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Efficacy and Safety of Ruxolitinib Cream Among Adolescents With Atopic Dermatitis: Pooled Results From Two Phase 3 Studies

Lawrence F. Eichenfield, MD,[1,2] Eric L. Simpson, MD, MCR,[3] Elaine C. Siegfried, MD,[4] Michael E. Kuligowski, MD, PhD, MBA,[5] May E. Venturanza, MD,[5] Kang Sun, PhD,[5] Amy S. Paller, MD[6]

[1]Departments of Dermatology and Pediatrics, University of California San Diego, San Diego, CA; [2]Rady Children's Hospital, San Diego, CA; [3]Oregon Health & Science University, Portland, OR; [4]Saint Louis University, St. Louis, MO; [5]Incyte Corporation, Wilmington, DE; [6]Northwestern University Feinberg School of Medicine, Chicago, IL

Background

- Atopic dermatitis (AD) is a highly pruritic inflammatory skin disease that most often begins in childhood and can persist into adolescence and adulthood[1]
- Janus kinases (JAKs) act downstream of proinflammatory cytokines and itch mediators involved in the pathogenesis of AD[2,3]
- Ruxolitinib cream is a topical selective inhibitor of JAK1 and JAK2 in development for the treatment of AD[4]
- In two phase 3 AD studies of identical design (TRuE-AD1 [NCT03745638] and TRuE-AD2 [NCT03745651]), ruxolitinib cream demonstrated anti-inflammatory activity with rapid and sustained antipruritic action vs vehicle and was well tolerated[5]

Objective

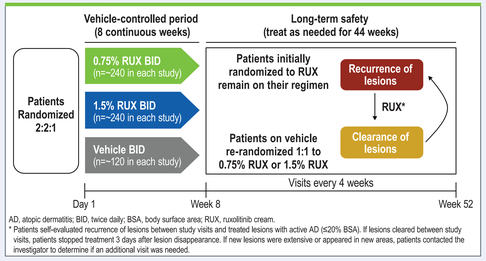
- To evaluate the efficacy and safety of ruxolitinib cream using pooled data from two phase 3 studies in adolescent patients with AD

Methods

Study Design and Patients

- Eligible patients were aged ≥12 years with AD for ≥2 years and had an Investigator's Global Assessment (IGA) score of 2 or 3 and 3%–20% affected body surface area (excluding scalp)
- Key exclusion criteria were unstable course of AD, other types of eczema, immunocompromised status, use of AD systemic therapies during the washout period and during the study, use of AD topical therapies (except bland emollients) during the washout period and during the study, and any serious illness or medical condition that could interfere with study conduct, interpretation of data, or patients' well-being
- TRuE-AD1 and TRuE-AD2 had identical study designs (**Figure 1**)
  - In both studies, patients were randomized (2:2:1) to 1 of 2 ruxolitinib cream strength regimens (0.75% twice daily [BID] or 1.5% BID) or vehicle cream BID for 8 weeks of double-blind treatment
  - Patients on ruxolitinib cream subsequently continued treatment for 44 weeks; patients initially randomized to vehicle were re-randomized 1:1 (blinded) to either ruxolitinib cream regimen

Figure 1. Study Design



AD, atopic dermatitis; BID, twice daily; BSA, body surface area; RUX, ruxolitinib cream.
* Patients self-evaluated recurrence of lesions between study visits and treated lesions with active AD (≤20% BSA). If lesions cleared between study visits, patients stopped treatment 3 days after lesion disappearance. If new lesions were extensive or appeared in new areas, patients contacted the investigator to determine if an additional visit was needed.

Assessments

- Efficacy endpoints included in this subanalysis of patients aged 12–17 years were similar to the primary analysis of the overall population and included the proportion of patients achieving IGA-treatment success (IGA-TS; score of 0 or 1 with ≥2-grade improvement vs baseline); ≥50%, ≥75%, and ≥90% improvement in Eczema Area and Severity Index score vs baseline (EASI-50, EASI-75, and EASI-90, respectively); and ≥4-point improvement in itch numerical rating scale (NRS4) score from baseline
- Safety and tolerability were assessed by treatment-emergent adverse events (AEs)

