

NON-LASER TARGETED UV TREATMENT FOR LOCALIZED PSORIASIS

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INTRODUCTION

Phototherapy is one of the safest and most effective treatments for psoriasis. Traditional UV phototherapy usually involves full-body exposure to UV light. Twenty-five to 30 treatment sessions or more may be required to produce >90% clearance. This is because the maximum UVB dose that can be delivered safely during any single treatment session is limited to the minimal erythral dose (MED) for normal, uninvolved skin.

Studies have shown that narrow band UVB is more effective compared to broadband UVB¹. This likely is due to its spectral waveband being within the psoriasis action spectrum of 290 nm to 315 nm, and devoid of spectra below 290 nm which are highly erythral but not antipsoriatic².

Psoriatic skin is known to be able to withstand increased exposure to UVB, probably due to its thickened plaques³. Prior to the development of a UVB (308 nm) excimer laser, there was no instrumentation available to deliver high doses of UVB selectively to psoriatic plaques. However, a non-coherent, narrow spectrum UVB light source, the DualLight Model UV 120-2 UVA/UVB Targeted Phototherapy System, is FDA approved for the treatment of psoriasis. The control is operator selectable and provides physicians with the flexibility to treat patients using either targeted PUVA or targeted UVB. The system is a compact, desktop system that weighs less than 20 lbs. It delivers a narrow spectrum of UVB with spectral peaks at 302 nm and 312 nm at rates comparable to excimer laser systems, through a flexible light-guide and 3/4-inch square handpiece to the targeted psoriatic plaques without exposing neighboring, healthy skin.

BECAUSE UVB IS TARGETED TO THE DISEASED SKIN, A HIGHER DOSE (UP TO 8 MEDS) CAN BE DELIVERED DURING EACH TREATMENT SESSION, MAKING IT POSSIBLE TO INDUCE REMISSION OF PSORIASIS WITH FEWER TREATMENTS.

METHODS

Ten subjects age >18 years with localized plaque type psoriasis were enrolled in this study at the Dermatology Clinic at Wake Forest University School of Medicine. Treatments were performed using the DualLight™ Model UV 120-2 UVA/UVB Targeted Phototherapy System. Subjects received localized UVB treatments 2-5 times per week. No other treatments were allowed during the study.

At baseline, a brief medical history and psoriasis treatment history was taken. Subjects were given a total body skin examination utilizing the Psoriasis Area and Severity Index (PASI) at both baseline and the end of the study.

METHODS (cont.)

Thereafter, each subject's minimal erythral dose (MED) was determined through phototesting of normal skin patches. Subjects were treated per protocol 2-5 times a week using multiples (4-8) of a patient's MED until >90% disease clearance or 25 treatments occurred. If the lesion did not respond visually (no flattening, tanning or reduction of scale), and/or there was no evidence of erythema after the first treatment, the dose was increased by 1 MED. We continued to increase by 1 MED on subsequent treatments (to a maximum of 8 MED) if no response occurred. If after 3 treatments at the increased dose levels the lesion still showed no response, treatment was halted and PASI reassessment was performed. The subject would then be labeled as a "partial clearing or non-responder", and exited from the study.

Subjects whose lesions attained >90% clearance returned for follow-up at 2, 4 and 6 months. If the lesion recurred, subsequent follow-up evaluation was not required.

baseline



post-treatment



baseline



post-treatment



RESULTS

- Ten subjects enrolled, 4 subjects dropped during treatment (due to scheduling conflict, relocation, unknown).
- All subjects were Caucasian males.
- Average Age: 34-72 yr (Mean: 55, SD: 15).
- Of the remaining 6 subjects, all reached >90% clearing of their disease.
- Number of treatments: 14 - 32.
- One subject failed to follow-up after treatment concluded.
- One subject had recurrence of the target lesion by 2 months.
- Three subjects had recurrence of the target lesion by their 6 month follow-up.
- One subject had recurrence of the target lesion after 6-months follow-up.

CONCLUSIONS

- Localized, non-coherent DualLight UVB phototherapy appears to be an effective and well-tolerated treatment for psoriasis.
- The lack of burning or blistering in this study suggests our dosing protocol may be too conservative for patients desiring rapid improvement; further study of more aggressive UV dosing is warranted, which may further reduce the number of treatment sessions required.
- Localized UVB phototherapy has all the advantages of conventional phototherapy, along with the ability to selectively deliver UVB to diseased skin. Targeting only the psoriatic lesions spared the healthy skin from potentially damaging exposure.
- Recurrence rates are similar to those for traditional phototherapy.
- Targeted UVB phototherapy also allows for treatment of body sites that are relatively inaccessible to conventional light booths.

REFERENCES

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