

Research Article

The efficacy of Narrow-Band Ultraviolet-B Therapy on Vitiligo patients

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Abstract

Background: Vitiligo is an acquired depigmentation disorder of great cosmetic importance, affecting 1% of the general population. Photochemotherapy is the most commonly used treatment modality in vitiligo, but is associated with many short and long-term side-effects. Narrow-band ultraviolet B (NB-UVB) therapy has been reported to be an effective and safe therapeutic option in patients with vitiligo. **Aim of work:** to explore the efficacy and safety of NB-UVB therapy in vitiligo patients. **Patients and methods:** twenty patients (eight males and twelve females), aged 15-56 years, with vitiligo, were treated twice weekly with NB-UVB phototherapy for a maximum period of 6 months. **Results:** At the end of 6 months, fourteen of twenty patients achieved more than 75% repigmentation, whereas 4 patients showed 50% repigmentation and 2 patients showed 25% repigmentation after treatments. Adverse effects were limited and transient. **Conclusion:** NB-UVB therapy is effective and safe in patients with vitiligo. Long-term follow up is required to establish the stability of repigmentation. Short-term adverse effects of NB-UVB include burning, pruritus and xerosis.

Keywords: Vitiligo, Narrow-band ultraviolet, safe therapeutic

Introduction

Vitiligo is the most frequent pigmentary disorder, it is an acquired, idiopathic, and progressive skin disease characterized by sharply demarcated depigmented lesions on any part of the body. It can also affect hair and mucosal areas such as mouth and genitalia.^[1]

Vitiligo occurs worldwide, it is known that its prevalence varies between races. Recent studies have revealed the prevalence from 0.06-2.28%.^[2]

Despite continued progress towards an elucidation of the genetic and immune-pathologic pathways in vitiligo, a definitive cure remains elusive. Vitiligo is clearly more noticeable in darker races and can be a source of considerable psychologic distress and social isolation. In some cultures, such as ours, there is marked stigma associated with vitiligo, thus challenging the dermatologist with effective management^[3]

Phototherapy has been used in treatment of vitiligo for several years, it is appropriate for extensive vitiligo, especially active one.^[4]

It is related to lesional location, while face and neck lesions show good responses to phototherapy, acral lesions are resistant^[5].

Anbar and his colleagues showed that response to UVB was better in earlier lesions especially lesions on the face, trunk and limb.^[6]

Patient and methods

The study was conducted on 20 patients diagnosed clinically and by Wood's light examination as vitiligo. Patients were recruited from those attending the out-patient clinic of Dermatology, STDs and Andrology Department, Minia University Hospital. The patients were treated twice weekly with NB-UVB phototherapy for a maximum period of 6 months. Starting with a dose of 0.21 J/cm² and then increased by 20% every session till

minimal erythema dose is achieved (MED). The target dose was the one that induce mild tolerable erythema which disappeared the next day of the sessions. The erythema was evaluated every session and no NB-UVB exposure was allowed if erythema was still present at the time of the session.^[6]

All patients will be subjected to, History talking (age, sex, duration, family history, any medical condition or systemic diseases, drug intake), detailed clinical examination, Wood's light examination, Photography and Detect the pattern of repigmentations (perifollicular, marginal or diffuse).

Results

The present study was conducted on 20 patients diagnosed as vitiligo. Patients were selected from the Dermatology Out-patient Clinic, Minia University Hospital. Eight patients (40%) were males and twelve patients (60%) were females. The age of patients at the time of the examination ranged from 15 to 56 years old, with a mean \pm SD of 30 ± 14.6 years.

At the end of 6 months, fourteen of twenty patients achieved more than 75% repigmentation, whereas, 4 patients showed 50% repigmentation and 2 patients showed 25% repigmentation after treatments. Repigmentation sites showed an excellent color match. The response to therapy was correlated with the sites of involvement, duration of disease, and compliance to therapy.

Adverse events were limited and transient. The adverse effects were minimal and none of the patients required the suspension or discontinuation of therapy. Four patients (20%) reported lesional burning/pruritus and three (15%) complained of xerosis with thickening of lesional skin. These effects were mild and resolved on tapering the irradiation dose or with the topical application of an emollient.

Discussion

Vitiligo is an acquired disease with a variable course. It is characterized clinically by well-defined depigmented macules or patches thought to occur secondary to melanocyte dysfunction and loss. It is the most common depigmentation disorder, affecting approxi-

mately 0.5 to 2.0% of the population and has no predilection for gender or race.^[7]

Treatment with NB-UVB (311nm) is considered a first-line option for vitiligo. It dispenses the combined use of an oral psoralen, thus freeing patients of ocular and gastrointestinal adverse events related to this drug.^[8]

The exact mechanism of action of NB-UVB in vitiligo is unknown. The predominant type of repigmentation after NB-UVB is perifollicular. Therefore, it is at least theoretically justified to believe that it has some relation to the melanocyte reserve in the outer root sheath. A two-step effect of NB-UVB has been proposed both of them may occur simultaneously. There is immunomodulation (local as well as systemic), leading to down regulation of immune attack against the melanocytes. Subsequently, the melanocytes are stimulated to migrate to the epidermis and synthesize melanin.^[9]

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Adverse events were limited and transient. The adverse effects were minimal and none of the patients required the suspension or discontinuation of therapy. Scherschun et al., was in agreement with our study reported that 7 patients treating vitiligo with NB-UVB administered as monotherapy two times a week. Five of seven patients achieved more than 75% repigmentation with a mean of 19, whereas the remaining two patients showed 50% and 40% repigmentation after treatments, respectively.^[10]

Four patients (20%) reported lesional burning/pruritus and three (15%) complained of

xerosis with thickening of lesional skin. These effects were mild and resolved on tapering the irradiation dose or with the topical application of an emollient. It has been suggested that the best results may be achieved by initiating NB-UVB in the early stages of the disease process.

Conclusion

NB-UVB therapy is effective and safe in patients with vitiligo. Long-term follow up is required, however, to establish the stability of repigmentation. Short-term adverse effects of NB-UVB include burning, pruritus, and xerosis.

To therapy is an important treatment modality in dermatology. The most common dermatological indications for NB-UVB include psoriasis, atopic dermatitis and vitiligo; however, it has been found to be an effective and well-tolerated treatment option in various other dermatoses. The efficacy of NB-UVB phototherapy compares favorably with other available photo (chemo)therapy options and its efficacy is further augmented by a number of topical and systemic adjuncts. The long-term safety of NB-UVB phototherapy remains to be fully elucidated; however, available data now suggest that it is safe and well-tolerated. The objective of this review was to summarize the current understanding of the safety and efficacy of NB-UVB phototherapy in dermatology.

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