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# 12-Week Efficacy and Safety Data of Ruxolitinib Cream in Adult Patients With Atopic Dermatitis: Results From a Phase 2 Study

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# Presenting Author Disclosures

- Leon H. Kircik, MD, has served either as an investigator, consultant, or speaker for Amgen, Anaptys, Eli Lilly, Glenmark, Incyte, Kamedis, L’oreal, Menlo, Novartis, Ortho Dermatologics, Pfizer, Regeneron, Sanofi, Sun Pharma, and Taro

# Atopic Dermatitis and JAK Signaling

- Common inflammatory skin disorder[1]
  - Prevalence is ~15%–20% in children and ~5%–10% in adults
- Potent topical therapies are needed for AD[2]
- Topical corticosteroids have well-known side effects[3]
- JAKs modulate inflammatory cytokines involved in the pathogenesis of AD[4-6] and may directly modulate itch[7]
- Ruxolitinib (RUX) is a potent, selective inhibitor of JAK1 and JAK2[8]
  - Safety and efficacy of RUX cream were demonstrated in adult patients with AD following 8 weeks of treatment (NCT03011892)[9]

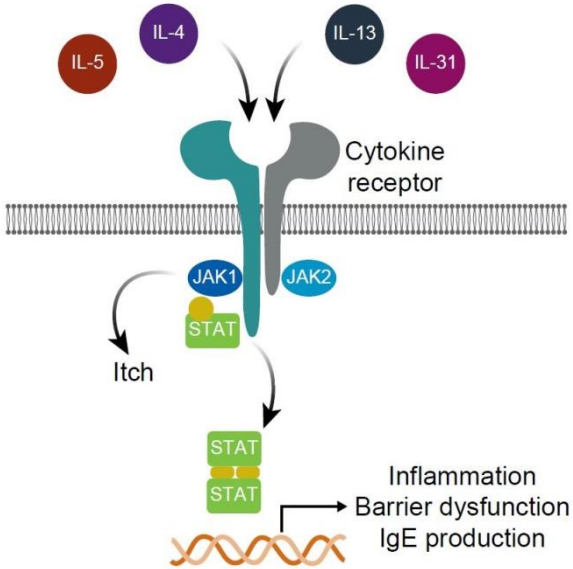
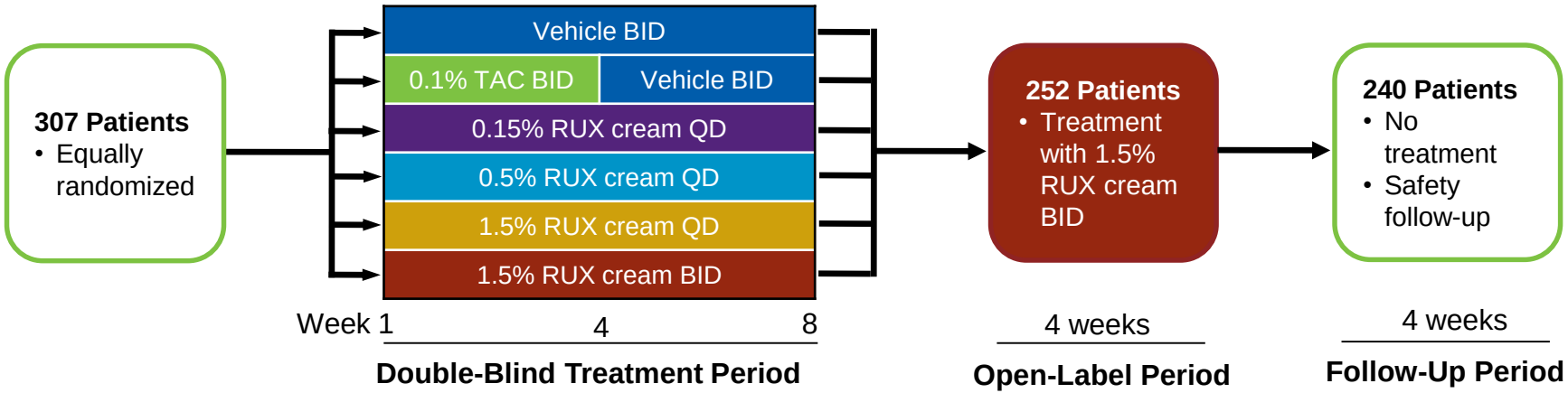



Figure created with BioRender

AD, atopic dermatitis; IgE, immunoglobulin E; IL, interleukin; JAK, Janus kinase; RUX, ruxolitinib; STAT, signal transducer and activator of transcription.

