Home Narrowband UV-B Phototherapy in Combination With Low-Dose Acitretin in Patients With Moderate to Severe Psoriasis

Acitretin plus UV-B phototherapy is a highly effective and relatively safe treatment for psoriasis, limited by the inconvenience and cost of office-based treatment. Home phototherapy offers greater convenience, but the safety and efficacy of its use outside the physician’s office has not been well studied. The purpose of this study is to provide a preliminary assessment of home-based narrowband UV-B phototherapy plus low-dose acitretin for moderate to severe psoriasis.

Methods. After institutional review board approval, 27 adult subjects were recruited. All subjects had moderate to severe plaque-type psoriasis (Psoriasis Area Severity Index [PASI] ≥12) and no child-bearing potential or contraindications for acitretin or phototherapy. A 4-week washout was required for any systemic psoriasis therapy, and stable topical regimens and emollients were allowed during the study. Subjects were treated with 25-mg doses of acitretin daily (with dose modifications as needed) and home narrowband UV-B phototherapy (flat panel Panosol II; National Biological Corp, Twinsburg, Ohio) 3 times per week (with increasing exposure times based on skin type and response) (Table). Eye protection was required.

The PASI was recorded at baseline, and at weeks 2, 4, 8, and 12, and quality of life was assessed using the Dermatology Life Quality Index (DLQI). Satisfaction with treatment was assessed by a subanalysis of DLQI question 10 (“How much of a problem has the treatment been?”) on a scale of 0 (not at all) to 3 (very much). Non-parametric Wilcoxon signed rank tests were performed to assess statistically significant changes from baseline to week 12.

Results. Twenty-two of 27 participants completed the 12-week study (Figure). The regimen was well tolerated. A few subjects experienced mild alopecia and increased photosensitivity. Elevation of triglyceride levels was noted in several subjects and led to decreased acitretin dose (to 10 mg/d) in 4 subjects.

Mean baseline PASI was 18.6 and decreased to 13.9 by week 12, a mean improvement of 22% (P = .004). Only 4 subjects achieved a PASI of 50, and none reached a PASI of 75 by week 12. Mean DLQI scores improved over the 12 weeks from 11.9 to 7.0 (P = .001). The improvements in the DLQI were of sufficient magnitude to improve subjects' quality of life. The question 10 score on the DLQI decreased from 1.37 at baseline to 0.89 at week 12 (P = .04), indicating a high level of satisfaction with the study treatment.

Comment. Low-dose acitretin increases the potency of phototherapy while reducing the amount of phototherapy required for clearing and the potential for acitretin adverse effects. The combination of office-based narrowband UV-B therapy plus low-dose acitretin is very effective, but it is inconvenient for many pa-

Table. Home UV-B Phototherapy Dosing Protocol

<table>
<thead>
<tr>
<th>Skin Type</th>
<th>Initial Treatment Time per Side, s</th>
<th>Increase in Treatment Time per Side, s</th>
</tr>
</thead>
<tbody>
<tr>
<td>I</td>
<td>10</td>
<td>2</td>
</tr>
<tr>
<td>II</td>
<td>16</td>
<td>3</td>
</tr>
<tr>
<td>III</td>
<td>24</td>
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<tr>
<td>IV</td>
<td>30</td>
<td>6</td>
</tr>
<tr>
<td>V</td>
<td>36</td>
<td>7</td>
</tr>
<tr>
<td>VI</td>
<td>44</td>
<td>9</td>
</tr>
</tbody>
</table>

a Starting doses of narrowband UV-B light exposure based on skin type.
b If no erythema or pinkening occurred from the most recent dose, treatment time was increased according to skin type (a painless “pinkening” of the skin was acceptable, but not reddening or burning, and front and back were treated with the same gradually increased times).

Figure. Flowchart of patient study enrollment.
tients. Home-based phototherapy may reduce inconvenience and cost, but there is little information on the safety or efficacy of this approach. While there was not a high level of improvement in PASI scores in this study, subjects tolerated the treatment well and were generally satisfied with the treatment.

This study used home-based narrowband UV-B light units fitted with an electronic control that provides a set number of treatments. When these treatments have been used, patients must contact their physician for a new code to get additional treatments. This provides an additional safety measure to prevent long-term use without supervision.

Limitations of this study include small study population, a relatively short duration of therapy, and a conservative escalation of light dose. The lack of burning and modest efficacy may reflect that the subjects received approximately one-quarter of the recommended UV dose (standing 12 in from the light units vs 6 in). However, we did not reach a plateau in PASI by week 12, so ultimate efficacy levels might be higher. Perhaps a more aggressive UV exposure, such as standing closer to the unit or longer exposure times, would have been more effective at clearing lesions.

This small pilot study demonstrated good tolerability of home narrowband UV-B phototherapy and oral acitretin therapy. The efficacy was sufficient that subjects expressed interest in continuing home phototherapy after the study period. The data from this small trial complement extensive trial and clinical practice experience with office-based phototherapy plus retinoid combination regimens.

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