Tapinarof Cream 1% Once Daily for the Treatment of Extensive Atopic Dermatitis in Adolescents and Children: Outcomes from the 4-Week Maximal Usage Trial

INTRODUCTION

Tapinarof™, Dermati Sciences, Inc. is a first-in-class, non-absorbed, topical, and hydrocoricosteroid receptor agonist approved by the Food and Drug Administration in May 2022 for the treatment of plaque psoriasis in adults and, under investigation for the treatment of psoriasis in children 2 years of age and, for atopic dermatitis (AD) in adults and children down to 2 years of age.

Tapinarof cream 1% once daily (QD) demonstrated significant efficacy versus vehicle and was well tolerated in adults and adolescents with AD in a 12-week phase 2 trial.7

Efficacy was generally maintained through the last trial visit, 4 weeks after completing treatment.

Tapinarof cream 1% was demonstrated to be efficacious versus vehicle and was well tolerated in adults with mild to severe psoriasis in two identical, 12-week, phase 3 trials, PSIDANG1 and 2.2

Efficacy continued to improve beyond the 12-week trials in PSIDANG2, the long-term extension trial, with an ~4-month treatment.

The pharmacokinetic (PK) profile of tapinarof cream across psoriasis and AD trials is characterized by minimal-to-no systemic absorption and decreasing plasma concentrations over the course of treatment.1

OBJECTIVE

To assess the PK, safety, and tolerability of tapinarof cream 1% QD in adolescents and children with extensive AD in the 4-week maximal usage trial.

MATERIALS AND METHODS

Trial Design

In this phase 2 multicenter, open-label maximal usage trial, adolescents and children with extensive AD received tapinarof cream 1% QD for 4 weeks.

Figure 1

Tapinarof PK was assessed at Day 1 (baseline) and 28.

Tapinarof was measured in plasma with a highly sensitive assay (<50 pg [10–12 g]/mL [0.05 ng/mL]).

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Trial Design

This was the first trial evaluating tapinarof cream 1% QD in children with AD under 12 years of age.

RESULTS

Baseline Patient Demographics and Disease Characteristics

Table 1. Baseline Demographics and Disease Characteristics

<table>
<thead>
<tr>
<th>Age Group</th>
<th>Children aged 2–11 years (n=27)</th>
<th>Adolescents aged 12–17 years (n=28)</th>
<th>Overall (n=55)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean (SD)</td>
<td>7.0 (4.5)</td>
<td>15.0 (3.3)</td>
<td>11.0 (4.9)</td>
</tr>
<tr>
<td>Male (%)</td>
<td>11 (41)</td>
<td>16 (57)</td>
<td>27 (49)</td>
</tr>
<tr>
<td>PGA (%)</td>
<td>3.7 (3.4)</td>
<td>3.8 (2.3)</td>
<td>3.8 (2.5)</td>
</tr>
<tr>
<td>BSA (%BSA) mean (SD); min–max</td>
<td>42.0 (10.0); 35.0–72.0</td>
<td>42.8 (15.1); 26.0–90.0</td>
<td>43.2 (15.6); 35.0–90.0</td>
</tr>
</tbody>
</table>

Adverse event category

Table 2. Table 2. Adverse event category

<table>
<thead>
<tr>
<th>Category</th>
<th>Children aged 2–11 years (n=27)</th>
<th>Adolescents aged 12–17 years (n=28)</th>
<th>Overall (n=55)</th>
</tr>
</thead>
<tbody>
<tr>
<td>TEAE of special interest, n (%)</td>
<td>8 (66.7)</td>
<td>9 (32.1)</td>
<td>17 (30.9)</td>
</tr>
<tr>
<td>Treatment-related TEAE</td>
<td>0</td>
<td>2 (7.1)</td>
<td>2 (3.6)</td>
</tr>
<tr>
<td>TEAE leading to trial discontinuation</td>
<td>0</td>
<td>1 (3.6)</td>
<td>1 (1.8)</td>
</tr>
<tr>
<td>TEAE leading to trial discontinuation §</td>
<td>0</td>
<td>1 (3.6)</td>
<td>1 (1.8)</td>
</tr>
</tbody>
</table>

Week 4 data; §age groups 7–11 and 12–17 years n=0 at Week 1, and no Week 4 data. Safety population.

Endpoints and Statistical Analyses

Endpoints:

The incidence and frequency of treatment-emergent adverse events (TEAEs).

Mean Investigator-assessed Local Tolerability Score:

Tapinarof cream PK parameters on Day 1, including:

- Maximum plasma concentration (Cmax)
- Time to maximum plasma concentration (Tmax)

Statistical Analyses:

- The PK population included all patients who underwent sampling and had concentration-time data.
- Tapinarof was measured in plasma with a highly sensitive assay lower limit of quantitation=50 pg [10–12 g]/mL.
- Safety analyses included all patients who received at least 1 application of tapinarof.

CONCLUSIONS

This trial is the first report of tapinarof use in children below 12 years of age, and uses the same dosing regimen (1% QD) as that approved for adults with plaque psoriasis.

Tapinarof cream 1% QD demonstrated minimal-to-no systemic exposure in adolescents and children down to 2 years of age (vIGA-ADTM), even when measured with a highly sensitive assay (<50 pg [10–12 g]/mL).

- Treatment-related TEAEs were minimal (±33.3%, 12/36 total) and were mild (0–16.7%).


REFERENCES


ACKNOWLEDGMENTS

The authors thank the participating investigators, their patients and families, and colleagues involved in the conduct of this trial for their contributions. The authors also thank LF Burton, MA, for medical writing support and editorial consultation for the manuscript. The authors also thank Abigail Au, BS, for the project management, Ahn Hyun-Ju, PhD, for her significant contributions, and S. Nakamura, PhD, for data management. The authors also thank the clinical researchers at the participating sites, and the study coordinators, who provided support and expertise for the collection of data.

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