

effect, probably because it was inactivated to coloured products within 2 days.

In dermatoses such as lichen planus, neurodermatitis, discoid LE and necrobiosis lipoidica, the effect of 0.1% betamethasone valerate with Actiderm was also most impressive, but the duration of treatment time has to be prolonged.

Treatment of Psoriasis with a New UVB-Lamp

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Twenty-nine patients with psoriasis took part in a study which compared the therapeutic effect of Philips TL12 with a new narrow-band UVB lamp (Philips TL01). The patients were treated on an out-patient basis and treatments were given 3–5 times weekly for a maximum of 8 weeks. The study was conducted in a randomized left–right double-blind fashion. The total score on the TL01-side decreased rather more than on the TL12-side. Eleven patients preferred the TL01 lamp and one the TL12-side, whereas 17 patients had no preference. One of the drawbacks with the new lamp is that radiation times are almost doubled.

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Treatment of psoriasis with UVB irradiation is convenient for the patient, cheap, and reasonably safe (1, 2). Fischer et al. found 313 nm to be the most effective wavelength for the treatment of psoriasis (3, 4). Parrish & Jaenicke demonstrated that the psoriasis action spectrum closely resembles the erythema action spectrum above 300–305 nm (5). Omitting the radiation below this wavelength region ought to be advantageous.

In a recent study, van Weelden et al. found a new sunlamp to be superior to the old equipment in a limited number of cases (6). Using Ingram treatment, the lamp has also been found to be more useful than the old equipment (7).

REFERENCES

1. Friedman SJ. Management of psoriasis with a hydrocolloid occlusive dressing. Arch Dermatol 1987; 123: 1046–1052.
2. Telfer NR, Ryan TJ, Le Banc D, Merk H, Lotti T, Juhlin L, Cherry CA. The therapeutic effects of an occlusive hydrocolloid dressing in the treatment of psoriasis. The Royal Soc Med Int Congr Symp Ser 137, 53–56, 1988.

In a left–right comparison study we have evaluated the effect against psoriasis, using the new narrow-band lamp (Philips TL01) and compared it with the regular UVB equipment (Philips TL12).

MATERIAL AND METHODS

Twenty-nine patients took part in the study; 21 females and 8 males. The median age was 35 (range 19–76) years, the median duration of their psoriasis, 10 years (range 0–36 years). The average area of the body covered with psoriasis (calculated by the rule of nine) was 57%.

Equipment

The two types of fluorescent lamp were housed in four separate holders supplied by ESSHÄ Electrical Products, Sweden. Each holder contains three lamps. Patients were irradiated from the left- and right-hand side with 6 TL01- and 6 TL12-lamps, respectively, in randomized order. Using an International Light radiometer with a SED240 probe, the irradiance on the TL01 side was 0.07 mW/cm² and on the TL12 side, 0.7 mW/cm². The different emission spectra for TL01 and TL12 are shown in Fig. 1.

Treatment regime

The study was conducted at the Department of Dermatology, University of Göteborg. The patients were treated on an out-patients basis and came for evaluation every second week. Treatment was given three to five times weekly, for a maximum of 8 weeks. The study was conducted during autumn and winter in order to avoid disturbing influence from natural sunshine. No concomitant psoriasis therapy was allowed, except for emollients. The irradiation doses were increased according to the response of the patient, i.e. increased until a slight erythema developed. For practical reasons, the maximum irradiation time was set to 30 min.

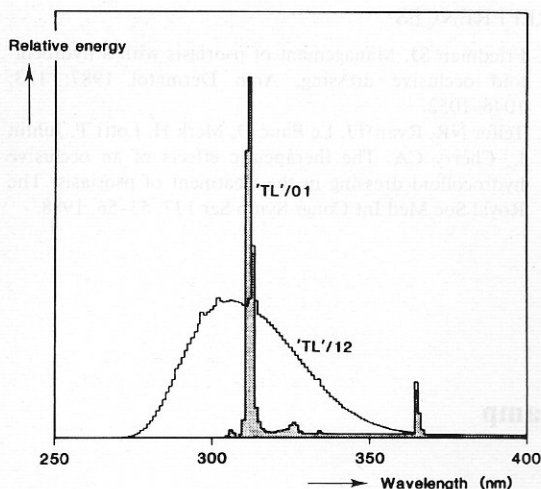


Fig. 1. The different emission spectra for the TL01 and TL12 lamps, respectively.

Patient evaluation

Patients were evaluated before the start of the treatment and every second week thereafter until a maximum of 8 weeks. A scoring system was used, awarding different scores for erythema, desquamation, infiltration, and itch. Zero denoted no symptom, 1 slight, 2 moderate and 3 severe symptoms. Side-effects were also recorded, as was patient preference on each visit to the investigator. The different symptoms were compared for each treatment side separately. A total assessment was also made, adding together the different objective symptoms, i.e. erythema, desquamation and infiltration.

