

DOI: 10.4274/jtad.galenos.2020.40085

J Turk Acad Dermatol 2020;14(4):112-114

The Evaluation of Narrowband Ultraviolet B Therapy in Neurodermatitis and Idiopathic Pruritus Patients

Özge Aşkın, Sera Nur Yücesoy, Tuğba Kevser Üstünbaş Uzunçakmak, Burhan Engin

Istanbul University Cerrahpasa-Cerrahpasa Faculty of Medicine, Department of Dermatology, Istanbul, Turkey

ABSTRACT

Background: Pruritus and neurodermatitis are very frequent diseases that usually require multiple treatment approaches. Narrowband ultraviolet B (UVB) therapy is one of the effective and safe treatment option for pruritus and neurodermatitis that are resistant to topical treatment. This study aims to evaluate treatment responses of narrowband UVB phototherapy in patients diagnosed with neurodermatitis and idiopathic pruritus.

Materials and Methods: Twenty-two patients diagnosed with idiopathic pruritus and 16 patients diagnosed with neurodermatitis at the Department of Dermatology in Cerrahpasa Faculty of Medicine were included in this study. Patients were evaluated at the end of phototherapy sessions.

Results: The mean age of patients diagnosed with idiopathic pruritus and neurodermatitis were 58.6 and 50.6 respectively. The mean decrement in pruritus score following narrowband UVB therapy was 53.5% in idiopathic pruritus patients and 65% in neurodermatitis patients. There were no significant relation between phototherapy response and age, gender, duration of disease and number of therapy sessions in both groups.

Conclusion: The narrowband UVB is safe and effective treatment option both in pruritus and neurodermatitis patients.

Keywords: Narrowband ultraviolet B, Neurodermatitis, Idiopathic pruritus

Introduction

Pruritus is a very frequently seen dermatological condition which usually has no underlying reason. Pruritus can be seen secondary to the dermatological or systemic conditions. Phototherapy is one of the treatment options especially in widespread pruritus cases. Pruritus is generated by signals carried to spinal cord via cutaneous receptors. Ultraviolet (UV) light modifies signaling of cutaneous receptors so that sensation of pruritus decreases [1]. Neurodermatitis is dermatologic condition that results from psychogenic factors. It is mostly seen in female patients [2]. It usually has sudden onset and severity

increases gradually overtime. The pruritus due to neurodermatitis usually increases at night and excoriations due to scratching are visible at reachable sites of body. Narrowband UVB therapy is also among treatment options in widespread neurodermatitis cases. Previous studies showed that narrowband UVB is effective, tolerable and safe treatment method. Narrowband UVB is preferred more than UVA treatment since it lacks side effects of psoralen usage, can be used in children, pregnant patients and patients with liver and/or kidney failure. This study aims to evaluate narrowband UVB treatment response in patients diagnosed with idiopathic pruritus and neurodermatitis.



Address for Correspondence: Özge Aşkın MD, Istanbul University Cerrahpasa-Cerrahpasa Faculty of Medicine, Department of Dermatology, Istanbul, Turkey

Phone: +90 530 370 70 17 **E-mail:** ozgee_karakus@hotmail.com **ORCID ID:** orcid.org/0000-0003-1413-9436

Received: 19.11.2020 **Accepted:** 23.11.2020

©Copyright 2020 by the Society of Academy of Cosmetology and Dermatology / Journal of the Turkish Academy of Dermatology published by Galenos Publishing House.

Materials and Methods

Thirty-eight patients diagnosed with neurodermatitis and idiopathic pruritus between 01.09.2018 and 01.05.2020 at our clinic were included in the study. These patients received 2-3 session narrowband UVB treatment per week. Demographical features of patients, duration of disease, decrement in pruritus scores of patients were all evaluated. Approval of the Cerrahpasa Faculty of Medicine Ethics Committee (IUC date and no.: 11/09/2020-118656) and informed consents of all participants were obtained before the study.

Statistical Analysis

Pearson correlation test and independent t-test were used for comparison. P values less than 0.05 were considered statistically significant.

Results

The data of the patients participated in the study are listed in Table 1 and 2. The study involved 22 patients diagnosed with idiopathic pruritus, 11 being females and 11 males, and 16 patients diagnosed with neurodermatitis, 11 being females and five males. The mean age of diagnosis of the patients with idiopathic pruritus was 58.6 ± 15.2 and that of the patients with neurodermatitis was 50.6 ± 16.8 . The average narrowband UVB phototherapy session number of the patients with idiopathic pruritus was 22.5 ± 4 whereas that of the patients with neurodermatitis was 24.5 ± 5.3 . As for the percentage drop in the complaints of the patients with idiopathic pruritus after the UVB phototherapy, there was recorded a decrease of $53.5 \pm 25.7\%$. That decrease was $65.1 \pm 22\%$ for the patients with neurodermatitis. There was no significant correlation between the phototherapy response and the disease duration, gender, age and session number of the patients diagnosed with idiopathic pruritus. Similarly, no significant correlation was recorded between the phototherapy response and the disease duration, gender, age and session number of the patients diagnosed with neurodermatitis.

