Ultraviolet A1 in the treatment of generalized lichen planus: A report of 4 cases

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To the Editor:

Although it is considered to be self-limiting, lichen planus (LP) may exist for many years and may be generalized and difficult to treat. Four patients with histologically proven, therapy-resistant, generalized LP were treated with Ultraviolet A1 (UVA-1). None used medication known to improve LP or induce lichenoid drug reactions.

Treatment consisted of irradiation with 45 J/cm² for 5 days per week during two 4-week treatment periods with a 3-week interval, with the Photomed 250 000 (Photomed World Industries, Hamburg, Germany) emitting 30 mW/cm². Before and after treatment the affected body area, a 100-mm visual analogue score for itch and the Dermatology Life Quality Index (DLQI) were determined.¹

Case 1 was a 39-year-old woman who presented with a 4-month history of very itchy, generalized LP (Fig. 4.1a). Topical corticosteroids and retinoic acid had proven ineffective. After UVA-1 therapy 98% clearance was achieved (Fig. 4.1.b) and both itch and DLQI improved considerably. Thick plaques on her ankles resolved to thin patches. Histologically, all characteristic features of LP had normalized and only a sparse infiltrate was seen (Figs. 4.2a and 4.2b).

Case 2 was a 38-year-old man who presented with an 8-month history of hardly itching, generalized LP. Potent corticosteroid ointments were ineffective. After UVA-1 therapy, his LP had cleared for 88%. However, the patches on his ankles showed only some improvement.

Cases 3 and 4 were a 54-year-old father and his 17-year-old daughter who had a history of generalized LP of 22 and 9 years, respectively, and had little effect from topical corticosteroids and tretinoin cream. Long-term psoralen plus UVA (PUVA) therapy had previously been successful for the father, but his LP was exacerbated during a second PUVA course. UVA-1 therapy resulted in 82% clearance. The daughter had some temporary
improvement with UVB treatment 7 years earlier. In her case, UVA-1 therapy resulted in 41% clearance. The DLQI and the VAS improved in both. The thick patches on their ankles had not cleared completely.

In all 4 patients therapy-resistant LP lesions improved significantly (Table 4.1). In the past, PUVA therapy has also shown to be effective in the treatment of LP. Biological effects of UV-rays are mediated by different photochemical mechanisms. UVA-1 radiation is known to generate singlet-oxygen and superoxide anions. Extensive production of such radicals can lead to apoptotic death of lymphoid cells that have been shown to have a lower threshold for switching to the apoptotic program. At least part of the therapeutic response to UVA-1 radiation may thus be because of an apoptosis-inducing effect on the inflammatory infiltrate. Whether other mechanisms also play a role in the therapeutic effect remains to be elucidated. UVA-1 therapy may be a promising additional therapy in the treatment of generalized LP, with no short-term side effects. Further studies with appropriate controls would be worthwhile.
Chapter 4

Figure 4.1a Patient 1 before UVA-1 treatment

Figure 4.1b She was tanned after treatment and on this part of the body only marked hyperpigmentation was left where the LP lesions had been
Figure 4.2a
Before UVA-1 the biopsy showed the characteristic histological features of LP

Figure 4.2b
After UVA-1 some post-inflammatory hyperpigmentation and a very sparse dermal infiltrate were seen
**Table 4.1. Patients’ characteristics and results of UVA-1 treatment**

<table>
<thead>
<tr>
<th>Patient No.</th>
<th>Gender/Age</th>
<th>Duration of disease</th>
<th>% Body area affected Before</th>
<th>After (% reduction)</th>
<th>VAS Before</th>
<th>After (% reduction)</th>
<th>DLQI Before</th>
<th>After (% reduction)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>F/39 y</td>
<td>4 mo</td>
<td>79</td>
<td>2 (98)</td>
<td>14.8</td>
<td>0.3 (98)</td>
<td>9</td>
<td>2 (78)</td>
</tr>
<tr>
<td>2*</td>
<td>M/38 y</td>
<td>8 mo</td>
<td>65</td>
<td>8 (88)</td>
<td>0.3</td>
<td>0.2*</td>
<td>2</td>
<td>0*</td>
</tr>
<tr>
<td>3</td>
<td>M/44 y</td>
<td>22 y</td>
<td>27</td>
<td>5 (82)</td>
<td>2.7</td>
<td>0.7 (74)</td>
<td>7</td>
<td>1 (86)</td>
</tr>
<tr>
<td>4</td>
<td>F/17 y</td>
<td>9 y</td>
<td>22</td>
<td>13 (41)</td>
<td>5.2</td>
<td>4.2 (19)</td>
<td>7</td>
<td>5 (29)</td>
</tr>
</tbody>
</table>

DLQI, Dermatology Life Quality Index (0-30); UVA-1, Ultraviolet A1; VAS, visual analogue score (0-10).

*Patient 2 had hardly any subjective complaints. Consequently, improvement of these subjective parameters was not calculated.


