Atopic dermatitis (AD) is a chronic, inflammatory skin disease that greatly impacts patients’ quality of life. 1,2,3 Janka lesions (JAKs), modular inflammatory cytokines involved in the pathogenesis of AD and may also directly modulate itch. 4 Ruxolitinib (RUX), a patient, select inhibitor of Jak1 and Jak3, is in a phase 2 study (NCT03181592). RUX cream provided significant efficacy in patients with AD and a safety profile similar to vehicle. 5

**Background**

- Atopic dermatitis (AD) is a chronic, inflammatory skin disease that greatly impacts patients’ quality of life.
- Janka lesions (JAKs), modular inflammatory cytokines involved in the pathogenesis of AD and may also directly modulate itch.
- Ruxolitinib (RUX) is a patient, select inhibitor of Jak1 and Jak3.

**Objectives**

- To report efficacy and safety of RUX cream in patients with AD in two phase 3 studies
- The primary endpoint was the proportion of patients achieving IGA-treatment success
- The primary and main secondary endpoints were analyzed by logistic regression using the intent-to-treat population
- No notable safety findings (either local or systemic)

**Methods**

**Patients and Study Design**

- Eligible patients were aged ≥12 years with AD for ≥2 years, an Investigator’s Global Assessment (IGA) score of 2 or 3, and 3% to 20% affected body surface area
- Patients were randomized into a 1:1 (vehicle vs. 1.5% RUX cream) comparison in 2 phase 3 studies (TRuE-AD1 and TRuE-AD2).
- Patients were randomized at baseline and during the study, use of AD topical therapies (except bland emollients) during the washout period and during the study
- Any baseline criteria that could interfere with study conduct, interpretation of data, or patient’s well-being
- TRuE-AD1 and TRuE-AD2 had identical study designs (Figure 1).

**Assessments**

- The primary endpoint was the proportion of patients achieving IGA-treatment success (IGA-TS, EASI-75, and ≥4-point reduction in itch NRS score)
- Secondary endpoints included: proportion of patients achieving clearance of all lesions of AD, Visit every 4 weeks

**Conclusions**

- Ruxolitinib cream showed superior efficacy vs vehicle in IGA-TS, EASI-75, and 24-point reduction in itch NRS score in these two phase 3 studies
- Application of ruxolitinib cream brought about rapid (within 12 hours of initiation of therapy), substantial, and sustained itch reduction
- Ruxolitinib cream demonstrated a dual mode of action: antipruritic and anti-inflammatory
- No notable safety findings (either local or systemic) were associated with treatment, on including sensitive skin areas
- The successful outcomes of TRuE-AD1 and TRuE-AD2 support the potential of ruxolitinib cream as an effective and well-tolerated topical treatment for patients with AD

**Efficacy**

- Significantly more patients treated with RUX cream regimens vs vehicle demonstrated IGA-TS (primary endpoint), responses were time and strength dependent (Figure 2)
- Both strengths of RUX cream showed greater improvement in mean percentage change in EASI scores vs vehicle; statistical significance was observed at Week 2 and later (Figure 4)
- Significantly greater reductions in itch NRS scores were observed within 12 hours of the application of RUX cream (1.5%, 0.75% OI; Figure 5) in vehicle
- Significantly more patients treated with RUX cream demonstrated clinically meaningful reduction in itch (24-point improvement in itch NRS) vs vehicle

**Safety**

- RUX cream was well tolerated and not associated with clinically significant application site reactions (Table 2)
- All treatment-related adverse events that were reported were expected and/or similar to vehicle
- No TEAEs suggestive of a relationship to bioavailability were observed

**Disclosures**

- KP has received honoraria from AbbVie, Biogen, Galapagos, Gilead Sciences, F. Hoffmann-La Roche, Incyte Corporation, Janssen, Janssen-Cilag, Medimmune, Menlo Therapeutics, Menlo Therapeutics, Inc, Merck, Mylan, Novartis, Pfizer, PPD, Regeneron, Shionogi, Stiefel, and Teva, has served on medical and/or advisory boards for AbbVie, Allergan, AstraZeneca, Dermira, Galapagos, Gilead Sciences, Genentech, Genzyme, GlaxoSmithKline, Janssen, Janssen-Cilag, Merck, Merck & Co, Inc, Menlo Therapeutics, Menlo Therapeutics, Inc, Moderna, Mylan, Norgine, Novartis, Pfizer, PPD, Regeneron, Roche, Sanofi, Stiefel, Teva, and TevaRx, has received research support from AbbVie, Allergan, AstraZeneca, Dermira, Galapagos, Genentech, Janssen, Janssen-Cilag, Merck, Merck & Co, Inc, Menlo Therapeutics, Menlo Therapeutics, Inc, Moderna, Mylan, Norgine, Novartis, Pfizer, PPD, Regeneron, Roche, Sanofi, Stiefel, and Teva, has received personal fees from AbbVie, AstraZeneca, Dermira, Galapagos, Genentech, Janssen, Janssen-Cilag, Merck, Merck & Co, Inc, Menlo Therapeutics, Menlo Therapeutics, Inc, Moderna, Mylan, Norgine, Novartis, Pfizer, PPD, Regeneron, Roche, Sanofi, Stiefel, and Teva, has received travel, accommodations, and expenses for participation in various advisory boards and/or educational activities from AbbVie, AstraZeneca, Dermira, Galapagos, Genentech, Janssen, Janssen-Cilag, Merck, Merck & Co, Inc, Menlo Therapeutics, Menlo Therapeutics, Inc, Moderna, Mylan, Norgine, Novartis, Pfizer, PPD, Regeneron, Roche, Sanofi, Stiefel, and Teva, and has received other support for travel, accommodations, and expenses for participation in various advisory boards and/or educational activities from AbbVie, AstraZeneca, Dermira, Galapagos, Genentech, Janssen, Janssen-Cilag, Merck, Merck & Co, Inc, Menlo Therapeutics, Menlo Therapeutics, Inc, Moderna, Mylan, Norgine, Novartis, Pfizer, PPD, Regeneron, Roche, Sanofi, Stiefel, and Teva.

**Acknowledgments**

- Supported by Incyte Corporation. Medical writing assistance was provided by Maye Hemmers, MD, an employee of Icon plc, North Wales, PA, USA, and was funded by Incyte Corporation.

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