



Long-pulsed 755-nm alexandrite laser equipped with a sapphire handpiece: unwanted hair removal in darker phototypes

Steven Paul Nistico¹ · Luigi Bennardo¹ · Ester Del Duca^{1,2} · Federica Tamburi¹ · Ali Rajabi-Estarabadi³ · Keyvan Nouri³

Received: 3 March 2020 / Accepted: 25 March 2020
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Dear Editor,

Laser treatments are the most effective and popular method to remove unwanted hair. Among various types of lasers, alexandrite devices have shown high efficacy with lower risk of side effects [1]. The use of alexandrite laser equipped with a sapphire handpiece for the treatment of hypertrichosis in subjects with Fitzpatrick skin types I to IV has shown significant hair reduction with low side effects [2]. Nistico et al. showed the use of sapphire handpiece enables the administration of a gradually increasing energy dose that leads to hair bulb damage and hence hair removal [2]. There are a few reports on the use of this method in subjects with darker skin phototypes (IV to VI).

The aim of this study was to evaluate the efficacy and side effects of the alexandrite laser equipped with sapphire handpiece in subjects with Fitzpatrick skin types IV to VI.

Methods

A prospective, pilot study was performed on 16 patients with unwanted hair on different body area. The Fitzpatrick skin types of patients ranged from IV to VI. A screening of secondary causes of excessive hair growth was performed. Exclusion criteria included previous laser treatments, isotretinoin use within the past year, hormonal dysfunction, pregnancy, history of hypertrophic scars, keloids, and photosensitivity. Volunteers

were asked to avoid any epilation techniques 4 weeks prior to laser hair removal. Shaving was carried out before the procedure, to permit the evaluation of follicle diameter and degree of pigmentation to set laser device parameters. All patients were treated with long-pulsed 755-nm alexandrite laser (Motus AX, DEKA, Calenzano, Italy), equipped with a special handpiece with a cooled sapphire cylinder tip (Moveo Technology, DEKA, Calenzano, Italy). Four treatments with a 4- to 6-week intervals were executed for each subject. The final evaluation was done 3 months after their last treatment. The associated pain level experienced was quantified by the subjects by using a numeric scale, ranging from 0 to 10 (0: no pain, 10: unbearable), for each session for a total score of 0–40. Hair reduction was defined by comparing the percentage of terminal hairs before and after laser treatment. The following hair reduction grading system was used to evaluate the treatment outcome: Zero indicated less than 25%; one, 25 to 50%; two, 51 to 75%; three, 76 to 90%; and four, greater than 90%.

Results

Sixteen patients (15 females, 1 male), with an average age of 31.3 years (19–46 years) including 8 subjects with skin type IV (50%), 7 subjects (43.75%) with skin type V, and 1 patient (6.25%) with skin type VI, were enrolled to the study. In total, twenty-four body areas were treated; 11 (45.8%) patients were treated in the axillary region, 7 (29.2%) on the limbs, 3 (12.5%) on the face, and 3 (12.5%) on the groins. Patients experienced a marked reduction in unwanted hair with better results obtained in the axillary and inguinal zone, with a mean reduction of hair up to 90% (Fig. 1). Only minor side effects were noted; 7 patients experienced erythema and discomfort after the sessions that lasted 3–4 days before disappearing (57% in skin types V). No dyspigmentation, scarring, cutaneous infection, and paradoxical hypertrichosis were observed.

✉ Luigi Bennardo
luigibennardo10@gmail.com

¹ Department of Dermatology, Magna Graecia University, Catanzaro, Italy

² Occupational & Contact Dermatitis Clinic, Mount Sinai Medical Center, New York, NY, USA

³ Dr. Phillip Frost Department of Dermatology and Cutaneous Surgery, University of Miami Leonard M. Miller School of Medicine, Miami, FL, USA

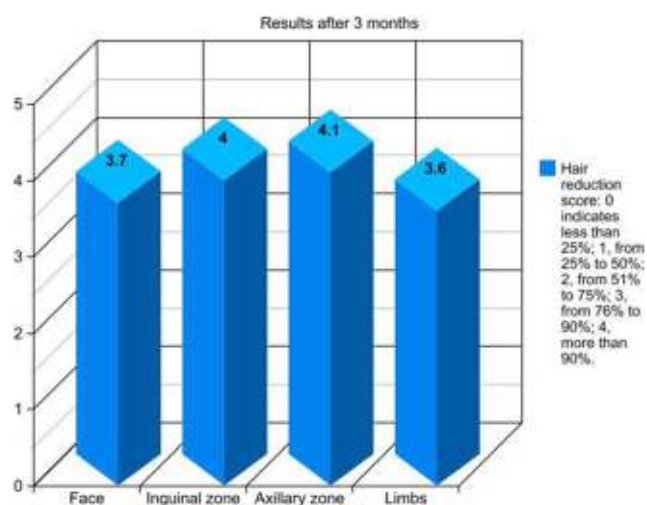


Fig. 1 Results after 3 months

The mean score of pain was 5.7 out of 40 (1.9 out of 10 on single treatment).

Conclusions

This study demonstrated that this new technique is effective and safe for hair removal in darker phototypes. The presence

of a sapphire handpiece gradually allocates the energy to the skin while sapphire contact cooling reduces the risk of serious side effects due to overheating and production of plume. A study with a larger group of patients is necessary in order to better evaluate the effectiveness of this device.

Compliance with ethical standards

Conflict of interest The authors declare that they have no conflict of interest.

References

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