

Treatments for Unwanted Facial Hair

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ABSTRACT

Twenty-two percent of women in North America have unwanted facial hair, which can cause embarrassment and result in a significant emotional burden. Treatment options include plucking, waxing (including the sugar forms), depilatories, bleaching, shaving, electrolysis, laser, intense pulsed light (IPL), and eflornithine 13.9% cream (Vaniqa[®], Barrier Therapeutics in Canada and Shire Pharmaceuticals elsewhere). Eflornithine 13.9% cream is a topical treatment that does not remove the hairs, but acts to reduce the rate of growth and appears to be effective for unwanted facial hair on the mustache and chin area. Eflornithine 13.9% cream can be used in combination with other treatments such as lasers and IPL to give the patient the best chance for successful hair removal.

Key Words: eflornithine, unwanted facial hair, hair removal

Unwanted facial hair (UFH) in women is a common problem, and is most often a result of ethnic background or heredity. In a small percentage of women, it may be caused by androgen overproduction, increased sensitivity to circulating androgens, or other metabolic and endocrine disorders. Approximately 22% of women are affected by the presence of UFH growth on the mustache and chin area, and this can be a source of distress, leading to anxiety, depression and a reduced quality of life.¹

It is very important to determine the underlying causes. Most are ethnic or hereditary; however, one must rule out any signs of androgen excess, e.g., an increase in body hair, irregular menstrual cycles, acne, alopecia, and seborrhea. Polycystic Ovary Syndrome (PCOS) is the most common cause of androgen excess, and 70%-80% of patients with androgen excess demonstrate hirsutism, though this sign may be less prevalent among women of Asian extraction. There is a strong familial predilection for hirsutism, primarily because the underlying endocrine disorders in this population and the factors regulating the development of hair growth have a strong genetic component.² Patients should be adequately advised of the available treatment modalities for hair removal. No single method of hair removal is appropriate for all body locations or patients, and the one adopted will depend on the character, area and amount of hair growth, as well as on the patient's age and their personal preference.

Treatment options for removing excess facial hair are limited and can vary in effectiveness, the degree of discomfort, and cost. Current methods for removing this unwanted hair include such over-the-counter methods as plucking, waxing (including the sugar forms), depilatories, shaving, and home electrolysis. Hair removal methods that could take place in a doctor's office include laser, and intense pulsed light (IPL). An additional modality is a topical cream that inhibits hair growth: eflornithine 13.9% cream (Vaniqa[®], Barrier Therapeutics in Canada and Shire Pharmaceuticals elsewhere).¹ These methods are temporary with the time of regrowth ranging from a few days to a few months. For hirsutism associated with PCOS, treatments include oral contraceptives and/or antiandrogens, such as spironolactone, cyproterone acetate, flutamide and finasteride.⁴

Eflornithine HCl 13.9% Cream

Eflornithine HCl 13.9% cream is an irreversible inhibitor of ornithine decarboxylase, an enzyme that has been associated with the prolongation of the anagen or growth phase of the hair.⁶ Consequently, it reduces the rate of hair growth for all hairs. It appears to be effective regardless of whether the unwanted facial hair is hereditary or is due to medical conditions such as an androgen excess disorder, e.g., PCOS. After 24 weeks of treatment in clinical trials, it was shown to be effective on the chin and upper lip.⁷

Technique	Body Area	Advantages	Disadvantages
Plucking	<ul style="list-style-type: none"> •Face •Eyebrows •Bikini area 	<ul style="list-style-type: none"> •Inexpensive •Regrowth can take weeks 	<ul style="list-style-type: none"> •Painful •Slow
Waxing	<ul style="list-style-type: none"> •Face •Eyebrows •Groin •Trunk •Extremities 	<ul style="list-style-type: none"> •Regrowth can take weeks 	<ul style="list-style-type: none"> •Painful •Slow •Risk of folliculitis
Depilatories	<ul style="list-style-type: none"> •Extremities •Groin •Face 	<ul style="list-style-type: none"> •Quick 	<ul style="list-style-type: none"> •Can be irritating •Regrowth in days
Shaving	<ul style="list-style-type: none"> •All areas 	<ul style="list-style-type: none"> •Easy •Inexpensive 	<ul style="list-style-type: none"> •Quick regrowth •Risk of folliculitis •Time consuming
Electrolysis	<ul style="list-style-type: none"> •All areas, but usually the face 	<ul style="list-style-type: none"> •May give permanent removal 	<ul style="list-style-type: none"> •Painful •Repeat treatments needed •Very time consuming •Expensive •Risk of scarring and skin pigment changes
Laser and Intense Pulsed Light (IPL)	<ul style="list-style-type: none"> •All areas 	<ul style="list-style-type: none"> •May give permanent hair reduction •Efficient 	<ul style="list-style-type: none"> •Painful •Repeat treatments needed •Dark hair required •Expensive •Risk of scarring and skin pigment changes •Rare reports of paradoxical hypertrichosis⁵
Eflornithine 13.9% cream	<ul style="list-style-type: none"> •Face •Neck 	<ul style="list-style-type: none"> •On stopping, regrowth can take 2 months •Minimal adverse effects •Can be used in conjunction with other treatments 	<ul style="list-style-type: none"> •Must be continued indefinitely to prevent regrowth
Antiandrogens and oral contraceptives	<ul style="list-style-type: none"> •Inhibits androgen driven hair in all areas 		<ul style="list-style-type: none"> •Takes months to show benefit •Some adverse effects •Long-term treatment required

