

**Abstract N°: 1823****Assessing safety and efficacy of a mixture of oral finasteride 1 mg, minoxidil 1 mg, and biotin 5 mg in treatment of androgenetic alopecia in males: a single-arm, before-after clinical trial**

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Introduction & Objectives:

Androgenetic alopecia (AGA) is a very common form of hair loss in both males and females; it is characterized by progressive thinning and then shedding of hair. Binding of dihydrotestosterone (DHT) to androgen receptors in genetically predisposed patients leads to progressive decrease in anagen phase and increase in telogen phase. AGA can have detrimental psychological and psychosocial impact of patients' lives. Current treatments for AGA include minoxidil, finasteride, dutasteride, injections, microneedling, low-level laser therapy, and hair transplant. Many of these treatments may have suboptimal and unsatisfactory results. Currently, topical minoxidil and oral finasteride are the only FDA-approved medications for treatment. However, these treatments have limitations, including inconsistent response rates and the poor transdermal absorption of topical minoxidil. In this study we investigated the effects of combination of oral finasteride, oral minoxidil, and oral biotin for male patients with AGA.

Materials & Methods:

This is a single-arm, before-after clinical trial performed on 15 male patients with a mean age of 33.44 ± 8.80 years with Norwood stage II-IV AGA. Patients were prescribed a capsule containing finasteride 1mg, minoxidil 1mg, and biotin 5 mg daily for 16 weeks. Before study, and after 8 and 16 weeks the assessments were performed using FotoFinder device® and its Trichoscale DX®, global photographic review, and combing test. The assessments included number of anagen, telogen, vellus, and terminal hair, mean hair diameter, hair density, and proportion of anagen-to-telogen and terminal-to-vellus hair. Physician's global assessment and patient satisfaction were also recorded.

Results:

The results showed that at 8 and 16 weeks post-treatment, hair density increased in 66.7% and 85.8% of patients, respectively. Also, 16 weeks after the intervention was associated with a significant decrease in the number of hair shedding after combing test ($p=0.024$). Moreover, after 16 weeks, proportion of terminal-to-vellus hair was significantly increased ($p=0.047$). The mean hair diameter was also significantly increased at week 16 ($p=0.019$). Proportion of anagen-to-telogen hair significantly increased both at week 8 ($p=0.028$) and week 16 ($p=0.045$). Eighty percent of patients were satisfied with the results by stating that their hair improved or very improved at week 16. Adverse events included one case of decreased libido, one case of testicular pain, and two cases of weakness and fatigue.

Conclusion:

The oral combination of finasteride 1 mg, minoxidil 1 mg, and biotin 5 mg seems to be a safe and effective combination for treatment of AGA males with Norwood scale II-IV. The effectiveness seems to be mostly driven by objective increased duration of anagen phase. Larger controlled and randomized clinical trials in different settings and on different age and sex groups are needed to confirm results of this clinical trial.

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