Age, years, mean (min-max)	58.6 (25-82)
Number of NB-UVB therapy sessions, mean (min-max)	22 (16.0-32.0)
Sex, %	
Female	11 (50%)
Male	11 (50%)
Duration of disease, years, mean (min-max)	6.5 (1.0-32.0)
Decrement in pruritus score, %, mean (min-max)	53 (20-100)
NB-UVB: Narrowband ultraviolet B, min: Minimum, max: Maximum	

Discussion

Neurodermatitis is a dermatological disease more frequently seen in females after puberty. Though such triggering factors as trauma can play a role in the etiology, the patients generally report an insidious onset. Idiopathic pruritus indicates the somatic itchings initiated by psychogenic factors which can not be related to organic causes. Narrowband UVB therapy is one of the options which can be preferred for the treatment of patients diagnosed with neurodermatitis and pruritus. The initial dosage in the treatment and the dosage increments are determined according to the either Fitzpatrick skin phototype or the minimal dosage that induces erythema [3]. There exists no standart protocol as yet regarding the initial dosage, treatment frequency, and dosage increments. The treatment is generally applied twice or three times a week. Whereas the duration of the treatment may vary based on its severity, 20 to 30 sessions will frequently suffice. In our clinic the average session numbers for the patients diagnosed with pruritus and neurodermatitis were 22 and 24, respectively.

Whereas the ratio of female to male patients diagnosed with idiopathic pruritus was 1, the female patients diagnosed with neurodermatitis constituted the majority of the patients as was reported in the literature [4]. The mean diagnosis age of the patients with idiopathic pruritus in our study was 58.6 whereas Seckin et al. [5] and the co-workers recorded a mean diagnosis age of 51 in their study. Moreover, the mean age of diagnosis of the patients with neurodermatitis was 50.6 in our study while mean age of diagnosis of neurodermatitis patients was 46.3 in the study conducted by Askin et al. [4]. In our study, following narrowband UVB therapy, a 53% decrement was observed in the pruritus score of idiopathic pruritus patients. Likewise, after the narrowband UVB treatments, Seckin et al. [5] also reported drops of 52.4% and 54.0% in the pruritus scores of the patients diagnosed with idiopathic pruritus and uremic pruritus, respectively. On the other hand, another study by Ada et al. [6] which involved 20 patients diagnosed with uremic pruritus yielded a drop of 69.3% in the pruritus score following narrowband UVB therapy.

Age, years, mean (min-max)	50.6 (26-76)
Number of NB-UVB therapy sessions, mean (min-max)	24 (15.0-30.0)
Sex, %	
Female	11 (69%)
Male	5 (31%)
Duration of disease, years, mean (min-max)	11.3 (2.0-40.0)
Decrement in pruritus score, %, mean (min-max)	65 (20-100)
NB-UVB: Narrowband ultraviolet B, min: Minimum, max: Maximum	

In another research, Esen Salman et al. [7] studied a total of 176 patients 26 of whom were diagnosed with neurodermatitis. The patients were undergone on average 29-session narrowband UVB treatment. Middle-to-high degree disease controls were attained in 73.8% of the patients after the treatment. Likewise, we also observed a 65% decrement in the pruritus scores of the patients diagnosed with neurodermatitis following a treatment of an average 24-session narrowband UVB.

Study Limitations

The number of patients were limited in this study.

Conclusion

Narrowband UVB treatment is a reliable treatment option for patients who are diagnosed with neurodermatitis and idiopathic pruritus, especially for those who display resistance to topical treatments.

Ethics

Ethics Committee Approval: Approval of the Cerrahpasa Faculty of Medicine Ethics Committee (IUC date and no.: 11/09/2020-118656).

Informed Consent: Informed consents of all participants were obtained before the study.

Peer-review: Internally peer-reviewed.

Authorship Contributions

Surgical and Medical Practices: Ö.A., S.N.Y., T.K.Ü.U., B.E., Concept: Ö.A., S.N.Y., T.K.Ü.U., B.E., Design: Ö.A., S.N.Y., T.K.Ü.U., B.E., Data Collection or Processing: Ö.A., S.N.Y., T.K.Ü.U., B.E., Analysis or Interpretation: Ö.A., S.N.Y., T.K.Ü.U., B.E., Literature Search: Ö.A., S.N.Y., T.K.Ü.U., B.E., Writing: Ö.A., S.N.Y., T.K.Ü.U., B.E.

Conflict of Interest: No conflict of interest was declared by the authors.

Financial Disclosure: The authors declared that this study received no financial support.

References

1. Chen X, Sun Y. Central circuit mechanisms of itch. *Nat Commun* 2020;11:3052.
2. Aydemir HE. Self Inflicted Dermatological Diseases. *Turkderm* 2010;44:41-45.
3. Fototerapi Tedavi Kılavuzu. *Turk J Dermatol* 2018;12:198.
4. Aşkın Ö, Aydemir EH, Serdaroglu S, Engin B. Demographic characteristics of lichen simplex chronicus and prurigo nodularis patients: 5-year policlinic evaluation. *J Turk Acad Dermatol* 2020;14:83-88.
5. Seckin D, Demircay Z, Akin O. Generalized pruritus treated with narrowband UVB. *Int J Dermatol* 2007;46:367-370.
6. Ada S, Seçkin D, Budakoğlu I, Özdemir FN. Treatment of uremic pruritus with narrowband ultraviolet B phototherapy: an open pilot study. *J Am Acad Dermatol* 2005;53:149-151.
7. Esen Salman K, Kivanç Altunay İ, Salman A. The efficacy and safety of targeted narrowband UVB therapy: a retrospective cohort study. *Turk J Med Sci* 2019;49:595-603.