1. Silverberg JI. *Dermatol Clin*. 2017;35(3):283-289; 2. Wei W, et al. *J Dermatol*. 2018;45(2):150-157; 3. Nygaard U, et al. *Dermatology*. 2017;233(5):333-343; 4. Damsky W and King BA. *J Am Acad Dermatol*. 2017;76(4):736-744; 5. Bao L, et al. *JAKSTAT*. 2013;2(3):e24137; 6. Furue M, et al. *Allergy*. 2018;73(1):29-36; 7. Oetjen LK, et al. *Cell*. 2017;171(1):217-228; 8. Quintas-Cardama A, et al. *Blood*. 2010;115(15):3109-3117; 9. Kim BS, et al. A phase 2, randomized, dose-ranging, vehicle- and active-controlled study to evaluate the safety and efficacy of ruxolitinib cream in adult patients with atopic dermatitis. Presented at: European Academy of Dermatology and Venereology; September 12–16, 2018; Paris, France.

# Study Design




- Here we report efficacy and safety data in adult patients with AD after treatment with 1.5% RUX cream BID for 12 continuous weeks or after switching to 1.5% RUX cream BID following 8 weeks of other RUX cream regimens or control (vehicle or active [0.1% triamcinolone cream])
  - **Primary endpoint:** mean percentage change from baseline in EASI score at Week 4 in the RUX cream 1.5% BID arm vs vehicle
    - Noninferiority testing of RUX cream vs 0.1% triamcinolone BID was also performed
  - **Secondary and exploratory endpoints:** responder rates (IGA* and EASI), itch NRS score, and safety

BID, twice daily; EASI, Eczema Area and Severity Index; IGA, Investigator's Global Assessment; NRS, numerical rating scale; QD, once daily; TAC, triamcinolone acetonide cream.
* IGA score of 0–1 with an improvement of ≥2 points from baseline.

# Patient Eligibility

## Key inclusion criteria

- Patients aged 18–70 years with active AD
- History of AD ≥2 years
- IGA of 2 or 3
- BSA involvement of 3%–20%

## Key exclusion criteria

- Clinically meaningful, active infections
- Use of other topical AD treatments within 2 weeks of baseline
- Systemic drug use within 4 weeks of baseline
- Other conditions that could complicate study assessments

BSA, body surface area.

# Patient Demographics and Baseline Clinical Characteristics

| Demographic | Total (N=307) |
|---|---|
| **Age, median (range), years** | 35.0 (18.0–70.0) |
| **Female, n (%)** | 168 (54.7) |
| **Race, n (%)** | |
| White | 172 (56.0) |
| Black | 85 (27.7) |
| Asian | 41 (13.4) |
| Other | 9 (2.9) |

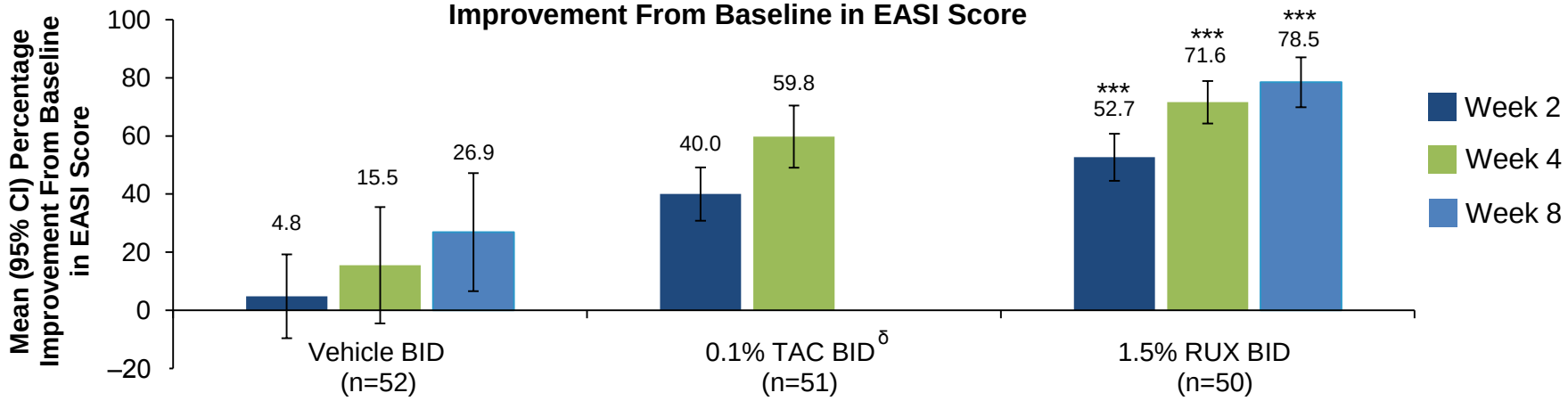
| Clinical Characteristic | Total (N=307) |
|---|---|
| **BSA, mean ± SD, %** | 9.6±5.4 |
| **Baseline EASI, mean ± SD** | 8.4±4.7 |
| ≤7, n (%) | 147 (47.9) |
| >7, n (%) | 159 (51.8) |
| Missing, n (%) | 1 (0.3) |
| **Baseline IGA, n (%)** | |
| 2 | 95 (31) |
| 3 | 210 (69) |
| **Itch NRS score,* mean ± SD** | 6.0±2.1 |
| **Duration of disease, median (range), years** | 20.8 (0.1–66.1) |
| **Number of flares in last 12 months, mean ± SD** | 7.3±23.3 |

