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Efficacy of localized hand and foot phototherapy: a review of patients treated in a teaching hospital setting

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The evidence base for localized phototherapy for chronic inflammatory dermatoses is limited.[1,2] In a comparison of broadband ultraviolet (UV)B and topical psoralen UVA (PUVA) for palmoplantar psoriasis, complete or partial response was seen in 54% and 89%, respectively.[3] A meta-analysis of localized phototherapy for psoriasis showed 61% and 77% efficacy for UVB and topical PUVA[4], respectively, while relatively poor responses were shown for UVB and PUVA in hand dermatoses.[5]

The four local phototherapy units in Tayside treated 1311[6] patients in 2016 (including 436 patients for conditions of the hands and/or feet). All data regarding patient treatment courses were stored in the PhotoSys database (managed by Photonet, the managed clinical network for phototherapy in Scotland; www.photonet.scot.nhs.uk). Narrowband UVB (TL-01) was administered three times weekly with 20% dose increments as standard. Topical PUVA soaks (0.0024% liquid psoralen for 20 min) were administered twice weekly with 20% dose increments. Oral PUVA (8-methoxypsoralen 25mg/m^2 given 2 h pre-UVA) was administered twice weekly, with 70% minimal phototoxic dose (MPD) as the starting dose, with increments of 10–40%.[7]

We reviewed data for patients attending for localized phototherapy to the hands and/or feet (UVB, PUVA: topical and oral) for dermatitis (including atopic eczema, contact dermatitis, irritant dermatitis, pompholyx) and psoriasis (including psoriasis and palmoplantar pustulosis) over a 3-year period to January 2015.

We pre-determined that a target of 60% of patients achieving moderate clearance or clearance would be a successful treatment outcome (recorded as cleared, minimal residual activity or moderate clearance). This target was based on our experience of clinically useful improvements for patients observed in previous phototherapy trials in our department and during routine phototherapy. Patient outcomes for a single course of UVB and PUVA for dermatitis and psoriasis are summarized in Table 1.

We also looked at patients who repeated treatment courses. We identified 14 patients with dermatitis treated with UVB who had further UVB treatment (9 to the hands, 3 to the feet, 2 to the hands and feet) 3–14 months after the first course. One patient had short remission (< 3 months). Six patients with psoriasis who received UVB (three to the hands, two to the feet, one to the hands and feet) had further UVB treatment, resulting in 4–18 months remission. Of 116 patients with psoriasis who received PUVA, 10 received further treatment (three to the hands, one to the feet, six to the hands and feet; range 2–13 months); one patient had short remission (2 months) before moving to 5-methoxypsoralen (5-MOP) PUVA. No patients with dermatitis receiving PUVA had repeat treatment during the period analysed.

We showed that the target criterion for success were met, indicating useful therapeutic outcomes with localized UVB and PUVA for dermatitis and psoriasis in a clinical setting. Perhaps as expected, given that UVB is generally selected for milder disease, overall outcomes were similar for UVB and PUVA for both dermatitis (75% UVB vs 70% PUVA: 5.6% more effective, 95% CI −7.3% to 18.5%, $P = 0.39$) and psoriasis (73% UVB vs 65% PUVA: 8.2% more effective, 95% CI −3.9% to 20.3%, $P = 0.19$). We also found 70% success with topical 8-MOP PUVA compared with 73% for UVB; these results are in contrast to a previous systematic review and meta-analysis that showed superior efficacy for psoriasis with localized PUVA (77%) compared with UVB (61%).[4]

These results have to be interpreted with caution, as a limitation was that patients who attended for a

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'single course' could have been treated outside the study period. Thus, patients receiving PUVA in the review period might have previously failed UVB. Additionally, patients receiving UVB may have had milder disease, and there was no record of concomitant topical therapies.

To summarize, localized UVB or PUVA for hand and foot psoriasis or dermatitis can be highly effective and well-tolerated, and should be considered as a possible treatment. These data will inform study design for prospective studies.

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Table 1 Summary of results for patients with dermatitis or psoriasis attending for a single course of treatment.

Phototherapy	*n*	Moderate/ complete clearance (%)	Mean number of sessions	Side effects: erythema, *n* (%)
Dermatitis				
UVB	145	75	25	15 (10%)
PUVA	69	70		2 (3%)
Topical 8-MOP	38	79	22	–
Oral 8-MOP	20	75	23	–
Oral 5-MOP	3	33	24	–
Unknown	8	N/A		–
Psoriasis				
UVB	116	73	26	15 (13%) (all erythema)
PUVA	106	65		11 (10%); erythema 9 (8%); PUVA pain/itch 2 (2%)
Topical 8-MOP	56	70	22	1 patient was taking concomitant oral retinoid
Oral 8-MOP	31	68	22	1 patient was taking concomitant oral retinoid
Oral 5-MOP	13	3	23	
Unknown	6	N/A		1 patient was taking concomitant oral retinoid

MOP, methoxypsoralen; PUVA, psoralen ultraviolet A; UVB, ultraviolet B.