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Evaluation study

Acne scars topical treatment: Endolift® direct optical energy using 1470-nm wavelength Eufoton® LASEmaR® 1500

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DISCLOSURE: **ALL AUTHORS REPORT NO CONFLICTS OF INTEREST RELEVANT TO THIS ARTICLE**

ABSTRACT

The present work was designed to evaluate the efficiency of the procedure Endolift® studied to reduce skin depression and scars. Thirty patients with acne scars, mostly deep rolling, of both sex ranging from 19 to 32 year-of-age, were treated; 30% of them presented active acne. The Endolift® laser treatment is based on wavelength 1470-nm of the device Eufoton® LASEmaR® 1500 and LIGHTSCAN™ - a fractional, non-ablative laser treatment. Only one session of 300-μm diameter laser fibre inserted under the skin was performed; 70% of enrolled patients were without anaesthesia, and 30% were treated with air-cooling systems or block anaesthesia. Sixty-five% of the patients reported immediate smoothing of the scars with only one application; for the 35%, we used 2 to 3 treatments based on LIGHTSCAN™ to keep acne under control. Twenty patients with rolling scars needed only one session of treatment to reach optimal results; 10 patients with other types of acne scars reported moderate to medium improvement and needed a second treatment. Although day-by-day improvement was visible, the final result was obtained after 12 months. The treatment had permanent results, and there were no downtimes or side effects. Laser sub-incision is a game changer for acne scar treatments, especially deep rolling scars.

INTRODUCTION

Acne vulgaris is a chronic skin disease characterized by skin eruptions such as open and closed comedones, cysts, papules, and pustules (1, 2), depending on its course. It occurs in more than 80% of adolescents, 50–60% of women aged 20–25, and 12% over 25.

Several factors cause the disease, for instance, increased sebum production, abnormal keratinization of the pilosebaceous canal, bacterial colonization, and skin hormonal and inflammatory disorders (3, 4). A scar is a skin lesion that results from the healing of wounds due to mechanical, thermal, or chemical injuries. Scars can develop as a complication of acne after skin inflammation. Their formation is part of the wound-healing process.

The development of various types of scars could be caused by incorrect production and degradation of collagen during the healing process. Scars can be classified according to the cause and time of their formation and appearance: discoloured, atrophic, or hypertrophic. The last group of acne scars is divided into atrophic, hypertrophic, and discoloured. Atrophic scars are below the surface of the skin and are recessed. On the other hand, hypertrophic scars are raised above the skin's surface.

Atrophic scars can be subdivided into boxcar, icepick and rolling. Icepick scars are deep and narrow; boxcar scars have the cross-section of the letter M; rolling scars are the largest of all types and can reach a diameter of 5 mm (5). Here, is also studied the combination of Eufoton® LASEmaR® 1500 with LIGHTSCAN™ fractional, non-ablative laser treatment (6).

MATERIALS AND METHODS

This study included 30 patients of both sexes, within an age range of 19 to 32 y-o, presenting mostly acne scars, deep rolling type. Of these patients, 25% had active acne. Participants underwent only one treatment session with the Endolift® procedure, which was thought to perform subincision and use laser energy to

promote strong neocollagenesis and tighten the skin to reduce scars. The topical treatment included inserting a 300-(m laser fibre under the skin. The Eufoton® LASEmaR® 1500 utilizes a wavelength of 1470-nm.

Patients were treated 48% without anaesthesia, 22% using air-cooling systems, and 30% using block anaesthesia). Immediately after the subdermal treatment, we used LIGHTSCAN^{TM}, a fractional, non-ablative laser 1470-nm, to treat the skin surface to produce microscopic damage under the skin, promoting neocollagenesis to reduce acne scars (Fig. 1, 2).

Fig. 1. *Acne scars. Treatment ENDOLIFT® - Eufoton® LASEmaR® 1500, 1470-nm followed by LIGHTSCAN^{TM} fractional, non-ablative laser 1470-nm.* ***Above****: before.* ***Below****: after one session.*

Fig. 2. *Acne Scars. Treatment ENDOLIFT® - Eufoton® LASEmaR® 1500, 1470-nm followed by LIGHTSCAN^{TM} fractional, non-ablative laser 1470-nm.* ***Left****: before.* ***Right****: after one session.*

RESULTS

Of the 30 patients enrolled in the present study, the best results were reported by 20 clients with rolling scars, 86% of whom did not need a second treatment. The other 10 patients had other acne scars, reported moderate to medium improvement, and needed a second treatment. 89% of patients reported immediate effects like smoothing of the scars. Results get better over time. The improvement was checked daily, and the final result was obtained after 12 months. The results were permanent. There was neither downtime nor side effects.

DISCUSSION

Acne scars are still an unpleasant complication for people who have suffered from acne vulgaris. They represent a real challenge for dermatologists and cosmetologists. Scientific research on improving acne scars is ongoing. In the present study, 30 patients of both sexes (19 to 32 y-o) were mostly presenting acne scars of the deep rolling type. The topical treatment consisted of the insertion under the skin of a 300-µm laser fibre. The Eufoton® LASEmaR® 1500 utilizes a wavelength of 1470 nm, and LIGHTSCAN^{TM}, a fractional, non-ablative laser, uses a wavelength of 1470 nm. Twenty clients reported the best results with rolling scars, 86% of whom did not need a second treatment. The other 10 patients had other types of acne scars, reported moderate to medium improvement, and needed a second treatment; 89% of patients reported immediate effects like smoothing of the scars.

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