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A comparison between systemic psoralen plus ultraviolet A therapy and topical clobetasol in the treatment of vitiligo

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Conflict of interest: None to declare

Received: August 20, 2010
Accepted: February 22, 2011

INTRODUCTION

Vitiligo is a common disorder which causes great cosmetic problems for patients; therefore, its proper management is highly important. It approximately affects 0.5-2 percent of the world’s population. This disease usually starts in childhood or adolescence but may occur at any age. Both sexes are equally affected, and the maximum incidence is between ages 10-30. There are various treatments for this disease, but two most common ones are oral psoralen plus ultraviolet A radiation (PUVA therapy), and topical corticosteroids. Each mode of treatment has its own complications. In a study in Saudi Arabia, 32 patients were treated with PUVA and the overall response rate was 59.4%. In Filipino, 25 patients with vitiligo lesions were treated with topical clobetasol propionate cream. After six months of treatment, 22 of the 25 patients showed at least 90% repigmentation. Since PUVA therapy and topical clobetasol are two routine treatment modalities for vitiligo in Iran but their efficacy has not been compared yet, we decided to compare the efficacy and complications of these methods.

Background: Topical corticosteroids and oral psoralen plus ultraviolet A radiation (PUVA therapy) are two common treatment methods for vitiligo. The aim of this study was to compare the efficacy, complications and patterns of repigmentation of these two methods.

Methods: This prospective randomized clinical trial was conducted from July 2007 to October 2008. Patients with disseminated vitiligo were divided into two groups. PUVA therapy was administered in one group and topical clobetasol was used in the other group. Results were recorded in 4 categories and therapeutic findings and complications were compared after 24 weeks.

Results: Among 37 participants in the PUVA therapy group, 18 (48.6%) patients achieved marked and 14 (37.8%) patients showed good repigmentation. Similarly, among 35 participants in the clobetasol group, 6 (17.1%) patients showed marked and 8 (22.8%) patients showed good repigmentation. Treatment complications were observed in 16.2% of the participants in PUVA group and 28.6% of the participants in clobetasol group. The patterns of repigmentation were different in the two groups.

Conclusion: PUVA showed better therapeutic effects, and did not cause significant complications. Therefore, it could be used as one of the first line medications in the treatment of vitiligo.

Keywords: clobetasol, phototherapy, PUVA, vitiligo
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8 (22.9%) showed good repigmentation (Table 2). Statistical difference between the two groups was significant (P= 0.00). Six patients (16.21%) in the PUVA group and 10 patients (28.57%) in the clobetasol group suffered from drug complications (Table 3). The difference was significant (P <0.05).

The pattern of repigmentation was different in the two groups. In group 1, the predominant pattern of repigmentation was perifollicular but there was not pure marginal repigmentation of the lesions. In group 2, the first predominant pattern was perifollicular and the second was pure marginal (Table 4). The relationship between the presence of white hairs on skin lesions and the response to the treatment is shown in Table 5.

**DISCUSSION**

This study showed that after 6 months of treatment, PUVA therapy proved to be more effective than topical corticosteroids in creating repigmentation. This difference was statistically significant (P=0.00). About 48.6% of the patients who were treated with PUVA showed marked repigmentation, while only 17.1% of the patients in the clobetasol group showed the same result. In one randomized comparative study, the efficacy of topical clobetasol propionate cream 0.5% was compared to the use of topical psoralen plus sunlight (PUVAsol) in the treatment of childhood vitiligo. Overall, clobetasol was significantly better than PUVAsol in achieving 75% repigmentation 6. The result of this study was different from ours, but this study was conducted on children and the responsiveness of vitiligo in children can be rather different than adults. In addition, the patients used sunlight instead of artificial UVA radiation. In a study in Saudi Arabia, 32 patients were treated with PUVA and the overall response rate was 59.4% 5. In our study, none of the 37 patients in PUVA therapy group showed less than 25% repigmentation and 48.6% showed marked improvement. In 101 children with vitiligo treated with moderate- to high-potency topical corticosteroids, 64% had repigmentation of the lesions but local steroid side effects were noted in 26% of them 7. In our study, 40% of the patients in the clobetasol group showed moderate or marked repigmentation, and 28.6% developed steroid side effects.

Various patterns of repigmentation in vitiligo lesions may develop with different treatment modalities. In one study, PUVA predominantly...
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of PUVA were the reasons for the lower rate of adverse reactions to UVA. Long-term follow-up is necessary to assess chronic side effects in patients who receive PUVA therapy. Long term high-dose exposure to PUVA has been consistently observed to significantly increase the risk of squamous cell carcinoma.

One of the advantages of phototherapy is that it is done under the guidance and supervision of a physician; therefore, problems such as lack of patient’s cooperation largely decrease. There are some problems that limit the use of PUVA therapy. For example, the required equipment is only available in large cities and oral methoxalen can be scarce. The relatively high cost of treatment, when compared to topical corticosteroids, and the need to protect the eyes are additional problems. Another important limitation of this treatment is being time-consuming for the patients. Therefore, when the use of PUVA is impossible, in limited vitiligo, topical corticosteroids are relatively inexpensive, available and moderately effective. Furthermore, its consumption in specific groups such as children, pregnant and lactating women is also permitted and it does not have the limitations of PUVA. On the whole, the results of this study showed that PUVA therapy in patients with higher skin types was well tolerated with relatively good results and was more effective than topical corticosteroids without significant complications.

REFERENCES


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Table 4. Patterns of repigmentation in vitiligo lesions

<table>
<thead>
<tr>
<th>patterns of repigmentation</th>
<th>Treatment group</th>
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<tr>
<td></td>
<td>PUVA clobetasol</td>
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<tr>
<td>Perifollicular</td>
<td>32 (86.5%) 12 (34.3%)</td>
</tr>
<tr>
<td>Marginal</td>
<td>0 10 (28.6%)</td>
</tr>
<tr>
<td>Diffuse</td>
<td>0 5 (14.3%)</td>
</tr>
<tr>
<td>Perifollicular &amp; marginal</td>
<td>5 (13.5%) 4 (11.4%)</td>
</tr>
<tr>
<td>Perifollicular &amp; diffuse</td>
<td>0 1 (2.8%)</td>
</tr>
<tr>
<td>Marginal &amp; diffuse</td>
<td>0 3 (8.6%)</td>
</tr>
<tr>
<td>total</td>
<td>37 35</td>
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</table>

Table 5. Repigmentation in skin lesions with white hairs

<table>
<thead>
<tr>
<th>Treatment Group and number of patients</th>
<th>Marked (75%)</th>
<th>Good (51-75%)</th>
<th>Moderate (25-50%)</th>
<th>None or poor (25%+)</th>
<th>Total</th>
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<tbody>
<tr>
<td>PUVA (number of patients)</td>
<td>13 (54.2%)</td>
<td>8 (33.3%)</td>
<td>3 (12.5%)</td>
<td>0 (0%)</td>
<td>24</td>
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<tr>
<td>Clobetasol (number of patients)</td>
<td>3 (15.8%)</td>
<td>4 (21.1%)</td>
<td>10 (52.6%)</td>
<td>2 (10.5%)</td>
<td>19</td>
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<tr>
<td>Total</td>
<td>16 (37.2%)</td>
<td>12 (27.9%)</td>
<td>13 (30.2%)</td>
<td>2 (4.7%)</td>
<td>43</td>
</tr>
</tbody>
</table>


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