Deucravacitinib, an oral, selective, allosteric tyrosine kinase 2 inhibitor, in scalp, nail, and palmoplantar psoriasis: subgroup analyses of the phase 3 POETYK PSO-1 and PSO-2 trials

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Introduction

• Deucravacitinib, an oral, selective, allosteric tyrosine kinase 2 (TYK2) inhibitor, is approved by the US Food and Drug Administration for the treatment of plaque psoriasis in patients ≥18 years of age with a body mass index (BMI) ≥20 kg/m² who are candidates for systemic therapy or phototherapy.

• Deucravacitinib binds to the regulatory domain instead of the catalytic domain of TYK2; >90% has greater selectivity for TYK2 vs JAK1, JAK2 (1.2) and 100-fold greater selectivity for TYK2 vs JAK-3 (2.5), respectively.

• In vitro studies demonstrated that deucravacitinib was rapid, potent, and selective to TYK2; 100% had minimal effect on C-Reactive Protein (CRP) and Interleukin (IL)-1β, and no effect on IL-17.

• Inhibition of TYK2-mediated cytokine signaling in vivo demonstrated that deucravacitinib was rapid and potent in patients with psoriasis in Phase 1 and Phase 2 studies based on the clinical efficacy and safety profile.

• Clinical efficacy and safety and tolerability were maintained for up to 2 years.

Objective

• Evaluate the efficacy of deucravacitinib treatment in patients with moderate to severe plaque, fingernail, and palmoplantar psoriasis.

Methods

Study designs

• POETYK PSO-1 (NCT04610724) and PSO-2 (NCT04609035) included subjects with moderate to severe plaque psoriasis (ps-SCORPION; i.e., body area involvement ≤60%); (figure 1)

Figure 1. Study designs

Results

Table 1. Baseline patient demographics and disease characteristics

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Placebo (n = 72)</th>
<th>Deucravacitinib 6 mg QD (n = 57)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Race (%)</td>
<td>Asian 7.8% vs 8.1%</td>
<td>Asian 7.1% vs 8.9%</td>
</tr>
<tr>
<td>Age (years)</td>
<td>44.4 ± 11.4 vs 44.3 ± 11.8</td>
<td>44.3 ± 11.9 vs 44.5 ± 11.8</td>
</tr>
<tr>
<td>Disease type (%)</td>
<td>85.0% vs 86.0%</td>
<td>85.7% vs 84.9%</td>
</tr>
<tr>
<td>Psoriasis Severity Index (PSI)</td>
<td>474 (56.2)</td>
<td>11.6 (6.7)</td>
</tr>
<tr>
<td>Palmoplantar PGA score of 0 or 1 (pp-PGA 0/1) and palmoplantar PASI (pp-PASI) response in patients with moderate to severe palmoplantar psoriasis</td>
<td>52.1 (25.9)</td>
<td>18.6 (12.7)</td>
</tr>
</tbody>
</table>

Figure 2. ss-PGA 0/1

Figure 3. Ps-SCORPION responses through Week 24 (pooled POETYK PSO-1 and PSO-2; mBOCF)

Figure 4. ps-SCORPION responses through Week 52 in placebo crossovers (pooled POETYK PSO-1 and PSO-2; mBOCF)

Figure 5. Fingertip psoriasis

Figure 6. Palmoplantar psoriasis

Table 2. Clinical efficacy and overall safety and tolerability

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Figure 7. ps-PASI 0/1 responses through Week 24 (pooled POETYK PSO-1 and PSO-2; mBOCF)

Figure 8. Change from baseline in ps-PASI through Week 24 (pooled POETYK PSO-1 and PSO-2; mBOCF)

Conclusions

• Patients with moderate to severe plaque, fingernail, and palmoplantar psoriasis who were randomized to deucravacitinib had significantly more patients achieving Psoriasis Area and Severity Index (PASI) 50, ≥50% reduction from baseline in PASI; PASI 75, ≥75% reduction from baseline in PASI; QD, once daily.

References


Disclosures

• None of the authors have a financial relationship with an organization that has a direct interest in the information presented in the manuscript that would be considered to constitute a conflict of interest.

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