Demographics and baseline clinical characteristics were evenly distributed across all treatment groups

* Range of NRS, 0–10 (0, no itch; 10, worst imaginable itch).

# Double-Blind Period: Efficacy Results

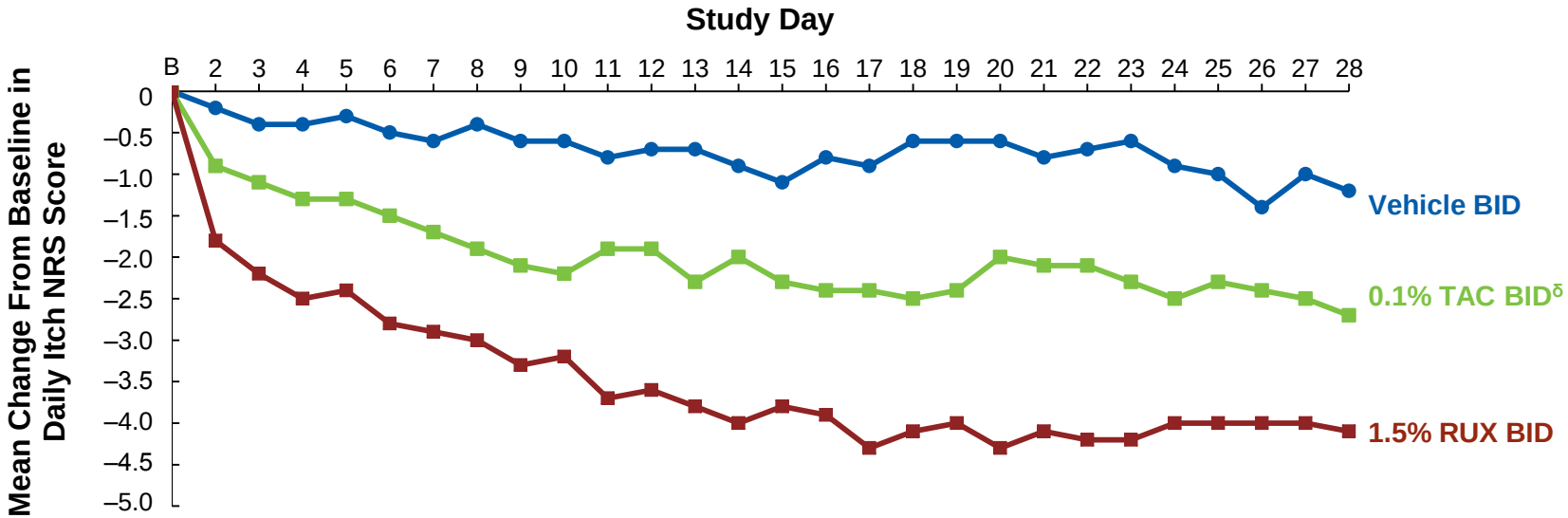
- RUX cream significantly improved EASI scores vs vehicle at Weeks 2, 4, and 8
- 1.5% RUX cream showed the highest efficacy among all treatment arms (across all efficacy endpoints)
- 1.5% RUX cream BID demonstrated noninferiority to triamcinolone in EASI scores (Weeks 2 and 4) with numerically greater rates of improvement
- 1.5% RUX cream BID was associated with significantly more IGA responders‡ vs vehicle at Weeks 4 and 8




*** *P*<0.001 vs vehicle.
‡ Defined as a patient achieving an IGA score of 0–1 with an improvement of ≥2 points from baseline. δ TAC arm received TAC 0.1% cream through Week 4 and vehicle thereafter.

