

Dutasteride mesotherapy in the treatment of androgenetic alopecia

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DEAR EDITOR,

Androgenetic alopecia is a significant problem for many patients, that affects their self-esteem and overall quality of life. At a time of high demand for therapies that counteract this most common type of alopecia, a new therapeutic option in the form of micro-dose injections of dutasteride directly into the scalp has appeared. Dutasteride is a second-generation inhibitor of the enzyme 5 α -reductase, responsible for converting testosterone, the male sex hormone, into the more potent dihydrotestosterone, which contributes to the miniaturisation of hair follicles. Dutasteride lowers dihydrotestosterone concentrations by blocking type I and type II 5 α -reductase enzymes, unlike finasteride, which only blocks type II enzyme [1–3].

Intralesional administration of micro-doses of dutasteride via mesotherapy into the hairy scalp is a new therapeutic method. It allows for a concentrated action of the drug directly in the follicular area with negligible systemic absorption [1]. Although dutasteride mesotherapy is not currently registered for the treatment of androgenetic alopecia there are reports supporting the efficacy of this form of therapy without systemic adverse effects [4–6]. However, an important problem in evaluating the aforementioned reports is that they cannot be adequately verified and confirmed by the results of extensive, placebo-controlled clinical trials.

The small number of studies that have been conducted to date on the efficacy of dutasteride mesotherapy is undoubtedly a major difficulty in assessing the benefit-risk balance of this method. The lack of unequivocal recommen-

dations and standardisation of procedures has led to the problem that most of the studies performed, differ in methodology and the preparation or mixture of preparations used in the treatment. An analysis of the studies performed and their limitations is presented in Table 1.

The results of the above studies, although promising, do not allow for the creation of universal recommendations and have many limitations. Each of the studies conducted differed methodologically. The treatments differ in the number of injections repeated at different intervals. In addition, the mixture used in some of those studies often contained other substances in addition to dutasteride. Research conducted by Abdallah et al. [7] and Saceda-Corrado et al. [8] were conducted on a very small number of patients receiving dutasteride, amounting to 14 and 6 patients, respectively. Additionally, the Saceda-Corrado et al. study [8] was not placebo-controlled. In the studies conducted by Sobhy et al. [9] and Moftah et al. [10] patients were receiving injections not only with dutasteride but also with other substances such as dexpanthenol and biotin. Another study has evaluated other variables, such as the impact of metabolic syndrome on the effects of dutasteride mesotherapy treatment [4]. This makes it difficult to assess the isolated effect of dutasteride in the treatment of androgenetic alopecia. A study by Saceda-Corrado et al. [11] analysed reports from different research centres, whose methodology for conducting the study showed differences. Additionally, there are only a few reports analysing the side effects of dutasteride mesotherapy. Among the side effects described are two cases

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Table 1. Analysis of reports on the efficacy of dutasteride mesotherapy in the treatment of androgenetic alopecia

Article	Description of the study group	Description of the study and methodology	Results	Comment
Abdallah et al. [7]	The study was conducted on a total of 28 patients, including 14 receiving treatment and 14 receiving a placebo	7 injections of 2 millilitres of dutasteride solution at an interval of at least 1 week	Increased hair density in 92.9% of patients receiving mesotherapy with dutasteride compared to 7.1% of patients receiving placebo	Small study group. No significant differences in side effects in the study group and placebo group
Sobhy et al. [9]	90 patients with male pattern androgenetic alopecia	Comparison of the efficacy of injection of 0.005% dutasteride and 0.05% dutasteride solution with dexpanthenol, biotin and pyridoxine after 9 separate injections	Significant increase in the number of hair follicles in the anagen phase after using an injection of 0.05% dutasteride in vitamin solution	It is not possible to assess the effect of additional substances on differences between groups
Moftah et al. [10]	128 patients with a female type of androgenetic alopecia	2 millilitres injection of 0.05% dutasteride in a dexpanthenol, biotin, and pyridoxine solution. 12 sessions in 16 weeks	Hair improvement in 62.8% of dutasteride-treated patients versus 17.5% of placebo-treated patients	Additional substances in the preparation make it difficult to assess the effectiveness of dutasteride
Saceda-Corralo et al. [8]	6 patients with androgenetic alopecia. 5 men and 1 woman	3 treatments at 3-month intervals 1 millilitre of 0.01% dutasteride solution in each session	Improved hair density in all patients with significant improvement in two patients	A very small study group. No placebo control
Moftah et al. [4]	The study evaluated the impact of metabolic syndrome on the effects of dutasteride mesotherapy. 51 patients with the female type of androgenetic alopecia, including 26 with metabolic syndrome and 25 without metabolic syndrome. Finally, 40 patients were analysed	Intradermal injection of pure dutasteride in 0.02% solution. The treatment lasted 3 months. Initially, patients received 4 injections every week followed by 4 injections at 2-week intervals	The study showed a negative impact of metabolic syndrome on the effects of androgenetic alopecia treatment with dutasteride mesotherapy	The study evaluated the impact of metabolic syndrome on treatment, not the effect of dutasteride mesotherapy itself on the treatment of androgenetic alopecia
Saceda-Corralo et al. [11]	541 patients. Evaluation after one year is possible in 81 patients	A multicentric retrospective study. Mesotherapy with dutasteride. Patients treated with at least 6 months of follow-up were included in the study	Most patients showed improvement in scalp hair, with 33 (38.4%) showing significant improvement	A retrospective study, based on reports from various centres

of paradoxical nonscarring alopecia [1] and angioedema-like contact dermatitis [12], which occurred after dutasteride mesotherapy. There are no publications more extensively analysing the safety and potential adverse effects of dutasteride mesotherapy, although most of the available studies analysing the therapeutic effect of this method did not report the occurrence of alarming adverse effects.

Despite promising reports on the efficacy of dutasteride mesotherapy in the treatment of androgenetic alopecia, there is a conspicuous lack of extensive placebo-controlled clinical trials on the efficacy and safety of this form of therapy. In our opinion, this is an important area for research that will help standardize the procedures performed on patients. This will increase the effectiveness of the therapy and ensure that patients are properly classified for treatment which can reduce the risk of adverse effects.

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Conflict of interest

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