

Foil Bath PUVA in the Treatment of Prurigo Simplex Subacuta

VOLKER STREIT, RAINER THIEDE, OLIVER WIEDOW and ENNO CHRISTOPHERS

Department of Dermatology, Christian-Albrechts-University, Kiel, Germany

Prurigo simplex subacuta is a chronic pruritic condition of unknown aetiology. The skin lesions respond to topical corticosteroids, UV-A and UV-B therapy only to a limited degree. Ten patients suffering from prurigo simplex subacuta were treated with foil bath PUVA at a concentration of 0.5 mg 8-methoxypsoralen/l. Using the foil bath method the volume of the psoralen/bath-water solution is restricted to 10 l with the aid of polyethylene foil.

The group required a median of 13 (95% CI:9–19) baths for clearance. The total UV-A dose for the whole group was 19 (95% CI:5–30) J/cm². Bath PUVA is a safe and well-tolerated therapy in the treatment of prurigo simplex subacuta. **Key words:** 8-MOP; bath therapy; pruritus.

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V. Streit M.D., Department of Dermatology, University of Kiel, 24105 Kiel, Germany.

Prurigo simplex subacuta is a pruritic condition which predominantly affects middle-aged women (1). It is characterized by pruritic urticarial lesions soon becoming papular and excoriated, located mainly on the "cape" area, scalp, neck, extremities, lower trunk and buttocks. The pathogenesis is unknown, but the disease is thought to be associated with emotional difficulties and stress (2). Although treatment is known to be difficult, beneficial effects by using topical corticosteroids, systemic antihistamines, UV-A and UV-B have been reported (3). We describe 10 patients, who were successfully treated with foil bath PUVA. The volume of the psoralen/bath-water solution was restricted to 10 l with the aid of polyethylene foil, resulting in a favourable cost/benefit ratio for bath PUVA.

MATERIALS AND METHODS

Patients

Ten patients (4 females and 6 males), aged 29–85 years, were enrolled in this study, after informed consent had been obtained. Patients were graded with regard to their skin type according to Pathak & Fitzpatrick (4), with 4 patients having skin type II and 6 patients skin type III. All patients had multiple erythematous nonfollicular urticarial papules with superimposed excoriations.

The duration of prurigo ranged from 9 weeks to up to 20 years, with a median of 7 years. Previous therapies included local corticosteroids and UV-B irradiation. Two patients had a history of positive patch test reactions to metal ions. One patient suffered from kidney failure and had to be dialysed three times weekly. History in all patients was negative for atopic dermatitis, asthma and rhinitis. Routine laboratory check-up before the start of therapy consisted of a full-blood count, liver and kidney parameters, screening for hepatitis and intestinal parasites. Malignant disease was excluded by chest X-ray and abdominal sonography.

PUVA bath treatment

The patients were treated with foil bath PUVA at a concentration of 0.5 mg 8-methoxypsoralen (8-MOP)/l, as reported earlier (5). In short, the volume of bath solution and 8-MOP was restricted with the aid of polyethylene foil (3 × 4 m, thickness 50 µm, Phadimed, Herne, Germany), unfolded on the surface of a regular bath tub filled with 150 l water. Thereafter 10 l of psoralen solution (0.5 mg 8-MOP/l, Meladinine[®], Basotherm, Biberach a. d. Riß, Germany) was applied on top of the polyethylene foil. By immersion into the foil-covered bath, the psoralen bath solution becomes evenly distributed over the patient's body (Fig. 1). Following a 15-min bath, UV-A irradiation was immediately performed with a Waldmann 7001 K (Waldmann Medical, Villingen-Schwenningen, Germany).

The starting UV-A dose for skin type II was 0.1 J/cm² and for skin type III 0.25 J/cm². The UV-A dose was increased with each treatment session, until the patient showed marked clinical improvement or minor erythema. There were three to four treatment sessions per week.

