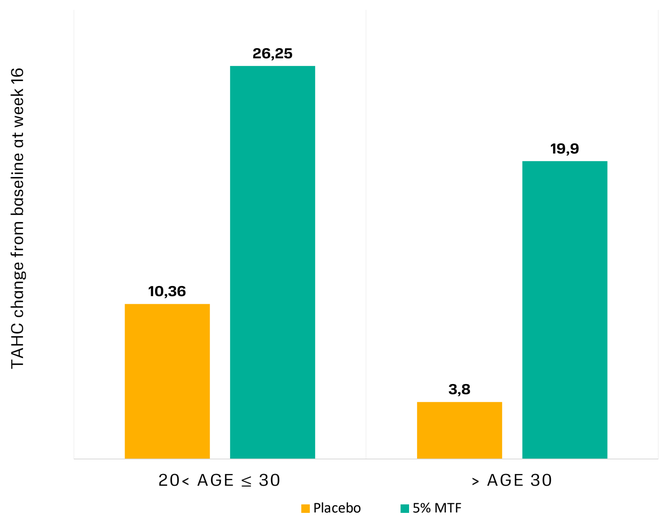
Results: Table and Figures

Figure 1. Bar Chart for Change from baseline in Hair Count at Week 16 by Norwood-Hamilton Hair Loss Pattern & Treatment (Subjects in ITT Analysis Set)



TAHC = Total count of non-vellus hairs (≥30 mm in diameter) in a prespecified 1-cm² area

Figure 2. Bar Chart for Change from baseline in Hair Count at Week 16 by Age Group & Treatment (Subjects in ITT Analysis Set)



TAHC = Total count of non-vellus hairs (≥30 mm in diameter) in a prespecified 1-cm² area

Table 1. Summary of Change From Baseline in Hair Count at Week 16 by Subgroup Variables ITT Subjects in 5% MTF clinical trial.

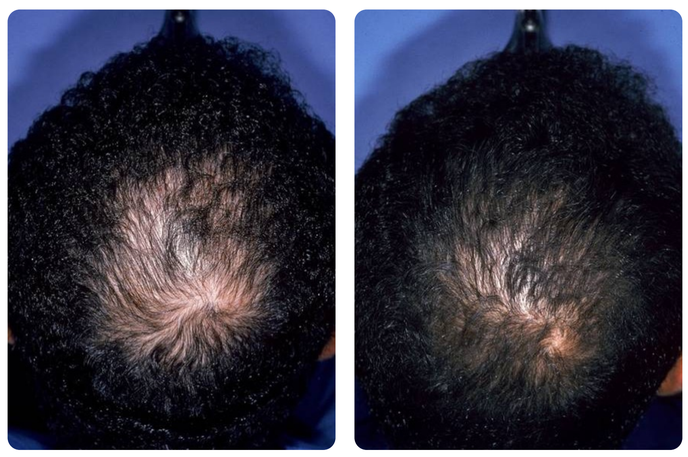
		Placebo	5% MTF
Norwood-Hamilton Hair Loss Pattern			
Type III	N	52	69
	Mean	8.50	23.06
	S.D.	20.292	18.389
	Median	5.50	22.00
Type IV and V	N	97	94
	Mean	2.81	18.70
	S.D.	19.072	24.593
	Median	4.00	17.00
Age			
20≤Age ≤ 30	N	22	16
	Mean	10.36	26.25
	S.D.	17.597	17.578
	Median	9.00	22.00
> Age 30	N	127	147
	Mean	3.83	19.93
	S.D.	19.863	22.632
	Median	4.00	18.00

Before and After



Baseline Week 16

Figure 3. shows a male subject of younger age (age ≤ 30) with significant hair regrowth at week 16 compared to baseline after using 5% MTF. Age = 25, Type IV.



Baseline Week 16

Figure 4. shows a male subject at an earlier stage of hair loss (Type III vertex) with significant hair regrowth at week 16 compared to baseline after using 5% MTF. Age = 39, Type III.

Conclusions

The use of 5% MTF twice daily regrew more non-vellus hairs versus baseline in all age groups and all stages of hair loss. However, regrowth was greater in younger men and men at an earlier stage of hair loss. This study has demonstrated that there is objective improvement of hair regrowth when intervening earlier in age and stage of hair loss severity with topical minoxidil. This data can appropriately and objectively inform health care providers with evidence to provide best practices in shaping the treatment paradigm for male androgenetic alopecia.

References

1. Asfour L, Cranwell W, Sinclair R. Male Androgenetic Alopecia. In: Feingold KR, Anawalt B, Blackman MR, et al., eds. Endotext. South Dartmouth (MA): MDText.com, Inc.; January 25, 2023. https://www.ncbi.nlm.nih.gov/books/NBK278957/
2. Numerator Study: Hair Loss Consumer Journey. November 2023. Kenvue.
3. Olsen EA, Whiting D, Bergfeld W, et al. A multicenter, randomized, placebo-controlled, double-blind clinical trial of a novel formulation of 5% minoxidil topical foam versus placebo in the treatment of androgenetic alopecia in men. J Am Acad Dermatol. 2007;57(5):767-774. doi:10.1016/j.jaad.2007.04.012
4. A post-hoc analysis probed effects in the change from baseline at the end of treatment (16 weeks) in hair count based on age: considering younger millennials (20-30 yrs), older millennials (31-40 yrs), and generation X (41-50 yrs) for men enrolled in a phase III trial of commercially available 5% MTF (*Rogaine™, Johnson & Johnson, USA*)

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