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# The Decline of PUVA Therapy in Vietnam: Effective Treatment of Narrow Band UVB in Vietnamese Vitiligo Patients

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## Abstract

**AIM:** To examine the efficacy and safety of Narrowband ultraviolet B (NB-UVB) in Vietnamese vitiligo patients.

**METHODS:** We recruited thirty-one patients (14 males, 17 females), aged from 7 to 67 years, with both segmental vitiligo (SV) and non-segmental vitiligo (NSV), treated three times weekly with NB-UVB. The starting dose for adults from 15 years old and children less than 15 years old was 200 mJ/cm<sup>2</sup> and 150 mJ/cm<sup>2</sup>, respectively, with 50 mJ/cm<sup>2</sup> and 20 mJ/cm<sup>2</sup> dose increments at each subsequent visit, respectively, until mild erythema lasting less than 24 hrs reported by patient, given for a period of 6 months. Response to therapy was assessed based on VASI score changes.

**RESULTS:** Based upon our results, 38.7% (12/31) of patients achieved a very good response of more than 50% VASI changes, 41.9% (13/31) obtained a good response (VASI changed from 25 to 50%). Total good and very good response to therapy significantly increased with prolonged treatment, increasing from 19.4% to 64.5% and 80.6% after 2, 4 and 6 months, respectively. Localised NSV patients obtained good and very good response significantly more frequently than generalised NSV (55.6% versus 18.2%). Adverse effects were minimal, of which one case developed herpes simplex, and 4 cases reported mild photo burn reaction which completely disappeared after adjusting the dose.

**CONCLUSION:** NB-UVB therapy is an effective and safe tool in the management of Vietnamese vitiligo patients.

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**Keywords:** Vitiligo; NB-UVB; PUVA; Phototherapy

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## Introduction

Vitiligo is a common, chronic, acquired cutaneous de-pigmentation disorder with *serious emotional and psychological consequences* [1], [2]. There are many possible conventional or unconventional therapeutic choice for the treatment [3], [4]. Narrow-band ultraviolet B (NB-UVB) is one of the best treatment modality for vitiligo because of its safety, effectiveness and non-evasive nature, promoting stabilisation of the depigmenting process and stimulation of residual follicular melanocytes [5].

The present study aims to examine the efficacy and safety of NB-UVB therapy in Vietnamese vitiligo patients, attending the Vietnam National

Hospital of Dermatology and Venereology from October 2016 to September 2017.

## Methods

A total of 31 vitiligo patients (14 males, 17 females; 28 with Fitzpatrick skin's type IV and only 3 patients with Fitzpatrick skin's type III), mean age 30 years old. The majority of patients (29/31) had NSV, and only 2 patients had SV.

Local NB-UVB 311 nm irradiation was indicated for vitiligo patients with 2% and less than 2% body surface involved (12 patients). Whole body NB-

UVB 311 nm irradiation was indicated for those with more than 2% body surface involved (19 patients). Patients were treated with thrice-weekly exposures on non-consecutive days. The starting dose for adults from 15 years old and children less than 15 years old was 200 mJ/cm<sup>2</sup> and 150 mJ/cm<sup>2</sup>, respectively, with 50 mJ/cm<sup>2</sup> and 20 mJ/cm<sup>2</sup> dose increments at each subsequent visit, respectively, until mild erythema lasting less than 24 hrs reported by patient, given for a period of 6 months. The response to NB-UVB therapy was examined based on changes of vitiligo area severity index (VASI) after treatment, which took into account of both percentage of re-pigmentation and the reduction of lesion's area [6].

## Results

After 6-month treatment, 38.7% obtained a very good response, 41.9% patients achieved a good response, the proportion of poor, very poor and no response was equally and accounted for only 6.5% as shown in Figure 1.



Figure 1: A case of 10 years old male with very good response to therapy: (a) before treatment, (b) after 2 months -VASI decreased 16.4%, (c) after 4 months - VASI decreased 58%, (d) after 6 months VASI decreased 95%

Association between response to therapy and the duration of the treatment was shown in Figure 2.

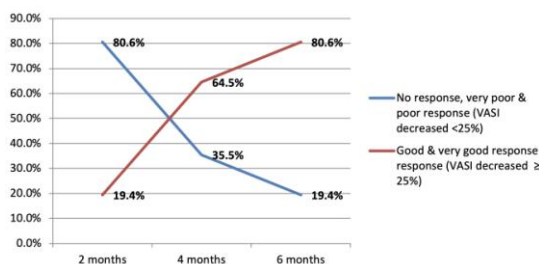


Figure 2: Association between response to therapy and the duration of the treatment

Among 31 patients, total good and very good response to therapy were significantly associated with

prolonged treatment, increasing from 19.4% to 64.5% and 80.6% after 2, 4 and 6-month treatment, respectively. Association between response to therapy and localised or generalised NSV was shown in Figure 3.