Statistical Analyses

- All analyses were conducted using the pooled data from both studies
- All data were analyzed by logistic regression and reported descriptively
- The efficacy population consisted of 236 patients (vehicle, n=43; 0.75% ruxolitinib cream, n=106; 1.5% ruxolitinib cream, n=87)
- The safety population consisted of all randomized patients (vehicle, n=45; 0.75% ruxolitinib cream, n=108; 1.5% ruxolitinib cream, n=92)

Results

Patients

- Of 245 randomized patients aged 12–17 years, 17 (6.9%) discontinued treatment during the 8-week vehicle-controlled period
- Distribution of baseline demographics and clinical characteristics was similar across treatment groups (**Table 1**)

Table 1. Patient Demographics and Baseline Clinical Characteristics

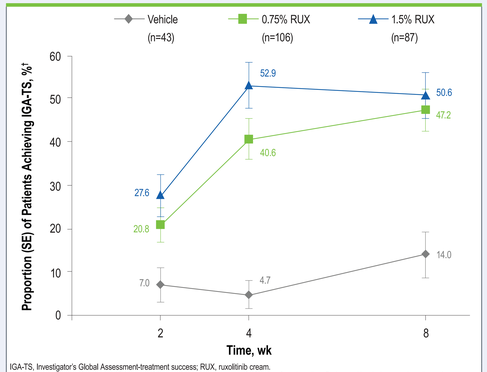
Characteristic	Vehicle (n=45)	0.75% RUX (n=108)	1.5% RUX (n=92)	Total (N=245)
Age, median (range), y	14.0 (12–17)	15.0 (12–17)	15.0 (12–17)	15.0 (12–17)
Female, n (%)	23 (51.1)	60 (55.6)	59 (64.1)	142 (58.0)
Race, n (%)				
White	33 (73.3)	75 (69.4)	72 (78.3)	180 (73.5)
Black	11 (24.4)	27 (25.0)	13 (14.1)	51 (20.8)
Asian	1 (2.2)	0	3 (3.3)	4 (1.6)
Other	0	6 (5.6)	4 (4.3)	10 (4.1)
Region, n (%)				
North America	31 (68.9)	76 (70.4)	64 (69.6)	171 (69.8)
Europe	14 (31.1)	32 (29.6)	28 (30.4)	74 (30.2)
BSA, mean (SD), %	10.8 (5.3)	10.8 (5.5)	10.4 (6.0)	10.6 (5.6)
EASI, mean (SD)	8.2 (5.0)	8.4 (4.6)	8.0 (5.2)	8.2 (4.9)
≤7, n (%)	23 (51.1)	48 (44.4)	45 (48.9)	116 (47.3)
>7, n (%)	22 (48.9)	60 (55.6)	47 (51.1)	129 (52.7)
IGA, n (%)				
2	13 (28.9)	25 (23.1)	23 (25.0)	61 (24.9)
3	32 (71.1)	83 (76.9)	69 (75.0)	184 (75.1)
Itch NRS score, mean (SD)	4.5 (2.4)	4.5 (2.3)	4.3 (2.4)	4.4 (2.4)
≥4, n (%)	24 (53.3)	60 (55.6)	50 (54.3)	134 (54.7)
Duration of disease, median (range), y	11.4 (2.9–16.9)	12.0 (0.1–18.1)	13.0 (2.4–17.9)	12.2 (0.1–18.1)
Facial involvement, n (%)*	19 (42.2)	45 (41.7)	41 (44.6)	105 (42.9)
Number of flares in past 12 mo, mean (SD)*	6.7 (6.8)	5.7 (8.1)	6.2 (6.9)	6.1 (7.4)

BSA, body surface area; EASI, Eczema Area and Severity Index; IGA, Investigator's Global Assessment; NRS, numerical rating scale; RUX, ruxolitinib cream.
* Patient reported.