# Rapid Reduction in Itch

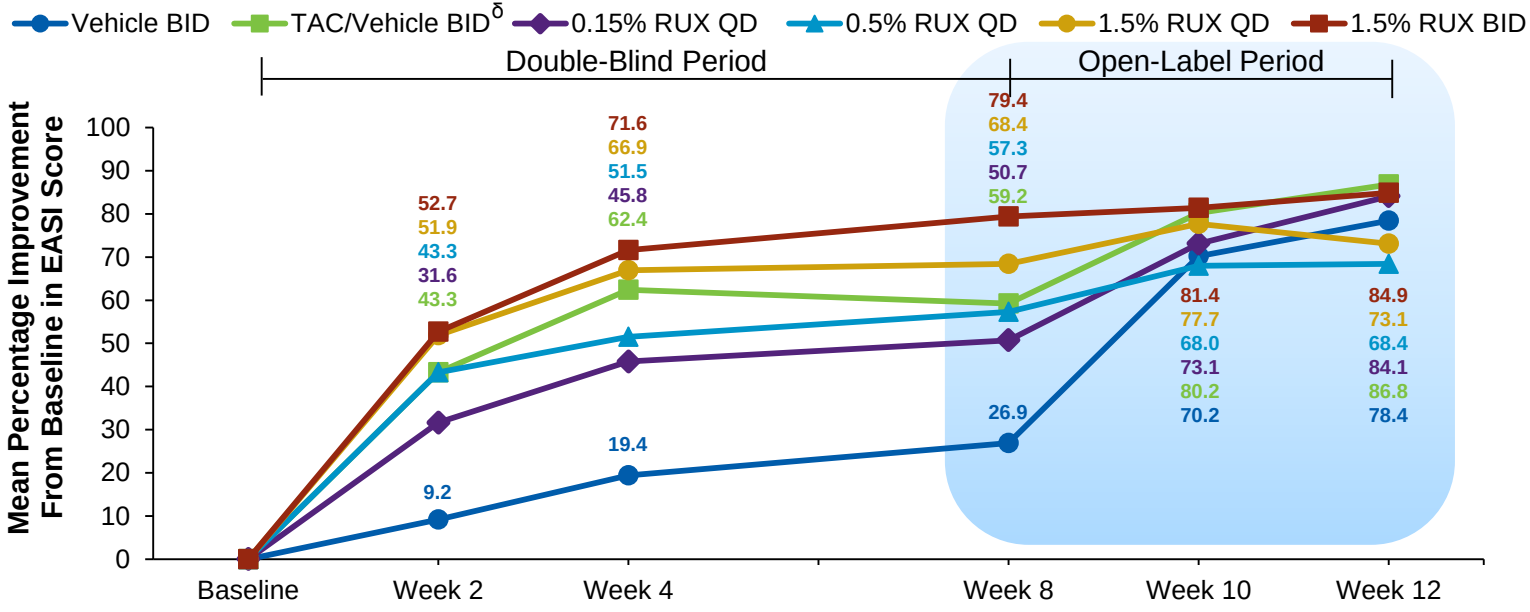
- Significant reductions in itch NRS scores* were observed within 36 hours of first application of 1.5% RUX cream BID vs vehicle (–1.8 vs –0.2; *P*<0.0001)




B, baseline.
* Range of NRS, 0–10 (0, no itch; 10, worst imaginable itch). δ TAC arm received TAC 0.1% cream through Week 4 and vehicle thereafter.

