JDA Japanese Dermatological Association
THE JOURNAL OF DERMATOLOGY
doi: 10.1111/1346-8138.13312
Journal of Dermatology 2016; ●●: 1–2

LETTER TO THE EDITOR

Efficacy and safety of minoxidil 3% lotion for beard enhancement: A randomized, double-masked, placebo-controlled study

Dear Editor,

The beard is hairs grown on the chin and jaw line. Beard enhancement is a desirable feature for some men to improve masculine and attractive appearance, signaling dominance, strength and self-confidence. The physician, professor, engineer, artist and pastor represent occupational stereotypes in which male members are expected to have a beard.[1] Some women also find men wearing beard more attractive. Furthermore, in the hair restoration technique called follicular unit extraction, beard hairs are used as donor units on recipient areas of androgenetic alopecia patient whose scalp donor hairs are insufficient.[2] Topical minoxidil has been prescribed for the treatment of androgenetic alopecia. To our knowledge, there is no published study about minoxidil for beard enhancement. The present study aimed to compare the efficacy and safety of minoxidil 3% with placebo in beard hair stimulation.

The 16-week randomized, double-masked, placebo-controlled was approved by Mae Fah Luang University (ClinicalTrial.gov ID: NCT02275832). Forty-eight men, aged 20–60 years, who desired beard enhancement were enrolled in the study. Exclusion criteria included hair disorders or using medications for hair regrowth within the previous 6 months. Patients were instructed to apply 0.5 mL of topical assigned solution on the chin and jaw line twice daily. Patients' beard photographs were taken for global photographic score as a primary efficacy assessment every 4 weeks. Three doctors evaluated photographs on a 7-point scale (+3 to −3).[3] The changes in hair counts and diameter from baseline were measured as secondary efficacy assessment. The measurement landmark was 3-cm lower from the vermilion border of the lower lip at midline. Patients' self-assessments were surveyed on the 16th week using a 7-point scale the same as the global photographic score. Side-effects were evaluated by detailed history and physical examination.

Forty-six of 48 patients completed the study. At week 16, the global photographic score in the minoxidil group was significantly higher than that in the placebo group using the Mann–Whitney *U*-test ($P = 0.002$). Table 1 demonstrates that mean change in hair count from baseline significantly increased in the minoxidil group compared with the placebo group. No statistically significant difference was found between minoxidil and placebo groups for mean change in hair diameter. For patients' self-assessments, the minoxidil group was significantly superior to the placebo group using the Mann–Whitney *U*-test ($P = 0.013$). The adverse reactions were mild and not statistically significantly different between groups.

Topical minoxidil has been used to treat androgenetic alopecia. We also demonstrated that it could be used for eyebrow hypotrichosis.[4] In this trial, minoxidil lotion was superior to placebo for beard enhancement based on the global photographic scores, mean change from baseline in hair count and patients' self-assessments. There was no statistically significant difference between groups for changes in hair diameter from baseline. This can be explained by: (i) the increase in hair count, especially non-terminal hairs; and (ii) measurement of hair was done on both terminal and non-terminal hairs. The exact mechanism of minoxidil in promoting hair growth is still unclear but there are many hypotheses.[5] In conclusion, minoxidil 3% lotion is effective and safe for beard enhancement.

CONFLICT OF INTEREST: None declared.

Sittichai INGPRASERT, Chuchai TANGLERTSAMPAN, Nalintip TANGPHIANPHAN, Chinnawat REANMANEE
Department of Dermatology, School of Anti-aging and Regenerative Medicine, Mae Fah Luang University Hospital (Bangkok), Bangkok, Thailand

Table 1. Mean change from baseline in hair diameter and count at week 16

	Mean change from baseline (mean ± SE)		
	3% minoxidil	Placebo	Difference between two groups (mean ± SE)
Hair diameter (μm)	0.43 ± 2.31 ($P = 0.852^{\dagger}$)	0.57 ± 1.23 ($P = 0.650^{\dagger}$)	−0.13 ± 2.62 ($P = 0.961^{\ddagger}$)
Hair count	5.00 ± 0.72 ($P < 0.001^{\dagger}$)	0.35 ± 0.31 ($P = 0.277^{\dagger}$)	4.65 ± 0.78 ($P < 0.001^{\ddagger}$)

†Paired Student's *t*-test. ‡Independent sample *t*-test. SE, standard error.

Correspondence: Chuchai Tanglertsampan, M.D., Mae Fah Luang University (Bangkok), 38/11-13 Asoke Place Building, Asoke Road (Sukhumvit 21), Klongtoey Nua, Wattana, Bangkok 10110, Thailand. Emails: drchuchait@yahoo.com, chuchai.tan@mfu.ac.th

REFERENCES

1 Hellstrom A, Tekle J. Person perception through facial photographs: effects of glasses, hair, and beard on judgments of occupation and personal qualities. *Eur J Soc Psychol* 1994; **24**(6): 693–705.
2 Umar S. Use of body hair and beard hair in hair restoration. *Facial Plast Surg Clin North Am* 2013; **21**(3): 469–477.
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.
4 Lee S, Tanglertsampan C, Tanchotikul M, Worapunpong N. Minoxidil 2% lotion for eyebrow enhancement: a randomized, double-blind, placebo-controlled, split-face comparative study. *J Dermatol* 2014; **41**: 149–152.
5 Trueb RM, Lee WS. *Male Alopecia*. Springer: Cham, 2014.