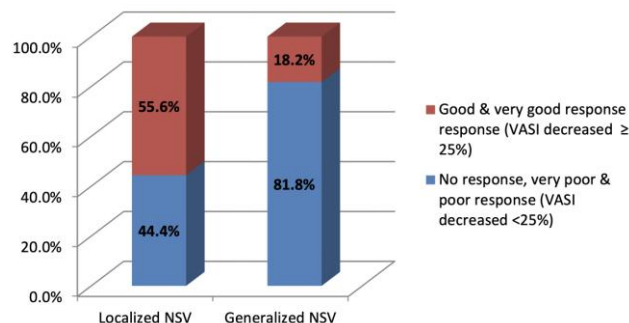


Figure 3: Association between response to therapy and localised or generalised NSV

Total good and very good response to therapy was observed in localised NSV significantly more frequently than in generalised NSV patients (55.6% versus 18.2%). This difference is statistically different.

In our study, good and very good response to therapy significantly increased with prolonged treatment and was observed in localised NSV significantly more frequently than in generalised NSV patients, which are consistent with previous studies [7], [8], [9], [10]. The actual good and very good response rate to therapy will properly be higher if the evaluation time is longer than 6 months. Adverse effects in our study were minimal which is similar to that reported in the literature.

In conclusion, our study proves that NB-UVB therapy is an effective and safe tool in the management of Vietnamese vitiligo patients. Further study is recommended to prolong the treatment duration and follow up the stability of re-pigmentation.

## References

1. Valle Y, Korobko I, Sigova J, et al. Patient-reported outcomes: A 5-year long study reveals previously unreported therapeutic, demographic, socio-economic, and other correlations in vitiligo. *Dermatologic Therapy*. 2018; 31:e12620. <https://doi.org/10.1111/dth.12620> PMID:30253018
2. Taïeb A, Meurant JM. Should we prioritise psychological interventions in the management of vitiligo?. *Journal of the European Academy of Dermatology and Venereology*. 2018; 32(12):2053-4. <https://doi.org/10.1111/jdv.15297> PMID:30488996
3. Gianfaldoni S, Tchernev G, Lotti J, Wollina U, Satolli F, Rovesti M, França K, Lotti T. Unconventional Treatments for Vitiligo: Are They (Un) Satisfactory?. *Open access Macedonian journal of medical sciences*. 2018; 6(1):170. <https://doi.org/10.3889/oamjms.2018.038> PMID:29484020 PMCid:PMC5816295
4. Lee BW, Schwartz RA, Hercogová J, Valle Y, Lotti TM.

- Dermatologic therapy supplement devoted to vitiligo. *Dermatol Ther.* 2012; 25:S44-S56. <https://doi.org/10.1111/dth.12006> PMID:23237038
5. Tawfik YM, Abd Elazim NE, Abdel-Motaleb AA, Mohammed RAA, Tohamy AMA. The effect of NB-UVB on noncultured melanocyte and keratinocyte transplantation in treatment of generalized vitiligo using two different donor-to-recipient ratios. *J Cosmet Dermatol.* 2018; 00:1-9. <https://doi.org/10.1111/jocd.12759>
6. Sehwat M, Arora TC, Chauhan A, Kar HK, Poonia A, Jairath V. Correlation of Vitamin D Levels with Pigmentation in Vitiligo Patients Treated with NB-UVB Therapy. *ISRN Dermatol.* 2014; 2014:493213. <https://doi.org/10.1155/2014/493213> PMID:25006488 PMCID:PMC4005019
7. Arca E, Taştan HB, Erbil AH, Sezer E, Koc E, Kurumlu Z. Narrow-band ultraviolet B as monotherapy and in combination with topical calcipotriol in the treatment of vitiligo. *The Journal of dermatology.* 2006; 33(5):338-43. <https://doi.org/10.1111/j.1346-8138.2006.00079.x> PMID:16700666
8. Anbar TS, Westerhof W, Abdel-Rahman AT, El-Khayyat MA. Evaluation of the effects of NB-UVB in both segmental and non-segmental vitiligo affecting different body sites. *Photodermatology, photoimmunology & photomedicine.* 2006; 22(3):157-63. <https://doi.org/10.1111/j.1600-0781.2006.00222.x> PMID:16719871
9. Kumar YH, Rao GR, Gopal KV, Shanti G, Rao KV. Evaluation of narrow-band UVB phototherapy in 150 patients with vitiligo. *Indian Journal of Dermatology, Venereology, and Leprology.* 2009; 75(2):162. <https://doi.org/10.4103/0378-6323.48662>
10. Majid I. Efficacy of targeted narrowband ultraviolet B therapy in vitiligo. *Indian journal of dermatology.* 2014; 59(5):485. <https://doi.org/10.4103/0019-5154.139892> PMID:25284856 PMCID:PMC4171919