Table 1: Advantages and disadvantages of hair removal techniques

Eflornithine, also known as difluoromethylornithine or DFMO, was synthesized in the 1970s as a potential anti-cancer drug. In 1980, Bacchi, et al. reported that this drug was effective in the treatment of African trypanosomiasis in a mouse model,⁸ and this finding later led to clinical studies in humans. In 1990, the US FDA granted marketing approval and orphan drug status for eflornithine to treat this disease. Clinical observations identified hair loss as a side-effect of eflornithine therapy and led to the development of Vaniqa®, which gained US regulatory approval in July 2001, as the first and only prescription cream clinically proven to slow the growth of unwanted facial hair in women.⁹

Pharmacokinetics

In an open-label, multiple-dose study of 10 women with excessive facial hair, Malhotra, et al. determined percutaneous absorption and the pharmacokinetics of eflornithine following topical treatment with eflornithine HCl 13.9% cream. The mean percutaneous absorption was minimal and most of what was absorbed was excreted unchanged in the urine without being metabolized by the body. The steady-state peak serum concentration was <10.44ng/ml. Trough plasma concentrations reached steady state (4.61-5.5ng/ml) after 4 days of twice-daily topical treatment. Multiple dosing had no apparent effect on disposition kinetics.¹⁰

Combination Therapy

It is a common misconception that eflornithine 13.9% cream competes with other methods of hair removal and therefore should not be used in combination with them, particularly laser and IPL treatments. However, that is not the case. Eflornithine 13.9% cream can slow hair growth and may reduce the frequency of the need for hair removal by other means.^{11,12} It is also useful in treating hair that is unresponsive to laser therapy, such as white or vellus hairs. Studies have shown that the two processes can be started simultaneously, and eflornithine treatment can continue right through laser treatments.¹ According to Azziz,² treatment should be undertaken using combination therapy, to possibly include:

1. hormonal suppression, e.g., oral contraceptives, long-acting gonadotropin-releasing hormonal analogues and insulin sensitizers
2. peripheral androgen blockade, e.g., spironolactone, cyproterone acetate, flutamide, or finasteride
3. mechanical/cosmetic amelioration and destruction of the unwanted hairs, e.g., electrolysis, lasers, IPL, depilatories, shaving, waxing
4. application of eflornithine 13.9% topical cream.

Adverse Events for Eflornithine

Skin-related side-effects such as stinging, burning and tingling are seen occasionally, particularly when eflornithine is applied to broken or abraded skin.¹³ Eflornithine offers a low degree of percutaneous absorption and low systemic exposure to eflornithine, offering a favorable clinical safety profile with minimal side-effects.^{11,14} This drug is classified as a pregnancy category C agent, so risk to the fetus cannot be ruled out. Patient Communication The results of therapy may not always be satisfactory, so it is very important to advise the patient of the available treatment modalities for temporary or permanent hair reduction. No single method is appropriate for all body locations or patients. The one adopted will depend on the character, area and amount of hair growth as well as on the patient's age and personal preferences.

Conclusion

Unwanted facial hair can cause embarrassment and lead to anxiety and depression. There are a limited number of treatments available that vary in efficacy, degree of discomfort, and cost. Eflornithine 13.9% cream, by itself or in combination with other treatments, has been shown to be effective for the treatment of UFH. Future experience will dictate the most effective niche for Vaniqa® within this family of treatments.

An adaptation of this article was recently published in Skin Therapy Letter – Family Practice Edition 1(2):6-7.

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