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# Topical finasteride in the treatment of androgenic alopecia. Preliminary evaluations after a 16-month therapy course

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The enzyme 5α-reductase (5AR), which catalyzes reduction of testosterone to the more potent metabolite dihydrotestosterone, has been assumed to play a key role in a variety of skin disorders, including acne, seborrhea, hirsutism, and androgenic alopecia (AA). Also, evidences have been provided supporting the pathogenetic relevance of higher rates of testosterone reduction at lesional level. The azasteroid finasteride, a 5AR inhibitor, is widely employed in the treatment of benign prostatic hyperplasia; by contrast, its potential role in other androgen-related conditions have been, so far, only poorly evaluated.

We present herein the results of a single-blind, placebo-controlled, 16-month trial carried out in 52 patients with AA using a 0.005% finasteride solution. The clinical outcome, in terms of both hair regrowth and balding areas reduction, seems to be encouraging, in the absence of either any evidence of percutaneous absorption of finasteride, or local/systemic untoward effects.

We also briefly review the possible pharmacodynamic and pharmacokinetic bases of the use of topically delivered finasteride in AA. (*J Dermatol Treat* (1997) 8: 189–192)

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## Introduction

Much evidence has been provided to support the hypothesis that disorders of androgen metabolism are important in the pathogenesis of a variety of skin diseases, including acne, seborrhoea, hirsutism, and androgenic alopecia.[1] An amplified response of androgen-sensitive tissues is thought to be involved through either an enhanced capacity of the intracellular receptor to bind the hormones or a higher local conversion of relatively weak androgens into more potent metabolites. In this pathogenic framework the enzyme 5α-reductase (5AR) is likely to play a cornerstone role by catalysing the reduction of testosterone to dihydrotestosterone, whose potency is nearly twice that of testosterone.[2]

On the basis of this evidence, the use of finasteride (*N*-(1,1-dimethylethyl)-3-oxo-4-aza-5α-androst-1-ene-17β-carboxamide),[3] a 5AR inhibitor, may be a rational therapeutic approach to androgen-related diseases. To our knowledge, the oral use of this drug in subjects with androgenic alopecia has been only poorly evaluated.[4–6]

The aim of this study was to assess the tolerability and efficacy of finasteride delivered topically in males and females with androgenic alopecia.

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## Patients and methods

The study group comprised 52 otherwise healthy subjects with androgenic alopecia (28 males and 24 females; aged 18 to 38 years, mean 28; Table I). No patient had received therapy for alopecia or other cutaneous or noncutaneous diseases for at least 1 month prior to beginning the protocol. Moreover, no female patient had been taking oral contraceptives during the previous year. After informed consent had been obtained, patients were randomly allocated into two study groups: 26 patients received a 0.005% solution of finasteride; the remainder received the vehicle only (consisting of 50% ethyl alcohol, 25% propylene glycol, and 25% distilled water). The identity of the treatment was concealed from the patients, according