Safety & Efficacy of Topical Ruxolitinib vs. Corticosteroids in the Treatment of Atopic Dermatitis

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Introduction

Atopic Dermatitis (AD) is a chronic, inflammatory skin disease characterized by itching and dry skin. AD ranges from mild to severe, with debilitating symptoms including intense itch, sleep disturbances, and psychiatric manifestations.

Standard care regimens for AD include:
- Lifestyle modifications and emollients
- Topical, systemic, and intralesional corticosteroids
- Systemic Janus Kinase (JAK) inhibitors
- Ultraviolet A/B (UVA/UVB) Phototherapy

These regimens can be associated with adverse effects like skin atrophy, steroid dependence, and immunosuppression. There is a need for treatment that does not cause such side effects and can be used in patients who have failed and/or have contraindications to existing options. **Novel topical JAK inhibitor ruxolitinib (RUX) is an exciting alternative therapy for AD patients.**

Study Aim:
Evaluate the efficacy, safety, and tolerability of RUX cream versus topical corticosteroids in the treatment of AD.

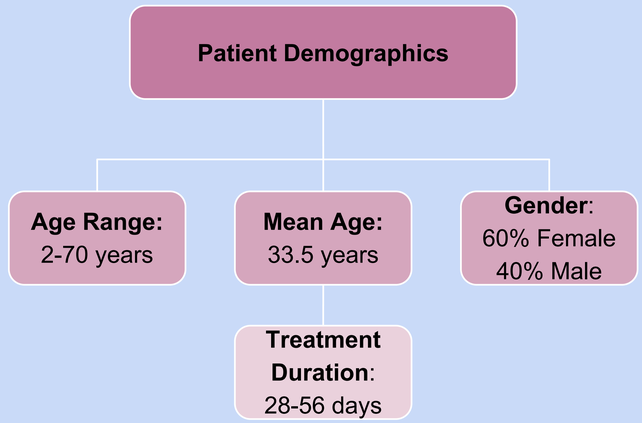
Method

Data Collection:
- Peer-reviewed articles published between 2014-2024 were included for review.
- Electronic databases accessed through the Yeshiva University school library: Medline-PubMed, Google Scholar, ScienceDirect, Clinicaltrials.gov, Access Medicine, and reference lists from selected articles.
- Search terms: atopic dermatitis, eczema, ruxolitinib, JAK inhibitor, topical steroids.
- Meta-analyses, randomized controlled studies, open-label trials, and randomized double-blind trials were included for consideration.

Patient Demographics	
Inclusion Criteria	**Exclusion Criteria**
• Diagnosis of AD ≥ 2 years • *IGA score ≥ 2 • Stable disease prior to baseline	• Unstable or severe AD • Use of other AD treatments • AD confined to scalp, hands, or feet • Immunocompromised status • Other eczema or dermatologic conditions • Serious comorbidities

*Investigator Global Assessment (IGA)

Results



Pertinent data was compiled from two open-label studies (Leung et al. 2023) (Bissonnette et al. 2022), and one double-blind randomized controlled trial (Kim et al. 2020).

Study Outcomes	
Efficacy	**Safety & Tolerability**
• 72% *EASI improvement in best-dose group (1.5% twice daily) • 60-65% of patients reached IGA score of 0/1 by trial completions • Rapid itch relief within 36 hours in adults • Significant itch-numerical rating scale (itch-NRS) reduction by week 2 in all ages • Significant percentage body surface area reduction across studies	• ~10% of participants reported mild to moderate adverse events • Low systemic absorption • No serious adverse events reported • Safe in both pediatric and adult populations

*Eczema Area and Severity Index (EASI)

Conclusions

- **RUX cream is an effective and well-tolerated treatment** for mild to moderate AD across pediatric and adult populations.
- Significant improvements were observed in EASI, IGA, itch-NRS, and percentage body surface area across studies, with the most benefit seen using **1.5% twice daily dosing**.
- **Adverse effects were minimal** with a low systemic absorption, supporting its safety for extended use and in special populations.
- RUX cream may offer a valuable alternative to corticosteroids, especially for patients at increased risk for steroid-related complications.

Limitations:
- Small sample sizes
- Short treatment durations
- Exclusion of patients with extensive AD, facial lesions
- Female predominance across studies

RUX cream is a promising alternative to topical steroids, that demonstrates potent therapeutic effects and an acceptable safety profile in both adolescents and adults.

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References

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