Efficacy

- At Week 8, considerably more patients achieved IGA-TS with 0.75% and 1.5% ruxolitinib cream than with vehicle (47.2% and 50.6% vs 14.0%, respectively; **Figure 2**)

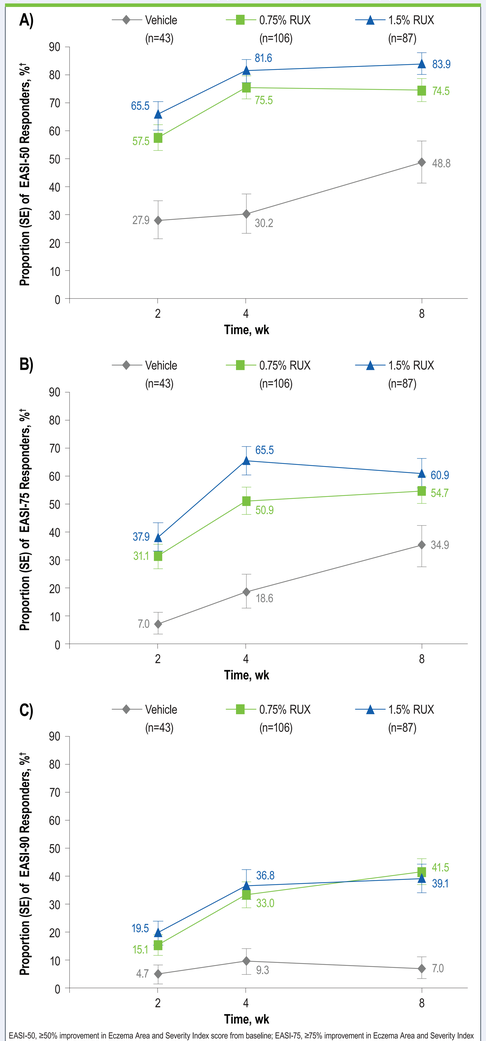
Figure 2. Proportion of Patients Achieving IGA-TS



IGA-TS, Investigator's Global Assessment-treatment success; RUX, ruxolitinib cream.
† Defined as patients achieving an IGA score of 0 or 1 with an improvement of ≥2 points from baseline. Patients with missing post-baseline values were imputed as nonresponders at Weeks 2, 4, and 8.

- Substantially more patients who applied 0.75% and 1.5% ruxolitinib cream vs vehicle achieved EASI-50 (74.5%/83.9% vs 48.8%), EASI-75 (54.7%/60.9% vs 34.9%), and EASI-90 (41.5%/39.1% vs 7.0%) at Week 8 (**Figure 3**)

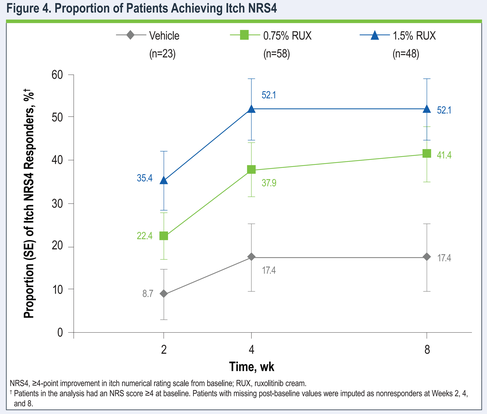
Figure 3. Proportion of Patients Achieving (A) EASI-50, (B) EASI-75, and (C) EASI-90



EASI-50, ≥50% improvement in Eczema Area and Severity Index score from baseline; EASI-75, ≥75% improvement in Eczema Area and Severity Index score from baseline; EASI-90, ≥90% improvement in Eczema Area and Severity Index score from baseline; RUX, ruxolitinib cream.
† Patients with missing post-baseline values were imputed as nonresponders at Weeks 2, 4, and 8.

- At Week 8, approximately 1 of every 2 patients treated with 0.75% and 1.5% ruxolitinib cream achieved itch NRS4 (41.4% and 52.1%, respectively) vs 17.4% with vehicle (**Figure 4**)

Figure 4. Proportion of Patients Achieving Itch NRS4



NRS4, ≥4-point improvement in itch numerical rating scale from baseline; RUX, ruxolitinib cream.
† Patients in the analysis had an NRS score ≥4 at baseline. Patients with missing post-baseline values were imputed as nonresponders at Weeks 2, 4, and 8.

- Clinical pictures illustrating the efficacy of ruxolitinib cream in adolescent patients with AD are shown in **Figure 5**

Figure 5. Clinical Images in Adolescent Patients Throughout Treatment

RUX, ruxolitinib cream.

