Efficacy of deucravacitinib, an oral, selective, allosteric tyrosine kinase 2 (TYK2) inhibitor, in scalp psoriasis by baseline Psoriasis Area and Severity Index (PASI) and baseline body surface area (BSA): a subanalysis of the phase 3 clinical trial data

Andrew Blauvelt, Howard Sofen, Jo Lambert, Joseph F. Merola, Mark Lebwohl, Kim Hoyt, Renata M. Kisa, Subhashis Banerjee, Thomas Schirratt, Jeffrey J. Crowley

Oregon Medical Research Center, Portland, OR, USA; University of California Los Angeles and Dermatology Research Associates, Los Angeles, CA, USA; Mount Sinai, New York, NY, USA; Oregon Medical Research Center, Portland, OR, USA; Baker Dermatology, Bakerfield, CA, USA.

Introduction

TYK2 is an intracellular enzyme that regulates signaling of various interferon cytokines. Deucravacitinib (POETYK PSO-1 and PSO-2) is a selective, allosteric TK2 inhibitor. TK2 inhibitors have been extensively studied for their anti-inflammatory role in the skin and other tissues, for example, in atopic dermatitis. TK2 inhibitors have been shown to improve psoriasis across multiple body areas. However, the role of TK2 inhibition in the highly localized disease of scalp psoriasis has not been evaluated.

Methods

POETYK PSO-1 and PSO-2 study design

• All patients were adult patients with moderate to severe scalp psoriasis at baseline (baseline PASI score ≥ 12 and ≤ 15%). Patients were followed up through 52 weeks.

• POETYK PSO-1 consisted of 2 parts: Part 1 (POETYK PSO-1/Part 1) and Part 2 (POETYK PSO-1/Part 2). Part 1 included 2 groups: Placebo to deucravacitinib arm, with patients randomized to a 4-week washout period followed by a 16-week treatment period. Part 2 included 2 groups: Deucravacitinib to Placebo arm, with patients randomized to a 4-week washout period followed by a 16-week treatment period.

• In Part 1, patients who received continuous deucravacitinib 6 mg QD without change from Day 1 through Week 52 were included in the analysis.

• In Part 2, patients who received continuous placebo through Week 16 were included in the analysis. Placebo patients crossed over to deucravacitinib at Week 16.

• Baseline PASI score: 12-<15 and ≥15

• Baseline BSA involvement: 10%-≤15% and ≥15%

• Baseline psoriasis severity: ss-PGA 0/1, 2, 3

• Anatomically distinct scalp regions were assessed at baseline and Week 12.

• Treatment arms: Placebo to deucravacitinib (Part 1, n = 199) and deucravacitinib to Placebo (Part 2, n = 162).

Results

Clinical efficacy

• Baseline PASI score: 12-<15 and ≥15

• Baseline BSA involvement: 10%-≤15% and ≥15%

• Baseline psoriasis severity: ss-PGA 0/1, 2, 3

Efficacy of deucravacitinib, an oral, selective, allosteric tyrosine kinase 2 (TYK2) inhibitor, in scalp psoriasis by baseline PASI score (POETYK PSO-1/Part 1, NRI)

POETYK PSO-1/Part 1 POP Primary endpoint

• In POETYK PSO-1/Part 1, PSSI 90 response rates were higher with deucravacitinib 6 mg QD compared with placebo at Week 16 in both baseline PASI score subgroups ($p$ values of 0.031 and 0.002 for PASI 12-<15 and ≥15) and both BSA involvement subgroups ($p$ values of 0.036 and 0.002 for BSA 10%-≤15% and ≥15%).

• In POETYK PSO-1/Part 2, PSSI 90 response rates were maintained in both PASI score subgroups through Week 52 ($p$ values ≤ 0.001).

• In POETYK PSO-1/Part 2, digital, unblinded, and blinded PSSI 90 response rates comparing deucravacitinib to placebo were consistently > 90% at Week 52 in both PASI score and BSA involvement subgroups ($p$ values ≤ 0.001).

Efficacy of deucravacitinib, an oral, selective, allosteric tyrosine kinase 2 (TYK2) inhibitor, in scalp psoriasis by baseline BSA involvement (POETYK PSO-1/Part 2, NRI)

POETYK PSO-1/Part 2 POP Primary endpoint

• In POETYK PSO-1/Part 2, PSSI 90 response rates were higher with deucravacitinib 6 mg QD compared with placebo at Week 16 in both BSA involvement subgroups ($p$ values of 0.009 and 0.003 for BSA 10%-≤15% and ≥15%).

• In POETYK PSO-1/Part 2, PSSI 90 response rates were maintained in both BSA involvement subgroups through Week 52 ($p$ values ≤ 0.001).

Adverse events

• Adverse events were generally mild to moderate severity.

• Nervous system disorders: headache (19%), nervousness (14%), dizziness (11%), insomnia (9%), and somnolence (7%)

• Gastrointestinal disorders: nausea (32%), diarrhea (25%), constipation (15%), and abdominal pain (11%)

• Dermatologic disorders: acne (17%), pruritus (10%), and dry skin (8%)

• Respiratory, thoracic, and mediastinal disorders: cough (14%), bronchitis (10%), and sinusitis (8%)

• Musculoskeletal and connective tissue disorders: arthralgia (9%), myalgia (8%), and bone pain (7%)

• Cardiovascular disorders: hypertension (4%)

• Hematologic disorders: leukopenia (2%), lymphopenia (2%), and neutropenia (2%)

• Metabolic and nutritional disorders: weight increase (8%), weight decrease (6%), and weight loss (3%)

• Vascular disorders: arterial thrombosis (2%)

Conclusions

TYK2 inhibition may provide a novel, effective, and safe treatment option for scalp psoriasis.

References


Acknowledgments

The authors thank the study participants for their time and effort. They also thank the colleagues who contributed to the study. The authors also acknowledge the role of the data management and statistical analysis team.

Disclosure

All authors have completed the ICMJE uniform Disclosure form at www.icmje.org and declare no other affiliations, financial or otherwise, that could be perceived as influencing the work described in this article. All authors meet the ICMJE criteria for authorship.

Funding

This work was supported by Bristol Myers Squibb, Princeton, NJ, USA.