RUXOLITINIB RESEARCH ROUNDUP

RUXOLITINIB CREAM IN ATOPIC DERMATITIS

Clinical Question:

Is ruxolitinib cream effective for atopic dermatitis?

Introduction

Atopic dermatitis (AD) is a chronic, relapsing inflammatory skin condition characterized by pruritus, eczematous lesions, and impaired skin barrier function. Its global prevalence is substantial, affecting **10–20% of children and 5–10% of adults**, and contributing to significant disease burden due to sleep disruption, emotional distress, and reduced overall quality of life (QoL).[1] Even patients with milder disease experience substantial impairment, particularly because of persistent itch – one of the most debilitating symptoms.

While topical corticosteroids and topical calcineurin inhibitors remain foundational therapies, their long-term use is often constrained by safety limitations such as skin atrophy, burning, and stinging.[1,2] These drawbacks can reduce patient adherence and leave a gap for effective, non-steroidal, and well-tolerated topical options.

At A Glance: Ruxolitinib in TRuE-AD

Mode of action:
JAK 1 & 2 inhibitor[1,2]

US FDA Approved:
Ruxolinib 1.5% cream for mild-to-moderate AD in children (≥2 years) and adults¶[1,3]

TRuE-AD1 & 2 Highlights[2]

IGA-TS Responder Rate

TRuE-AD1	TRuE-AD2
53.8%*	**51.3%***
vs 15.1% in vehicle	vs 7.6% in vehicle

Onset of Itch Reduction

12‡ HOURS

NRS4 Responder Rate

TRuE-AD1	TRuE-AD2
52.2%†	**50.7%†**
vs 15.4% in vehicle	vs 16.3% in vehicle

PROMIS Responder Rate

TRuE-AD1	TRuE-AD2
22.3%§	**25.6%**
vs 9.5% in vehicle	vs 19.1% in vehicle

¶The FDA approval is based on the findings of TRuE-AD1, TRuE-AD2, and TRuE-AD3 Phase 3 studies. *p<0.0001 vs vehicle at week 8. †p<0.001 vs vehicle at week 8. ‡p<0.05 vs vehicle. §p<0.01 vs vehicle at week 8. IGA-TS, Investigator's Global Assessment-Treatment Success; JAK, Janus kinase; NRS4, ≥ 4-point improvement in Numerical Rating Scale; PROMIS, Patient-Reported Outcomes Measurement Information System; TRuE-AD, Topical Ruxolitinib Evaluation in Atopic Dermatitis Study; US FDA, United States Food and Drug Administration

TRuE-AD Phase 3 Trials

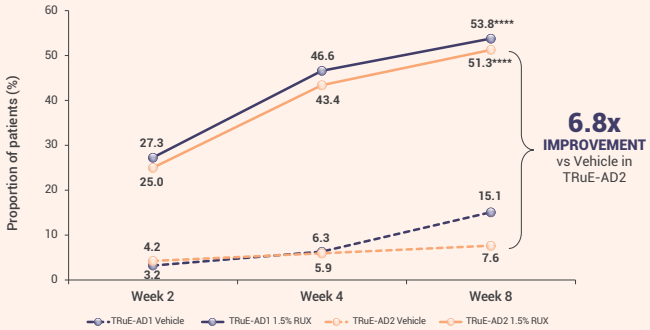
The TRuE-AD1 and TRuE-AD2 clinical trials¶ demonstrate the **efficacy and safety of ruxolitinib 1.5% cream** – two identically designed, randomized, double-blind, vehicle-controlled studies conducted across multiple centres in North America and Europe.[2]

The studies recruited adolescents and adults aged 12 years or older with a clinical diagnosis of AD for at least 2 years, body surface area (BSA) involvement of 3–20% (excluding scalp), and an Investigator's Global Assessment (IGA) score of 2 or 3 at baseline. After a washout period to eliminate confounding effects of prior therapies, participants were randomized in a 2:2:1 ratio to receive ruxolitinib 0.75% cream, ruxolitinib 1.5% cream, or vehicle, applied twice daily for eight weeks. Rescue therapy was not permitted.[2]

Key Findings: AD Improvement

The primary endpoint was IGA Treatment Success (IGA-TS) at week 8, defined as a score of 0 or 1 with at least a two-grade improvement from baseline. Both TRuE-AD studies met their primary endpoints, with IGA-TS rates in TRuE-AD1 reaching 53.8% with ruxolitinib 1.5% cream versus 15.1% for vehicle (p<0.0001); similar patterns were observed in TRuE-AD2, where the ruxolitinib 1.5% cream achieved **more than a six-fold improvement** over vehicle (p<0.0001) (Figure 1).[2]

Figure 1. Proportion of patients with IGA-TS‡[2]



