Comment. In our study, MelaFind performed with a high sensitivity but a low specificity in recommending biopsy for melanomas.

The biopsy specificity for dermatologists in our study (43%) is much higher than the 3.7% specificity found for dermatologists in the study by Monheit et al. This disparity in specificity between the 2 studies is likely owing to the larger sample size and higher ratio of non-melanomas to melanomas in the study by Monheit et al.

In our study, 2 raters had 100% biopsy sensitivity. Their specificities, however, were low, at 12.5% and 8.3%, respectively. These results indicate that higher biopsy sensitivity is associated with lower specificity for clinically atypical pigmented skin lesions for both dermatologists and MelaFind.

Limitations of our study include that it was internet and image based. Thus, tactile evaluation of the lesions was not possible. In addition, the dermatologists completing our study represent a convenience sample who expressed interest in MelaFind, which could have introduced a selection bias. A final limitation is that our study had a small sample size.

In our study, MelaFind appears to be a very sensitive tool to guide dermatologists in biopsying suspect pigmented lesions. However, users need to be aware that MelaFind, like dermatologists, trades a high specificity for a lower sensitivity, thus resulting in biopsy recommendations for many benign lesions. These findings suggest that MelaFind could be useful for dermatologists. A larger reader study is currently under way to confirm these results.

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The Safety and Efficacy of Diphencyprone for the Treatment of Alopecia Areata in Children

Topical diphencyprone (DPCP) immunotherapy is used to treat refractory and advanced alopecia areata. Although not approved for this indication by the US Food and Drug Administration, the safety and efficacy of DPCP in adults with alopecia areata has been evaluated in several studies. However, the use of DPCP in children has been the focus of only a limited number of studies. One study of 26 children indicated cosmetically acceptable hair regrowth in 35% of patients. A second study of 12 patients indicated hair regrowth in 67% of patients.

Methods. We performed a retrospective study of children treated in our DPCP clinic over the period 2002 through 2011 to evaluate the efficacy of DPCP, the incidence of adverse effects, and factors predictive of hair regrowth and adverse effects. The study received ethical approval. All children followed the same immunotherapy protocol beginning with sensitization with DPCP, 2%, in acetone followed by a treatment with DPCP, 0.0001%, 2 weeks later. Thereafter, treatment continued on a weekly basis with increasing concentrations of DPCP if there was no significant itching, scaling, or redness.

A complete response was defined as full regrowth of scalp hair, and a partial response was defined as any hair regrowth other than full regrowth. Fisher exact and χ² tests were used to examine relationships between clinical parameters. P = .05 was considered significant in all analyses.

Results. A total of 108 patients, aged 4 months to 18 years (mean age, 11.7 years), were included in the study. The mean age at onset of alopecia areata was 8 years (range, 4 months to 17 years). Patients included in the study were refractory to treatment with 1 or more of the following: topical steroids (67%), intralesional steroids (34%), or minoxidil (11%); and the average duration of the disease was 3.8 years (range, 1 month to 10 years). Thirty-five children had atopy (32%); 32 had a family history of alopecia areata (30%); 26 had an ophiasis pattern of scalp involvement (24%); and 24 had nail involvement (22%).

Marked sensitization reactions, including localized edema, dermatitis, vesicles, desquamation, and urti-
one-third of children in our study showed improvement in hair density. Overall, approximately 10% of our patients had complete hair regrowth. Adverse effects of DPCP therapy were slightly more common in young children than in older children. In general, adverse effects warranting discontinuation of DPCP treatment were not common.

Study limitations include the small number of patients, the retrospective nature of the study, and incomplete documentation in some cases. Although hair regrowth in a proportion of our patients could be considered spontaneous, this is unlikely for the vast majority of our patients. Our patient population was composed of children with advanced hair loss who were refractory to topical treatments, and many had the disease beyond the time at which spontaneous regrowth would be expected to occur. Further large-scale studies of DPCP use in children with alopecia areata are needed.