Safety

- Treatment with ruxolitinib cream was not associated with notable local or systemic safety signals, including on sensitive skin areas
- Treatment-related AEs occurred in 4.6% and 3.3% of patients who applied 0.75% and 1.5% ruxolitinib cream, respectively, vs 11.1% who applied vehicle; none were serious (**Table 2**)
- No patient discontinued treatment because of an AE

Table 2. Treatment-Emergent Adverse Events During the 8-Week Vehicle-Controlled Period

n (%)	Vehicle (n=45)	0.75% RUX (n=108)	1.5% RUX (n=92)
Patients with TEAE	17 (37.8)	27 (25.0)	16 (17.4)
Patients with treatment-related AE	5 (11.1)	5 (4.6)	3 (3.3)
Most common treatment-related AEs*			
Application site burning	2 (4.4)	1 (0.9)	1 (1.1)
Application site pruritus	2 (4.4)	2 (1.9)	0
Application site erythema	1 (2.2)	1 (0.9)	0
Skin exfoliation	1 (2.2)	0	1 (1.1)
Discontinuation due to a TEAE	0	0	0
Patients with serious TEAE	0	0	0

AE, adverse event; RUX, ruxolitinib cream; TEAE, treatment-emergent adverse event.
* Occurring in >0.5% of the total adolescent patient population.

Conclusions

- **Overall, the efficacy and safety profile of ruxolitinib cream in adolescents was comparable to the overall patient population (adolescents and adults)[5]**
- **Ruxolitinib cream was well tolerated and associated with dual anti-inflammatory and antipruritic effects in adolescents with AD**
  - **The AE profile was similar to vehicle; the rate of application site reactions was low**
  - **Ruxolitinib cream demonstrated substantially higher levels of efficacy vs vehicle for the efficacy endpoints reported here**
- **These results demonstrate the potential of ruxolitinib cream as an effective and well-tolerated topical treatment for adolescent patients with AD**

Disclosures

LFE has served as an investigator, consultant, speaker, or data safety monitoring board member for AbbVie, Almirall, Arcutis, Asana, Dermavant, Eli Lilly, Forte Biosciences, Galderma, Ichnos/Glenmark, Incyte Corporation, Janssen, LEO Pharma, Novartis, Ortho Dermatologics, Otsuka, Pfizer, Regeneron, and Sanofi Genzyme. ELS is an investigator for AbbVie, Eli Lilly, Galderma, Kyowa Hakko Kirin, LEO Pharma, Merck, Pfizer, and Regeneron; and is a consultant with honorarium for AbbVie, Eli Lilly, Forte Bio, Galderma, Incyte Corporation, LEO Pharma, Menlo Therapeutics, Novartis, Pfizer, Regeneron, Sanofi Genzyme, and Valeant. ECS has received consulting fees from AbbVie, Boehringer Ingelheim, Incyte Corporation, LEO Pharma, Novan, Novartis, Pfizer, Pierre Fabre, Regeneron, Sanofi Genzyme, UCB, and Verrica; has served as a contract researcher for AI Therapeutics; has received grant funding from Pfizer; has served as an investigator for Janssen; has received institutional funding related to clinical trial sponsorship from Janssen, Lilly, Pierre Fabre, Regeneron, and Verrica; and has served as a data safety monitoring board member for LEO Pharma, Novan, Pfizer, and UCB. MEK, MEV, and KS are employees and shareholders of Incyte Corporation. ASP has served as an investigator, speaker, or data safety monitoring board member for AbbVie, Abeona, Almirall, Anaptysbio, Asana, Boehringer Ingelheim, Bridgebio, Dermavant, Dermira, Eli Lilly, Exicure, Forte, Galderma, Incyte Corporation, InMed, Janssen, Lenus, LEO Pharma, Lifemax, Novartis, Pfizer, Rapt, Regeneron, Sanofi Genzyme, Sol Gel, and UCB.

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References

1. Silverberg JI. *Dermatol Clin*. 2017;35(3):283-289. **2.** Bao L, et al. *JAKSTAT*. 2013;2(3):e24137. **3.** Oetjen LK, et al. *Cell*. 2017;171(1):217-228. **4.** Quintas-Cardama A, et al. *Blood*. 2010;115(15):3109-3117. **5.** Papp K, et al. *Br J Dermatol*. 2020;183(4):e116.

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