RESULTS

Patients required a median of 13 (95% CI:9–19) treatments for clearing of the pruritic lesions, the median cumulative dose of UV-A was 19 (95% CI:5–30) J/cm², (Table I). Two patients with skin type II had minor erythema; no severe side-effects were seen. While 8 patients cleared completely, 2 patients were discharged with minor residual lesions on the legs.

DISCUSSION

Prurigo simplex subacuta is a pruritic condition which mainly affects the trunk and the extensor surfaces of the extremities.



Fig. 1. Foil bath method. The patient takes a PUVA bath in 10 l bath solution containing 0.5 mg 8-MOP/l. A large piece of polyethylene foil separates the bath solution from 150 l water in a regular size tub.

Table I. Clinical data and results of patients with prurigo simplex subacuta receiving bath PUVA therapy

Sex/age	Skin type ²	n ¹	Cum. UV-A (J/cm ²)	Max. dose (J/cm ²)	
F/73	II	9	4	0.60	
M/85	II	12	11	1.25	
F/60	II	6	5	1.50	
F/52	II	19	23	1.50	
M/55	III	13	19	2.75	
M/35	III	21	47	4.00	
M/29	III	14	26	3.50	
M/32	III	12	15	2.50	
M/72	III	18	30	3.00	
F/75	III	15	27	2.75	
median:	55	-	13	19	2.50
CI:	(32-75)	-	(9-19)	(5-30)	(1.25-3.50)

¹ number of treatments

² skin type according to Pathak & Fitzpatrick (4)

CI: 95% confidence interval

The diagnosis is usually based on clinical symptoms and the exclusion of other diagnoses showing papular pruritic eruptions, such as atopic dermatitis, contact dermatitis or infestations (3). The pathogenesis of the condition is unknown, although some authors have proposed emotional stress (2) or an eczematous reaction of the follicular wall (6). To a limited extent patients may respond to treatment with topical corticosteroids, systemic antihistamines, systemic PUVA therapy and UV-B application (3). Since bath PUVA has been reported to have an immunomodulating effect (7), we performed this treatment in our patients resulting in complete or almost complete clearance in all 10 patients.

Bath PUVA has been demonstrated to be a safe and effective treatment modality in the therapy of psoriasis since the first report by Fischer & Alsins in 1976 (8). Other studies have confirmed that bath PUVA compared to systemic PUVA therapy offers the advantage of avoiding systemic side-effects, such as gastrointestinal discomfort and the risk of cataractogenesis which may follow standard oral 8-MOP application (9, 10). Furthermore, bath PUVA requires less than 50% of the cumulative UV-A dose per treatment cycle, as calculated in the European PUVA study for systemic PUVA therapy of psoriasis (10, 11).

On account of its safety and efficacy bath PUVA is gaining an increasingly wide distribution. With the exception of psoriasis few other reports have been published revealing a positive effect of bath PUVA in the therapy of nodular prurigo (12) and scleroderma (13).

Although the aetiology of prurigo simplex subacuta is unknown the beneficial response to bath PUVA in our patients could be explained by immunomodulation, as it has recently been shown in biopsies from psoriatic lesions that epidermal and dermal CD3⁺ T-lymphocytes, as well as CD4⁺, CD8⁺ and IL-2 receptor⁺ subsets, were strongly suppressed by bath PUVA (7). Other authors have reported a decrease in epidermal Langerhans' cells (14).

The foil bath method for the application of bath PUVA restricts the volume of bath water from 150-200 l water down to approximately 10 l. The main advantage of the foil method is the reduction of the amount of 8-MOP used per bath, as commercially available 8-MOP solutions are considerably more expensive than systemic PUVA therapy.

Although the number of patients reported in this study is limited, the results clearly show that patients suffering from prurigo simplex subacuta greatly benefit from bath PUVA. This treatment modality represents a safe and well-tolerated way to treat patients suffering from a condition that proved to be comparatively unresponsive to other therapies.

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