

SUMMARY

Hirsutism, an androgen-related increase in growth of facial and body hair may occur in women with increased androgen production or with hypersensitivity of the hair follicles to androgen stimulation.

Hirsutism may result from hereditary factors, endocrine disease, drug therapy or neoplastic causes, however in most cases there is no obvious cause.

Physical methods that remove hair have included bleaching, shaving, tweezing, waxing and chemical depilatories. All these methods result in temporary hair removal and each of them carries the risk of unwanted side effects.

Electrolysis has been the only acceptable method of permanently removing hair for several decades. However, it should only be performed by a well trained physician or cosmetician and will require multiple treatment sessions over months to years. It can be very painful, can potentially cause scars (keloid in susceptible), postinflammatory hypopigmentation or hyperpigmentation and is very time consuming.

The need for a rapid, non invasive, and effective method for hair removal has led to the development of various light and laser sources for hair removal. In an attempt to remove unwanted or excess hair, the principles of selective photothermolysis have been employed with several different laser and light devices that permit the effective treatment of

large areas of hair-bearing skin with minimal discomfort and with low risk of scarring or other complications.

The laser targets the pigment (melanin) located within the hair follicle. The light from the laser is absorbed by this pigment and the energy is converted to heat which result in thermal damage to the hair follicles without causing injury to the surrounding structures. However, because the epidermis is pigment laden, it must be protected from damage by cooling the skin surface. Also, many studies have found that early anagen represents the best time for treatment. Therefore, the best candidates for laser hair removal are patients with dark hair and light colored skin. Eradication of lighter hair colors (e.g. blonde, red and grey) is not effective, because these hair follicles contain less eumelanin. In order to treat such individuals, an exogenous carbon suspension has been placed in the follicular orifice to absorb the light.

The different available hair removal devices include the long pulsed ruby laser, long pulsed alexandrite laser, light sheer diode laser, Q switched Nd: YAG laser, pulsed intense light source and photodynamic therapy.

Antiandrogen therapy has been used primarily to treat virilization of women, hirsutism and polycystic ovarian disease. The most common antiandrogen therapies are spironolactone, estrogen-progestin oral contraceptives and dexamethasone alone or in combination. Cyproterone acetate although used worldwide is not available in the USA. Other antiandrogens include medroxyprogesterone acetate, GnRH analogues, ketoconazole, flutamide, cimetidine, bromocriptine and finasteride.

Tobical antiandrogens are also available as topical finasteride cream, and topical eflornithine cream. The treatment of hirsutism is directed toward lowering androgen bioactivity within the hair follicle. The logical strategies include diminution of exposure of the follicle to precursor androgens, reduction of intrafollicular synthesis of DHT or blockade of follicular androgen receptors.

The aim of this study is to evaluate the efficacy and safety of laser, CPA /Diane and both laser and CPA/Diane in the management of hirsutism.

A group of 36 women with hirsutism has been chosen for this purpose. Age ranged from 19 to 41 years. They were subjected to thorough history taking and medical examination, ovarian and suprarenal sonography, and serum assays for free T, 17OHP, DHEA-S, androstenedion and prolactin were performed before treatment.

Hirsutism was assessed by using the frequency of hair removal per month before and after 3, 6, and 12 months of treatment.

Patients were divided into 3 groups, group I was treated by ruby laser (694 nm) for one year, group II was treated by CPA (100 mg/d from day 5 to 14 of the menstrual cycle and EE₂ (35 µg) plus cyproterone acetate (2 mg) (Diane – 35) daily from day 5 to 25 of menstrual cycle for one year, group III was treated by CPA /Diane and ruby laser for one year.

Follow up included hirsutism assessment at 3, 6 and 12 months by using frequency of hair removal per month. Also, side effects of treatment were recorded.

The results were statistically analyzed, discussed and compared to other studies.

Previous publications have documented the effectiveness of ruby laser as well as CPA/Diane in the treatment of hirsutism. The results in this study were highly significant decrease in frequency of hair removal per month ($P < 0.01$) after 3, 6 and 12 months of laser therapy. Also in patients received CPA/Diane the results were significant after 6 months and 12 months ($P < 0.05$). In group III, the results were also highly significant at 3, 6 and 12 months ($P < 0.01$).

When group I and II were compared as regards frequency of hair removal per month, results showed significant more improvement with laser therapy (group I) after 3, 6, and 12 months. When group II and III were compared as regards frequency of hair removal per month, results showed significant more improvement with laser and antiandrogen (group III) after 3, 6 and 12 months. But the results were insignificant ($p > 0.05$) when we compared laser alone with laser and CPA/Diane after 3 and 6 months. This comparison (group I vs III) revealed significant more improvement with group III ($P < 0.05$) after 12 months of treatment.

Ruby laser therapy has side effects that were observed in 28.4% of patients in the form of burning sensation and hyperpigmentation. These side effects were tolerable, transient and tended to improve with time.

Also, side effects of CPA/Diane were observed in the form of headache, irregular bleeding, nausea, weight gain in group II and III,