

Six-month follow-up multicenter prospective study of 368 patients, phototypes III to V, on epilation efficacy using an 810-nm diode laser at low fluence

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Received: 13 January 2010 / Accepted: 4 October 2010
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Abstract Laser hair removal is currently a popular cosmetic procedure. Traditional high-fluence laser treatment for hair elimination is associated with discomfort and adverse events and it is restricted to low phototype skins. A multicenter study of hair epilation with low fluences and high repetition pulse rate using an 810-nm diode laser was carried out on 368 patients (phototypes III to V) to test its efficacy in a 6-month follow-up after five treatments on the face and various body areas. Objective and subjective assessment as well as histologies show a high index of patient satisfaction due to high efficacy of hair elimination, also proved histologically by the damage observed at hair structure level. Results obtained a high degree of patient satisfaction and a low index of adverse events. Laser epilation was well accepted regarding discomfort and was also complication-free for dark and tanned skins. Treatment

is easy to conduct and requires adapting the movement of the hand-piece to a constant speed in order to achieve high-energy deposit on tissue avoiding risks of burning.

Keywords Laser epilation · Low fluence · Diode 810 · Dark phototypes

Introduction

Laser epilation treatment has changed significantly and improved on traditional approaches, presenting increased efficacy, particularly with regard to the duration of hair clearance. Following the mechanism of *selective photothermolysis* [1], variations in results and efficacy can be explained (to a certain extent), by limitations related to risks arising due to the broad range of programs used and due to patients' skin color. The best candidates for laser epilation are subjects with light phototypes and dark hair. Also, laser epilation is limited during the summer season and on patients with tanned skin. Epilation with a 1,064-nm pulsed Nd:YAG laser shows positive effects in such candidates, but patients complain of pain during treatment. Most of them prefer to wait until the winter season or when they have lost their tan, seeking sessions of treatments that cause less discomfort (impressions collected at our clinics from patients; data not published).

A novel concept of epilation at low fluences using an 810-nm diode laser is proposed as a solution to the aforementioned setbacks. We present a 14-month follow-up of 368 patients that have received five treatment sessions on various body areas, at three different clinics.

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