Vitiligo: NB UVB Treatment advantage

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Abstract

Vitiligo is a skin disorder in which the natural color of the skin is lost and white patches are seen on various parts of body. In India, patients of vitiligo are found in almost all the states. In case of Vitiligo the social stigma is cause of worry. The normal life of patient is disturbed due to cosmetic disfigure. There are many treatment modalities in practice. Allopathic, Homeopathic, Ayurvedic, Surgical treatment and phototherapy. Recently, narrowband ultraviolet B (NB-UVB) is found to be more effective in the treatment of vitiligo. We have studied the advantages of phototherapy.

KEYWORDS : Vitiligo, NB UVB, Phototherapy

INTRODUCTION

Vitiligo has proven itself as a cosmetically disfiguring condition in which the skin colour is lost and white patches are seen on various parts of body. Losing the skin colour is termed as depigmentation and it should be regained to normal. The process is called repigmentation. Eventhough claimed so far there is no therapeutic full solution as on date. [14] Some treatment may induce good results in most patients. The disease can be successfully treated with various medical options. Both Full body exposure that is nonfocused or targeted to affected area focused narrowband ultraviolet B phototherapy represents the current treatment of choice. The advantage to note is minimum side effects and good clinical results. The treatment approaches are many including topical treatment, oral drug treatment, surgical methods which consist of transplantation methods called skin grafting. It is generally recommended for stable vitiligo after medical therapy has failed. Using NB UVB the patients are treated to initiate melanin formation that gives colour to the skin.

MATERIALS AND METHODS

Phototherapy is used for a wide variety of skin diseases. There has been considerable progress in cellular and cutaneous photobiology leading to improved understanding of different diseases curable with phototherapy and their treatment. However, the developments in phototherapy have been comparatively slow, as reflected in a recent publication that "developments in phototherapy have not kept pace with scientific progress, as has been the case with radiotherapy"[1] Nevertheless, the last two decades have seen significant technological advances, expanding the options while treating a patient who needs phototherapy.

The most important of these advances have been narrowband ultraviolet B (UVB) (311 nm) phototherapy and, more recently, targeted phototherapy [2],[3],[4].The main advantages of phototherapy are as follows Exposure of involved areas only and sparing of uninvolved areas, thus minimizing acute side effects such as erythema and long-term

risk of skin cancer over unaffected skin. Quicker delivery of energy and thereby shortened duration of treatment. Delivery of higher doses (super-erythemogenic doses) of energy because uninvolved areas are not exposed, higher doses of energy can be delivered selectively to the lesions, thereby enhancing efficacy and achieving faster response. This has been claimed to shorten duration of treatment, leading to less frequent visits to clinic, and thereby lessen the inconvenience for the patient. The maneuverable hand piece allows treatment of difficult areas such as scalp, nose, genitals, oral mucosa, ear, etc. Easy administration for children as delivery is hand-held. Targeted phototherapy machines occupy less space. Most targeted phototherapy devices (laser or nonlaser type) emit radiation in the UVB range, with peak emission in the narrowband wavelength (around 308-311 nm), while some light-based nonlaser machines emit UVA radiation also. Hence mechanisms of action of targeted phototherapy systems are similar to those in conventional UVB/UVA therapy.[7],[8],[9],[10] UV light has been shown to have several effects on both epidermal and dermal cells, which explains its efficacy in treatment of cutaneous diseases such as psoriasis, vitiligo, and lymphoma. UVB radiation has been previously shown to induce DNA damage and pyrimidine dimer formation. Apoptotic mechanisms may be involved in the destruction of susceptible epidermal and dermal cells by UV light. UVB radiation has several effects on skin, such as induction of alteration in cytokine production, local immunosuppression, stimulation of melanocyte-stimulating hormone, increased melanocyte proliferation, and melanogenesis. UVB radiation also enhances production of vitamin D metabolites, which stimulate melanogenesis. UVA radiation may also produce similar effects. Targeted phototherapy may induce all these effects in a more aggressive way, because of delivery of super erythemogenic doses of radiation.[4],[5],[6] It has also been suggested that their enhanced efficacy may be due to their ability to deliver the energy to deeper dermal levels, which is expected and targeted therapy may therefore affect hidden target cells such as melanocytes and thereby helping to acquire repigmentation. [6] Other forms of targeted light therapy have been introduced, such as IPL therapy with wavelength of 304 nm (excilite: Deka) and 308 nm (Pxlite). These machines are less bulky, cheaper, and have a comparatively larger treatment surface in contrast to excimer laser.

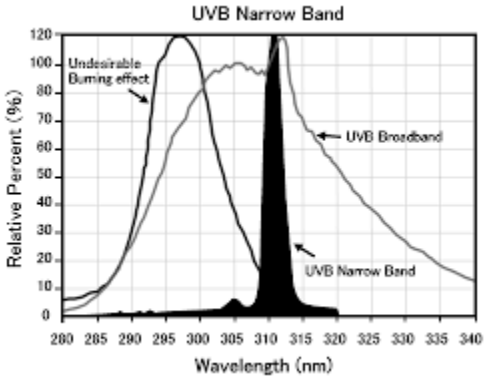
OBSERVATIONS

Several studies have been published which demonstrate their efficacy. In a pilot study of excimer light in 37 patients of vitiligo, Leone et al, [11] obtained initial repigmentation in the first 8 treatments and excellent repigmentation in 50% of patients at 6 months. Some patients who had not previously responded to narrowband UVB therapy were also found to respond. The results were comparable to excimer laser and superior to narrowband phototherapy. Another study demonstrated the efficacy of excimer light in a number of UV-responsive conditions such as palmoplantar psoriasis, atopic dermatitis, and alopecia areata. [12] IPL was also shown to induce apoptotic and immunohistochemical changes in psoriatic skin.[13] Thus excimer light is a promising, effective, and cheaper alternative to excimer laser.

RESULT AND DISCUSSION

NB UVB is widely acceptable therapy for treatment of skin disorders like vitiligo. It is being used in different parts of the world for the treatment. Many companies are catering

to the need of phototherapy unit. It may not be 100% useful in each and every type of vitiligo but for certain type the results are promising. The treatment is free of side effects and its cost is also affordable. Many other skin diseases are also curable using NB UVB.



[Figure Ref.: Daavlin.com A manufacturer of phototherapy unit The unit is available at Darpan Skin Care and Clinic Dr.S.S.Arsad Akola]

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