RESULTS

The symptoms for the total score of erythema, desquamation and infiltration are shown in Fig. 2. Using a general linear model procedure, with the differences between individuals taken into account, the *p*-value for difference in slopes was 0.036. As can be seen in Fig. 2, the TL01-side improved slightly quicker than the TL12 side. Looking at each symptom separately after the different time intervals revealed no significant changes, i.e. no difference separately for erythema, desquamation, and infiltration. Nor was there any difference regarding itch between the two treatment halves. The median number of treatments was 17. However, patient preference was clearly in favour of TL01, 11 patients preferring this treatment. Only one patient preferred the TL12-side and the rest of the patients had no preference. No signs of differences in pigmentation could be noted. The radiation times with the TL01-lamp were on average 1.74 times

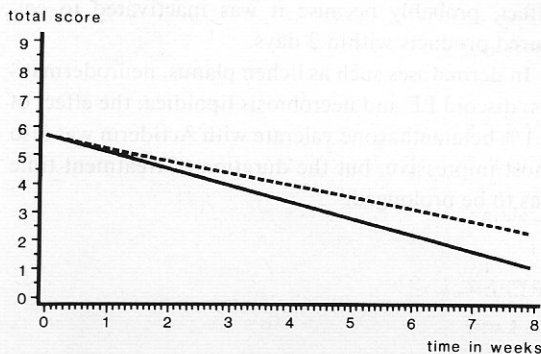


Fig. 2. y-axis: Total scores; x-axis time (in weeks). —, TL01; ---, TL12.

longer than with the TL12-lamp. The average UV-dose per patient was 4.8 J/cm² on the TL12-side and 0.83 J/cm² on the TL01-side.

DISCUSSION

UVB treatment is an important therapy against psoriasis in clinical practice. Recently it has been demonstrated that omitting the UVC portion leads to a safer treatment (6). In view of this knowledge, there is a need to improve therapy. Ideally, the emission spectrum ought to parallel the erythema action spectrum above 300 nm. The new Philips TL01 has an almost monochromatic emission peak at 311 nm. Thus, UVC is not present.

In our study, TL01 seems to give slightly better treatment results than TL12, but patient preference is in favour of the new lamp, though one of its drawbacks is that about twice as long radiation times are necessary compared with the old equipment. The difference may be even greater than this, as the time necessary to reach equi-erythemogenic treatment is about 4–5 times as long with the new lamp. The reason why the difference in total irradiation time is shorter than this is probably due to difficulties in standing in an upright position for such a long time. In the study, we maximized the treatment time to 30 min, but only one patient achieved this. The long irradiation time limits the flow of patients through treatment centres with the electrical equipment we have available. More bulbs are necessary to achieve the same convenience that the patients are accustomed to. Simply placing more bulbs in the treatment cubicles increases the cost considerably and could also lead to ventilation problems. However, the new

lamp clearly seems to be an improvement over the previous equipment.

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REFERENCES

1. Larkö O. Phototherapy of psoriasis—clinical aspects and risk evaluation. *Acta Derm Venereol* (Stockh) 1982; Suppl 103.
2. Boer J, Schothorst AA, Suurmond D. UVB phototherapy of psoriasis. *Dermatologica* 1980; 161: 250–258.
3. Fischer T. UV-light treatment of psoriasis. *Acta Derm Venereol* (Stockh) 1976; 56: 473–479.
4. Fischer T, Alsins J, Berne B. Ultraviolet action spectrum and evaluation of ultraviolet lamps for psoriasis healing. *Int J Dermatol* 1984; 23: 633–637.
5. Parrish JA, Jaenicke KF. Action spectrum for therapy of psoriasis. *J Invest Dermatol* 1981; 76: 359–362.
6. van Weelden H, Baart de la Faille H, Young E, van der Leun JC. A new development in UVB phototherapy of psoriasis. *Br J Dermatol* 1988; 119: 11–19.
7. Karvonen J, Kokkonen E-L, Ruotsalainen E. 311 nm UVB lamps in the treatment of psoriasis with the Inram regimen. *Acta Derm Venereol* (Stockh) 1989; 69: 82–85.

The Effect on Atopic Dermatitis of Supplementation with Selenium and Vitamin E

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Reduced concentrations of selenium in whole blood, plasma and white cells and reduced activity of selenium-dependent glutathione peroxidase in red cells have been found in atopic dermatitis. To determine the effect of selenium supplementation on this disease, the normal daily diet of 60 adults with atopic dermatitis was supplemented with selenium-enriched yeast for 12 weeks in a randomised double-blind study. Group 1 took 600 µg of selenium alone, Group 2 600 µg of selenium plus 600 IU of vitamin E and Group 3 a placebo. After 12 weeks, there was a significant increase in the concentration of selenium in whole blood and the activity of selenium dependent glutathione peroxidase in platelets in Groups 1 and 2 and the concentration of vitamin E in plasma in Group 2. There was no significant difference between the three Groups in the severity of the eczema or the concentration of selenium either before or after the 12 weeks of supplementation. The results suggest that although selenium-enriched yeast supplement was absorbed and bioavailable it does not enter the skin or produces a worthwhile improvement in atopic dermatitis. *Key words: Eczema; Glutathione peroxidase.*

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Selenium is an essential trace element. It is part of the active site of the selenium-dependent enzyme glutathione peroxidase (EC 1.11.1.9) and so forms part of the body's antioxidant defences. A reduction in enzyme activity may lead to the accumulation of hydroxyl radicals in inflamed tissues (1) and supplementation with selenium has been shown to benefit patients with acne (2) and to reduce ultraviolet light induced inflammation in hairless mice (3). Vitamin E is another dietary antioxidant whose action complements that of selenium.

Reduced activity of glutathione peroxidase in red cells (4) and concentration of selenium in whole blood, plasma and white cells (5) have been found in atopic dermatitis and selenium concentrations are lower than adult values in childhood when atopic dermatitis is most prevalent and severe. In this study the effect of supplementation with selenium and vitamin E on adults with atopic dermatitis has been studied in a double blind placebo controlled study.

MATERIAL AND METHODS

Adults with moderate to severe atopic dermatitis were recruited from amongst those who had attended the Department of Dermatology in Southampton and their informed