Fractional-targeted phototheraphy

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ABSTRACT

Targeted ultraviolet B phototherapy is used in the treatment for localized variants of psoriasis. We present two cases in which we compared the efficacy of lite spot and lite brush in the treatment of psoriasis and vitiligo.

Key words: Lite spot and brush, psoriasis, targeted phototherapy, vitiligo

INTRODUCTION

Targeted ultraviolet B (UVB) phototherapy is an effective, safe, and convenient treatment modality for the treatment for localized variants of psoriasis. The most common and extensively implemented mode of delivery is the 308-nm excimer laser. Apart from excimer lasers 308 nm excimer nonlasers and nonexcimer light sources delivering UVB light are also used as targeted phototherapy.\[1\] Levia is a nonexcimer source of light which delivers in the wavelength of 300nm to 320 nm. It has a Lite spot and a Lite brush connection for use over the hairy parts of the body [Figure 1].

The term fractional is increasingly used in laser physics and many lasers now use the concept of fractional photothermolysis which basically works on the concept of microthermal zones of tissue damage with rapid reepitheliazation within 24 h.\[2\] The word fractional has a broader meaning in which the whole effort is divided into multiple small parts to achieve the determined result.

We wanted to use the concept of fractional targeted phototherapy for larger lesions of vitiligo and psoriasis. The diameter of Lite spot in the Levia device is 3 cm\(^2\) (17 x 17 mm) that can deliver a given dose over a smaller surface area. The Lite brush contains 35 bristles that target an area of diameter of 8 cm\(^2\) to treat skin lesions. Unlike lasers that deliver a coherent source of light, targeted phototherapy delivers light that can spread to the adjacent area.

CASE REPORTS

Case 1

MED with Lite spot and Lite brush was determined in a 35-year-old patient with psoriasis. The MED was 300mj [Figure 2]. The right half of a lesion was treated with Lite spot and the left half with Lite brush. The initial dose administered was 1 MED and increased by 0.5 MED every sitting and treatment was administered twice weekly. The results were compared with serial photographs at baseline and at the fifth sitting. Both the sides showed equal remission of erythema, scaling, and induration at the end of fifth sitting [Figure 3].

Case 2

MED was determined as described above in a patient with vitiligo. A lesion over the neck was selected and left half was treated with Lite spot and other half with Lite brush. Both sides showed similar pigmentation after 15 sittings [Figure 4].

DISCUSSION

UVB radiation has several effects on the skin, such as induction of alteration in cytokine production, local immunosuppression, stimulation of melanocyte-stimulating hormone, increased melanocyte proliferation, and melanogenesis. The mechanism of action of targeted phototherapy is similar to that of narrow band UVB therapy. The advantages over conventional phototherapy are focused treatment with faster response but the main disadvantage is the cost. Targeted phototherapy delivers a high amount of UV rays...
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Figure 1: Levia targeted phototherapy machine

Figure 2: MED determination

Figure 3: Treatment of psoriasis with Lite spot and Lite brush after five sittings

Figure 4: Treatment of vitiligo before and after 15 sittings

diverge following entry into skin and thus can target larger areas. Targeting very small areas may also minimize the chance of UV burn. This is a pilot project and we have planned to use this concept on a larger scale in localized psoriasis and vitiligo.

REFERENCES

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