# 12-Week Data: Improvement From Baseline in EASI Score

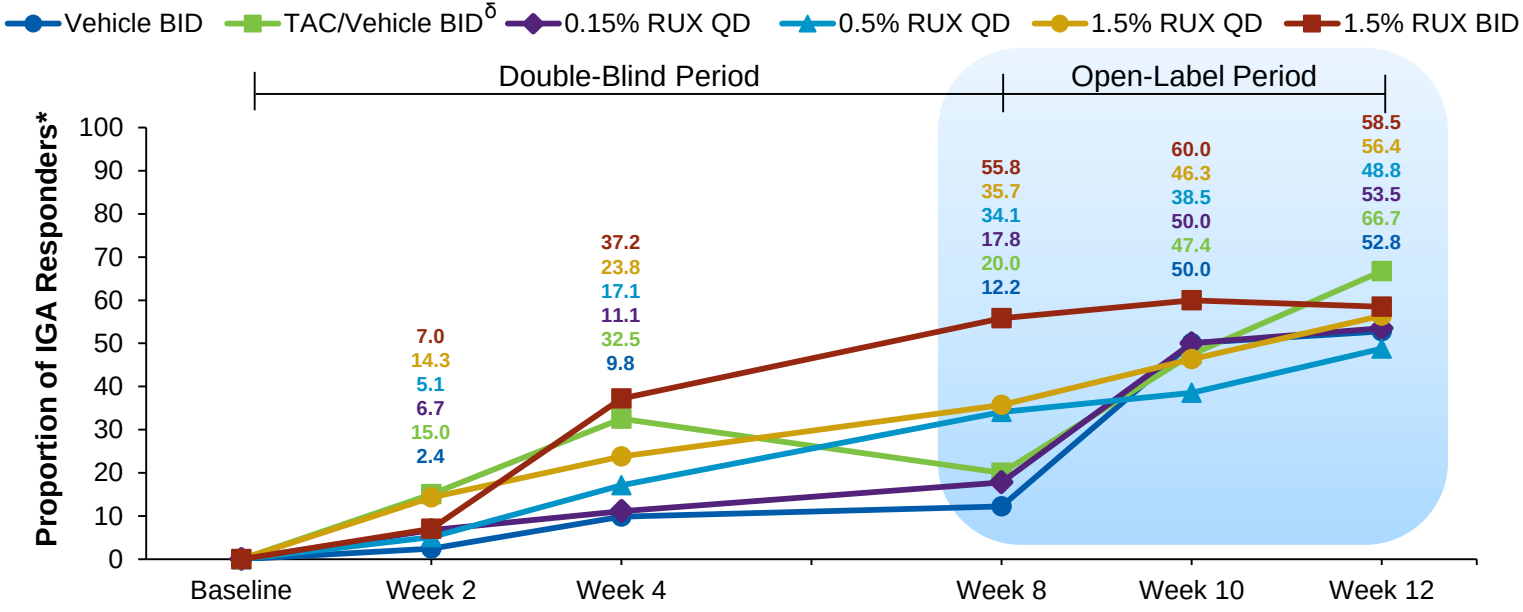
- Transitioning to 1.5% RUX cream BID at Week 8 was associated with substantial improvement in EASI scores




δ TAC arm received TAC 0.1% cream through Week 4 and vehicle through Week 8.

# Proportion of Patients With IGA Response

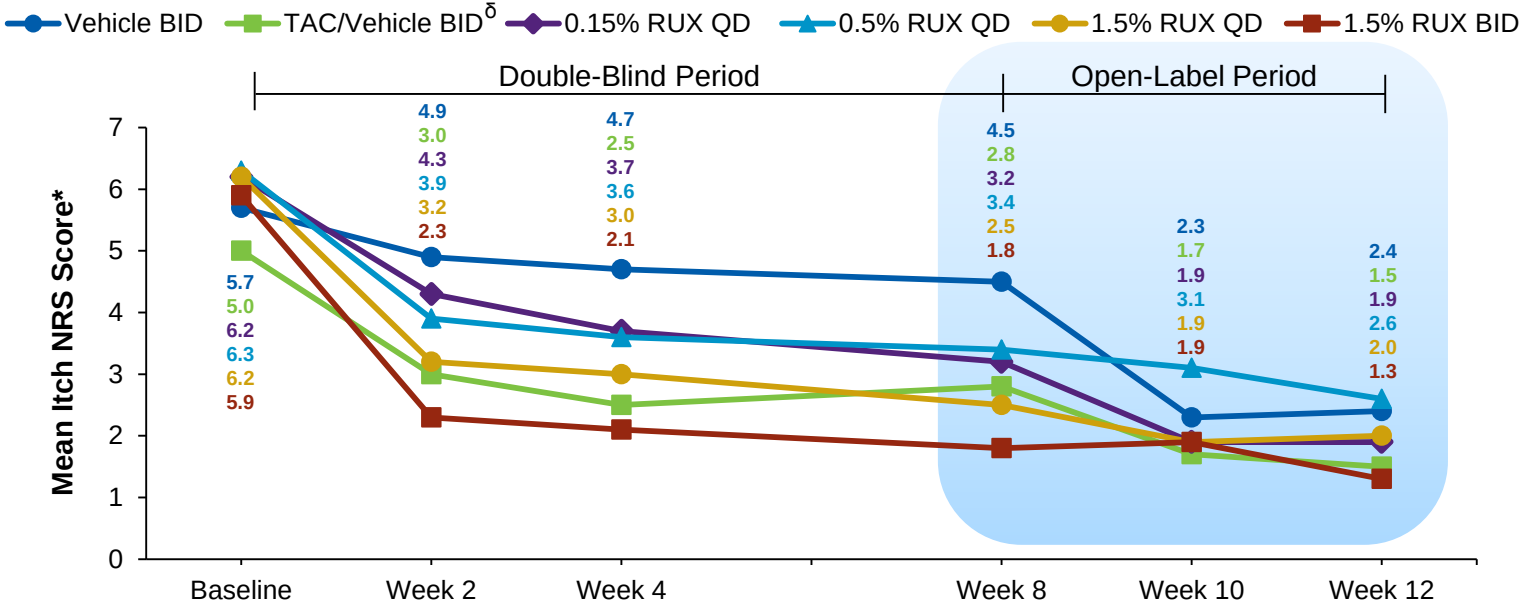
- Switching to 1.5% RUX cream BID was associated with substantial improvement in all treatment arms




