

A comparative study of UV1 versus narrow band UVB phototherapy in the treatment of vitiligo

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Abstract

Introduction: Vitiligo still remains a difficult disease to treat, although various non-surgical and surgical treatment modalities have been mentioned in the literature. Ultraviolet A, i.e. UVA, Narrow band ultraviolet-B i.e. NBUVB, Psoralen with ultraviolet A (PUVA) therapy are well-described therapies for vitiligo in literature. **Method:** UVA comprises of wavelength 320-400 NM. NBUVB comprises of wavelength 311-313 NM. The UVA and NBUVB, given by a UV chamber having photo lights facilities in a medical college, tertiary care hospital situated at a district place. This is a prospective, random study. In this study the efficacy of both UVA and NBUVB is studied. **Results:** Overall percentage of re-pigmentation area at the end of 6 months is more in NBUVB than UVA. The time required for re-pigmentation is less in NBUVB than UVA. **Conclusion:** NBUVB is emerging as a safer modality of phototherapy than UVA.

Keywords: Vitiligo, UVA, NBUVB, Efficacy.

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INTRODUCTION

In India vitiligo is associated with marked social stigma, for which effective treatment modality is needed. The available modalities are surgical and non-surgical methods. Phototherapy is effective and new practising mode of treatment. Broad band UVB is 190-320 NM, out of which 309 +/- 2, is NB-UVB is a new addition to the photo therapies of vitiligo. UVA is 320-400 NM is another type of phototherapy. NB-UVB may exert its effects in vitiligo in a 2 steps simultaneously. The first being stabilisation of the de-pigmenting processes. The second being is the stimulation of residual follicular melanocytes. There is need of study for efficiency and

duration taken for pigmentation in these two modalities i.e. UVA and NB-UVB.

MATERIALS AND METHODS

Patients of both sex of age above 1 to 70 year were included. Patients not giving consent and not ready for follow treatment were excluded. Phototherapy was given 2-3 days in a week with gap of at least 1 day. The duration of therapy was maximum 6 months or up to a re-pigmentation of 75% of vitiliginous skin. UV chamber having tubes from PHILIPS Holland, TL/10R for UVA and TL/01 for NBUVB was used. A prospective randomized clinical trial was conducted at tertiary care hospital in 40 patients diagnosed as Vitiligo out of the 40 patients 20 patients enrolled randomly into the Narrow Band UVB phototherapy treatment group i.e. Group A and remaining 20 into group B i.e. UVA phototherapy. Response to treatment was assessed by comparing the photographs of before and after therapy and measuring the overall re-pigmentation measured as per the VASI (Vitiligo Area Scoring Index) score.

OBSERVATIONS AND RESULTS

Table 1: Distribution of the Patients as per the Age

Age group	No.	Percentage (%)
1-10	2	5
11-20	4	10
31-40	13	32.5
51-60	15	37.5
61-70	6	15
Total	40	100

Majority of the patients were in the age group of 51-60 i.e. 37.5 % followed by 31-40 i.e. 32.5%; 61-70 i.e. 15%; 11-20 i.e. 10%; 1-10 i.e. 5.

Table 2: Sex wise distribution of the Patients

Sex	No.	Percentage (%)
Male	16	40
Female	24	60
Total	40	100

Majority of the patients were Female 60% and 40 % were males.

Table 3: Distribution of the patients as per the re-pigmentation status in both the treatment groups

Re -pigmentation	Group A	Group B	Un paired t-test
Overall percentage of re-pigmentation area at the end of 6 months (Mean ± SD)	75 % ± 8	50 ± 5	P<0.001,t=11.85, df=38.
Duration of treatment in months required for the onset of re-pigmentation area (Mean ± SD)	2.1 ± 1.5	3.5 ± 1.8	P<0.01,t=2.6,df=38.

Overall percentage of re-pigmentation area at the end of 6 months (Mean ± SD) was 75 % ± 8 % in group A and 50 ± 5% in group B which was significantly higher (P<0.001,t=11.85, df=38). Duration of treatment in months required for the onset of re-pigmentation area (Mean ± SD) was 2.1 ± 1.5 in group A and 3.5 ± 1.8 in group B which was significantly higher in group B (P<0.01,t=2.6,df=38)



Figure 1



Figure 2

Legend

Figure 1: Before the NB-UVB treatments, 3 spots of vitiligo on face, in a 10 years girl.

Figure 2: After 6 months of NB-UVB treatments, 2 spots healed and only a single spot which is remaining, is also becoming darker. (>75% pigmentation)

DISCUSSION

Although PUVA therapy is a well-established first line treatment for vitiligo, recent studies have shown that NB-UVB therapy is more effective, less dangerous and superior to PUVA therapy.^{13,17,18} NB-UVB therapy is now a more or less established and recommended phototherapy for generalized vitiligo, pregnant women and children because of the high safety profile.^{13,20,22}

UVA and NB-UVB stimulates the DOPA-negative melanocytes. NB-UVB has more immune-modulating effect than UVA. In our study we have found that majority of the patients were in the age group of 51-60 i.e. 37.5 % followed by 31-40 i.e. 32.5%; 61-70 i.e. 15%; 11-20 i.e. 10%; 1-10 i.e. 5. Majority of the patients were Female 60% and 40 % were males. Overall percentage of re-pigmentation area at the end of 6 months (Mean ± SD)

was 75 % ± 8 % in Group A and 50 ± 5% in Group B which was significantly higher (P<0.001,t=11.85, df=38). Duration of treatment in months required for the onset of re-pigmentation area (Mean ± SD) was 2.1 ± 1.5 in Group A and 3.5 ± 1.8 in Group B which was significantly higher in group B (P<0.01,t=2.6,df=38). These findings are in confirmation with El-Zawahry BM *et al.*²³

CONCLUSION

NB-UVB phototherapy remains to be an effective therapeutic option in vitiligo. Response to UVA in vitiligo seems to be reluctant and non-impressive.

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