Laser Therapy for Vitiligo

Angelo Massimiliano D'Erme1, Valeria Mateeva2, Zoulikha Zarrab3 and Torello Lotti4

1Division of Dermatology, University of Florence, Italy
2Clinic of Dermatovenerology and Allergology, Military Medical Academy Sofia, Bulgaria
3Saint-Petersburg State Pediatric Medical University, Saint Petersburg, Russia
4Chair of Dermatology, University of Rome “G. Marconi”, Rome, Italy

Abstract

Vitiligo is a common, acquired pigmentary disorder, characterized by variable-sized depigmented patches, of unknown etiology affecting 1-2% of world population without any racial, geographic or sexual predilection. The course of disease is chronic, and often progressive [1].

The current treatment options for vitiligo are not really satisfactory to the patient population and the dermatologists [2].

The current paper aims to give an overview of the effectiveness of laser treatments alone or in combination with topical treatments in the management of vitiligo lesions. At the moment the laser therapy consists of UVB at 308 nm and a UVB 311 nm narrow-band microphototherapy that are indicated for segmental and non-segmental vitiligo. UVA treatments represent a second line treatment in vitiligo even though new devices have been introduced in the market. Lastly authors report the results of recent studies for the use of other lasers in vitiligo therapy.

UVB Laser Therapy and Phototherapy

UVB laser therapy and narrow band (nb)-UVB phototherapy are suggested for vitiligo lesions that involve more than 15-20% of the body area. UVB-laser therapy represents a therapeutic option also for lesions of smaller involvement that are actively spreading on the body.

UVB-laser therapy at the wavelength of 308 and 311 nm represents a targeted therapy in the treatment of vitiligo. It represents a therapeutic option for the treatment of vitiligo resistant to treatment, in alternation or in combination with topical treatment.

The choice of narrow-band UVB-laser therapy or localized or whole-body narrow-band UVB phototherapy depends on the extension and involvement of vitiligo and the devices available.

As also reported in recent guidelines [2] they represent the first choice for localized vitiligo in particular for small lesions of recent onset and childhood vitiligo.

The combination with topical steroid or topical calcineurin inhibitors improves the clinical outcome [3,4].

As reported by Lotti et al., 0.05% betamethasone dipropionate cream plus 311 nm narrow-band UVB microfocused phototherapy give higher repigmentation rate then monotherapy with 311 nm narrow-band UVB [5].

The use of targeted laser therapy has the advantage to avoid the patient aging and the risk of skin cancer associated with total body irradiation.

Furthermore, also the side effects of the treatment, as erythema and burning, are localized to a confined area.

UVA Laser Therapy and Phototherapy

In the last decade, light therapy lamps with halogen-metal band confined to the very high irradiance UVA1 (340–400 nm) has experienced a growing interest and use in dermatology.

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Other Laser Treatments

Fractional CO$_2$ laser is a new method that can be proposed in the management of vitiligo in selected patients who do not have received any evident benefit from previous treatments [2].

Either alone or in combination with other treatments, fractional CO$_2$ laser treatment has been reported to induce benefits in repigmentation of vitiliginous lesions.

The association of NB-UVB with fractional CO$_2$ laser has been reported to be effective in refractory areas as reported in a small randomized left–right comparative trial [9].

In widespread vitiligo, where repigmentation therapy is ineffective, depigmentation can also be obtained by using a Q-switched ruby laser, alone or in combination with methoxyphenol [2].

References