Case Report: Efficacy of Narrow Band UVB In Vitiligo

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ABSTRACT

Vitiligo is one of the pigmentary disorders. It is characterized by well demarcated depigmented patches which can be embarrassing to patients. There are different modalities of treatment and these include topical agents (steroids, antioxidants, biologics), systemic agents (steroids, antioxidants, biologics) and light therapies (Psoralen plus UVA, Narrow band UVB, Excimer lasers). We report a case of segmental vitiligo in a 20-year-old female treated with narrow band UVB (NB-UVB).

INTRODUCTION

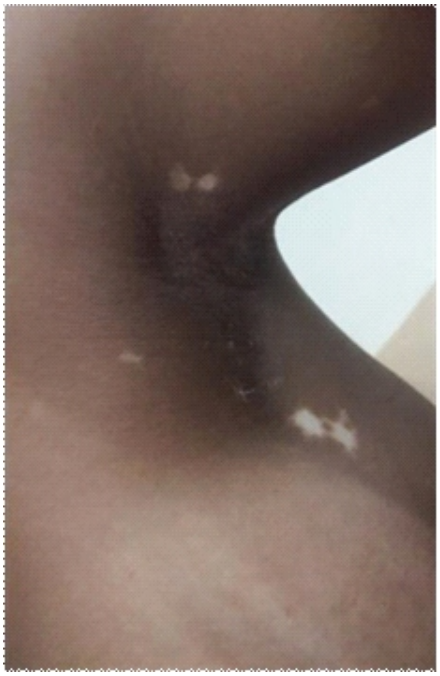
Vitiligo is a pigmentary skin disorder characterized by asymptomatic patchy loss of pigmentation from skin, hair, mucous membranes, eyes due to a slow destruction and progressive decrease in number of melanocytes in involved areas.[1] Vitiligo accounts for 2-6% of outpatient dermatological consultations.[2,3]

Modalities of treatment of vitiligo vary and the aim of these treatment modalities is repigmentation of the vitliginous skin. These modalities of treatment are medical, surgical and phototherapy with different degrees of efficacy.[5,6] Phototherapy modality includes sunlight plus UVA (ultra-violet A or PUVA-Sol), psoralen plus UVA (PUVA), broadband ultra-violet B (BB-UVB), narrowband UVB (NB-UVB) and excimer laser.[4,6] Narrowband UVB is polychromatic and uses wave lengths in the 311-315 nm spectrum with a peak emission at 311nm.[4,9] We present the case of a 20-year-old female treated with narrowband UVB (NB-UVB).

CASE REPORT. Miss AA is a 20-year-old female. She presented at the dermatology outpatient clinic of the Lagos State University Teaching Hospital with a month's history of asymptomatic depigmented patches on her left breast, left armpit. Patches were said to be increasing in number. There was no preceding skin lesion and this was the first time that, she was having these lesions. She had no family history of a similar skin disease and she was not a known diabetic nor did she have a thyroid disease.

Physical examination revealed multiple depigmented patches with normal skin texture and sensation in the left armpit, left mammary gland (T1, T2 dermatome, figure 1). Body surface involvement was adjudged to be less than 1%. There was no anterior neck swelling nor any evidence of pallor on physical examination. A clinical diagnosis of segmental vitiligo was made. A fasting blood sugar, full blood count and screening for autoimmune thyroid disease were requested for. Results of blood sugar and complete blood counts were normal. Due to limited resources, screening for autoimmune thyroid disease could not be done. Vitix gel, an antioxidant (vitamin A, vitamin C and zinc) was recommended. Also, NB-UVB was commenced at 200mJ/cc^2 (1minute) initially over 60 seconds on each affected area twice a week was commenced. The duration was gradually increased to 100 seconds. She had a total of 42 sessions with significant improvement re-pigmentation (about 75%). Re-pigmentation was better and faster in the axillary lesions.

Segmental vitiligo: breast and armpit



BEFORE TREAMENT

AFTER 42 SESSIONS OF NBUVB

BEFORE TREAMENT

AFTER 42 SESSIONS OF NBUVB

Discussion

Vitiligo is an uncommon pigmentary disorder caused by destruction and depletion of melanocytes.[1-3] Typically, the aim of treatment in vitiligo, is to restore melanocytes and thereby repigment the skin. Modalities of treatment in vitiligo include medical, surgical and phototherapy.[4,5] Phototherapy is not a widely available treatment modality in Nigerian clinics.

Diverse phototherapy options are available including narrowband UVB (NB-UVB).[4,6] Narrowband UVB was first used in the treatment of vitiligo in 1997.[7] In an experimental model for repigmentation of vitiligo patches, NB-UVB treatment was found to result in proliferation, migration, and differentiation of melanocyte precursors with a resultant increase in the number of melanocytes in the hair follicles and in the epidermis thus resulting in repigmentation.[8]

NB-UVB is polychromatic wave with a peak emission at 311nm.[6,9] A fixed dosing protocol initiated at 200 mJ/cm^2 regardless of skin type is recommended.[10] Often 18–36 exposures are necessary before assessing treatment response. A lack of response is said to occur in those who fail to respond after a minimum of 48 NB-UVB sessions.[10]

A regime of twice-weekly NB-UVB therapy for 12 months results in repigmentation of 75% or more of the affected area.[7] Our patient was treated twice weekly over a 9 month period with about 75% repigmentation. The longer the duration of phototherapy the more effective it is and so a durations of 6 to 12 months is usually recommended.[11]

In a review article by Bae et al on repigmentation based on anatomical site, repigmentation after 6 months was best on the face and neck followed by the trunk then the extremities.[11] They also, found the hands and feet not to repigment.[11] The authors were of the opinion that, disease activity, autoimmune state, large involved body surface area, and presence of poliosis influence repigmntation.[11] Our patient's lesions were mostly on the trunk but we did observe that, the armpit repigmented better than the breast. This maybe as a result of regional variation of hair follicles in these areas.

Phototherapy requires frequent clinic visits, treatment durations of months to years, sometimes without the anticipated repigmentation. This variable end result (repigmentation) makes the treatment of vitiligo a challenge. Thus patient adherence and clinician confidence are important for a successful phototherapy outcome. We have presented this case to show the efficacy of this new treatment modality at our clinic.

Conclusion

Phototherapy (NB-UVB) is an effective treatment modality for vitiligo. Lesions on the proximal extremities appear to repigment better than lesions on the breast.

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