* Defined as a patient achieving an IGA score of 0–1 with an improvement of ≥2 points from baseline. δ TAC arm received TAC 0.1% cream through Week 4 and vehicle through Week 8.

# Sustained Reduction in Itch

- Transitioning to 1.5% RUX cream BID at Week 8 was associated with additional and sustained improvement in itch




* Range of NRS, 0–10 (0, no itch; 10, worst imaginable itch). δ TAC arm received TAC 0.1% cream through Week 4 and vehicle through Week 8.

# Safety

- RUX cream was well tolerated and not associated with clinically significant application site reactions (double-blind and open-label periods)
- There were no serious TEAEs or discontinuations due to TEAEs during the open-label period
- All treatment-related adverse events were mild or moderate in severity

**Safety in the Open-Label Period by Initial Treatment Group**

| | Vehicle BID (n=41) | 0.1% TAC BID (n=40) | 0.15% RUX QD (n=45) | 0.5% RUX QD (n=41) | 1.5% RUX QD (n=42) | 1.5% RUX BID (n=43) |
|---|---|---|---|---|---|---|
| **Days in study, median (range)** | 28.0 (0–66.0) | 28.0 (12.0–38.0) | 29.0 (10.0–51.0) | 28.0 (13.0–40.0) | 28.0 (20.0–36.0) | 84.0 (50.0–106.0) |
| **Patients with TEAE, n (%)** | 5 (12.2) | 11 (27.5) | 11 (24.2) | 8 (19.5) | 11 (26.2) | 17 (39.5) |
| Most common TEAEs* | | | | | | |
| Nasopharyngitis | 1 (2.4) | 1 (2.5) | 4 (8.9) | 1 (2.4) | 2 (4.8) | 4 (9.3) |
| Upper respiratory tract infection | 1 (2.4) | 2 (5.0) | 0 | 1 (2.4) | 2 (4.8) | 1 (2.3) |
| AD | 1 (2.4) | 1 (2.5) | 0 | 0 | 1 (2.4) | 1 (2.3) |
| Headache | 0 | 0 | 1 (2.2) | 1 (2.4) | 0 | 2 (4.7) |
| **Treatment-related TEAE, n (%)** | 0 | 0 | 0 | 1 (2.4) | 1 (2.4) | 2 (4.7) |

TEAE, treatment emergent adverse event.
* Occurring in >1% of the total patient population.

# Conclusions

- RUX cream demonstrated improvement in EASI score, IGA response, and itch over time
  - Responses to 1.5% RUX cream BID in the double-blind period were sustained in the open-label period
    - At Week 12: mean 84.9% improvement from baseline in EASI score; 58.5% IGA responders
  - Patients who crossed over to 1.5% RUX cream BID in the open-label period experienced substantial improvements
- 1.5% RUX cream BID regimen brought about a prompt and sustained relief in itch that was significantly greater than that of triamcinolone at Week 4
- RUX cream was well tolerated with no serious TEAEs related to the study drug and no patients discontinued because of TEAEs

# Thank you for your attention!

Any questions?

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