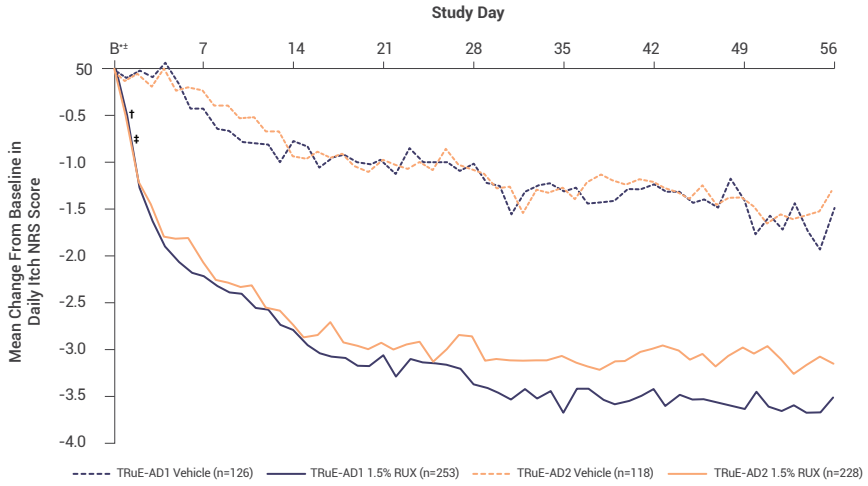
****p<0.0001. ‡Defined as patients achieving an Investigator's Global Assessment score of 0 or 1 with an improvement of ≥2 points from baseline. Patients with missing postbaseline values were imputed as nonresponders at Weeks 2, 4, and 8. IGA-TS, Investigator's Global Assessment-Treatment Success; RUX, ruxolitinib cream. The results of ruxolitinib 0.75 cream is not included in this graph.

Eczema Area and Severity Index (EASI) outcomes mirrored this trajectory. Substantial reductions in disease extent and severity were seen early, with both ruxolitinib strengths achieving markedly higher EASI-75 and EASI-90 response rates than vehicle by week 8. Notably, approximately 60% of patients using the ruxolitinib 1.5% cream achieved EASI-75, highlighting the capacity of ruxolitinib cream to deliver consistent and clinically meaningful improvement in a relatively short treatment window.[2]

Itch Relief & QoL

Significant itch reduction was observed **as early as 12 hours** after the first application of ruxolitinib 1.5% cream in both trials (Figure 2), illustrating the early and sustained separation of daily itch Numerical Rating Scale (NRS) curves between ruxolitinib and vehicle groups.[2] At week 8, clinically meaningful improvement in itch (NRS4) was achieved in up to 52% of patients receiving ruxolitinib 1.5% cream, compared with approximately 15-16% using vehicle, representing a more than three-fold improvement.[2]

Figure 2. Change from baseline in daily itch NRS score[2]



*p<0.02 vs vehicle in TRuE-AD1 within 12 hours of 1st application. ±p<0.03 vs vehicle in TRuE-AD2 within 12 hours of 1st application.
†p<0.05 vs vehicle in TRuE-AD1 and TRuE-AD2. update to: ‡p<0.0001 vs vehicle in TRuE-AD1 and TRuE-AD2.
B, Baseline; NRS, Numerical Rating Scale; RUX, ruxolitinib cream. The results of ruxolitinib 0.75 cream is not included in this graph.

Sleep disturbance, a contributor to poor QoL in AD, also improved with ruxolitinib 1.5% cream. In TRuE-AD1, significantly more patients achieved the predefined **≥6-point improvement** in the Patient-Reported Outcomes Measurement Information System (PROMIS) – Sleep Disturbance scores than with vehicle, while TRuE-AD2 showed a favourable trend.[2]

Safety

Ruxolitinib 1.5% cream was well tolerated throughout the eight-week treatment period. Application-site reactions were infrequent and occurred less often in the ruxolitinib groups than with vehicle. **Systemic exposure remained low**, with mean plasma concentrations well below the whole-blood IC50 threshold associated with JAK2-mediated hematologic effects.[2]

Bottom Line

Ruxolitinib 1.5% cream offers a compelling new option in the topical management of mild-to-moderate AD. Its targeted inhibition of JAK1/JAK2 translates into a dual anti-inflammatory and antipruritic effect, with onset of itch relief occurring within hours and significant improvements in AD inflammation evident by week 8. The favourable safety profile and minimal systemic exposure further strengthen its position as a well-tolerated, non-steroidal alternative to existing therapies.

Access Ruxolitinib Phase 3 Trial in AD for more information.

¶Ruxolitinib 0.75% cream was studied in TRuE-AD1 and TRuE-AD2 but was not commercialized.

For Healthcare Professionals Only.

Ruxolitinib cream and/or the atopic dermatitis indication may not be approved in your market. Please consult your local Rxilient Medical Advisor for the most up-to-date regulatory information.

References:
1. Owji S, Caldas SA, Ungar B. Management of Atopic Dermatitis: Clinical Utility of Ruxolitinib. J Asthma Allergy. 2022;15:1527-1537. **2.** Papp K, Szepietowski JC, Kircik L, et al. Efficacy and safety of ruxolitinib cream for the treatment of atopic dermatitis: Results from 2 phase 3, randomized, double-blind studies. J Am Acad Dermatol. 2021;85(4):863-872. **3.** Incyte. Incyte Announces Additional FDA Approval of Opzelura® (Ruxolitinib) Cream in Children Ages 2-11 with Atopic Dermatitis. Sept 18, 2025. Available at: https://investor.incyte.com/news-releases/news-release-details/incyte-announces-additional-fda-approval-opzelurar-ruxolitinib. Accessed January 2026.

Ruxolitinib Research Roundup is a Rxilient medical initiative developed to deliver concise, evidence-based scientific updates on ruxolitinib cream for healthcare professionals.

RXILIENT Medical Pte. Ltd. (202138126D)
1 Coleman Street #08-01, The Adelphi, Singapore 179803