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Initial Presentation of DRESS: Often Misdiagnosed as Infections

Drug reaction eosinophilia and systemic symptoms (DRESS) is a severe cutaneous event characterized by a skin eruption, fever, hematologic abnormalities (eosinophilia or atypical lymphocytes), and internal organ involvement.1 DRESS may be complicated by multiple-organ failure requiring treatment in the intensive care unit.2 The overall mortality rate has

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### Table 1. Responses to Diphencyprone in 108 Children With Alopecia Areata

<table>
<thead>
<tr>
<th>Treatment Duration*</th>
<th>6 Months</th>
<th>1 Year</th>
</tr>
</thead>
<tbody>
<tr>
<td>Complete hair regrowth</td>
<td>14 (13)</td>
<td>12 (11)</td>
</tr>
<tr>
<td>Partial hair regrowth</td>
<td>27 (25)</td>
<td>23 (21)</td>
</tr>
<tr>
<td>No hair regrowth</td>
<td>40 (37)</td>
<td>27 (25)</td>
</tr>
<tr>
<td>Dropped out of the study</td>
<td>27 (25)</td>
<td>46 (43)</td>
</tr>
</tbody>
</table>

*a Data are reported as number (percentage) of patients.

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### Table 2. Safety of DPCP Therapy in Children With Alopecia Areata

<table>
<thead>
<tr>
<th>Adverse Effect</th>
<th>0-10 (n = 38)</th>
<th>11-18 (n = 70)</th>
<th>P Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Marked sensitization a</td>
<td>12 (32)</td>
<td>11 (16)</td>
<td>.07</td>
</tr>
<tr>
<td>Adverse effects during DPCP treatment a</td>
<td>27 (71)</td>
<td>31 (44)</td>
<td>.01</td>
</tr>
</tbody>
</table>

Abbreviation: DPCP, diphencyprone.

*a Defined as edema, dermatitis, vesicles, desquamation, and urticaria.

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caria, were documented in 23 children (21%). Treatment-related adverse effects, including edema, urticaria, vesicles, erosions, dermatitis, and lymphadenopathy were seen in 58 children (54%). Thirteen percent of children discontinued treatment after 2 months owing to a variety of factors, including adverse effects, difficulties commuting to the treatment center, and/or the disruption caused by weekly absences from school.

Fourteen patients showed complete hair regrowth after 6 months of treatment (13%); 27 had partial regrowth (25%). At 12 months, 12 patients had complete hair regrowth (11%), and 23 had partial regrowth (21%). The remainder did not experience any hair growth or stopped treatment (Table 1).

Twelve patients 10 years or younger had marked sensitization reactions (32%) compared with 11 patients aged 11 to 18 years (16%) (P = .07) (Table 2). Twenty-seven of 38 patients younger than 10 years had adverse effects during DPCP treatment (71%) compared with 31 of 70 patients aged 11 to 18 years (44%) (P = .01).

None of the known prognostic factors,3 including age at onset, extent of involvement, atopy, coexistent autoimmune disease, family history, ophiasis pattern, or nail involvement, was associated with greater likelihood of having partial or complete response to DPCP therapy (data not shown).

Comment. To our knowledge, this study represents one of the largest studies of treatment responses to DPCP in patients younger than 18 years. Overall, approximately one-third of children in our study showed improvement in hair density with DPCP treatment. However, the response dropped off at between 6 months and 1 year of treatment, and overall, only 10% of our patients had complete hair regrowth. Adverse effects of DPCP were slightly more common in young children than in older children. In general, adverse effects warranting discontinuation of DPCP treatment were not common.

Study limitations include the small number of patients, the retrospective nature of the study, and incomplete documentation in some cases. Although hair regrowth in a proportion of our patients could be considered spontaneous, this is unlikely for the vast majority of our patients. Our patient population was composed of children with advanced hair loss who were refractory to topical treatments, and many had the disease beyond the time at which spontaneous regrowth would be expected to occur. Further large-scale studies of DPCP use in children with alopecia areata are needed.

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