Supplemental Online Content

Zirwas MJ, Draelos ZD, DuBois J, et al. Efficacy of roflumilast foam, 0.3%, in patients with seborrheic dermatitis: a double-blind, vehicle-controlled phase 2a randomized clinical trial. *JAMA Dermatol.* Published online May 3, 2023. doi:10.1001/jamadermatol.2023.0846

This supplemental material has been provided by the authors to give readers additional information about their work.

eTable 1. Excluded Medications and Treatments

Excluded Medications and Treatments	Wash out period prior to Baseline (Day 0)
Biologics	12 weeks or 5 half-lives, whichever was longer
Systemic treatment with antifungal agents, corticosteroids, immunosuppressive therapies, retinoids, roflumilast, or apremilast	4 weeks
Topical antifungals, corticosteroids, calcineurin inhibitors, sulfur-based treatments, medical devices, crisaborole, azelaic acid, or metronidazole	2 weeks
Medicated shampoos (eg, coal tar, keratolytics including salicylic acid, antifungals, zinc pyrithione, selenium sulfide, corticosteroids, medical devices)	2 weeks
Topical medications used on the scalp for conditions besides seborrheic dermatitis, eg, use of topical minoxidil for androgenetic alopecia	4 weeks
Phototherapy, tanning beds, other light emitting devices	4 weeks
Investigational drugs	Biologics: 12 weeks or 5 half-lives, whichever was longer Oral medications: 5 half-lives Topical treatments: 2 weeks

Eye drop and nasal corticosteroid preparations were allowed. Inhaled corticosteroid preparations were allowed if used for a stable condition and at a stable dose for >28 days before screening and were continued at the same dose throughout the study.

Non-medicated emollients, moisturizers, and sunscreens were allowed once daily as normally used by patients and applied at least 3 hours after application of randomized investigational product to untreated areas only.

eTable 2. Investigator Global Assessment (IGA) Scale

Score	Grade	Description
0	Completely clear	No erythema, no scaling (hypo-/hyper-pigmentation can be present)
1	Almost clear	Residual slight erythema and/or trace amounts of scaling
2	Mild	Pink to red color and/or slight scaling
3	Moderate	Distinct redness and/or clearly visible scaling
4	Severe	Severe erythema (intense, fiery red) and/or severe scaling (coarse, thick scales with flaking onto clothes or skin)

eTable 3. Treatment Emergent Adverse Events by Severity

n (%)	Roflumilast foam 0.3% (n = 154)	Vehicle foam (n = 72)
Patients with any TEAE	37 (24.0)	13 (18.1)
Grade 1 (Mild)	17 (11.0)	6 (8.3)
Grade 2 (Moderate)	18 (11.7)	5 (6.9)
Grade 3 (Severe)	2 (1.3)	2 (2.8)
Grade 4 (Life-threatening consequences)	0 (0.0)	0 (0.0)
Grade 5 (Death related to AE)	0 (0.0)	0 (0.0)
Preferred term (listed alphabetically), grade		
Abdominal pain lower		
Grade 2 (Moderate)	0 (0.0)	1 (1.4)
Acne cystic		
Grade 1 (Mild)	1 (0.6)	0 (0.0)
Actinic keratosis		
Grade 1 (Mild)	0 (0.0)	1 (1.4)
Alanine aminotransferase increased		
Grade 3 (Severe)	0 (0.0)	1 (1.4)
Anemia		
Grade 3 (Severe)	0 (0.0)	1 (1.4)
Application site dysesthesia		
Grade 1 (Mild)	0 (0.0)	1 (1.4)
Application site pain		
Grade 1 (Mild)	1 (0.6)	1 (1.4)
Grade 2 (Moderate)	1 (0.6)	0 (0.0)
Arthralgia		
Grade 2 (Moderate)	0 (0.0)	1 (1.4)
Arthropod bite		
Grade 2 (Moderate)	0 (0.0)	1 (1.4)
Aspartate aminotransferase increased		
Grade 2 (Moderate)	0 (0.0)	1 (1.4)
Atrial fibrillation		
Grade 1 (Mild)	1 (0.6)	0 (0.0)
Atrophic vulvovaginitis		
Grade 2 (Moderate)	1 (0.6)	0 (0.0)
Back pain		
Grade 1 (Mild)	1 (0.6)	0 (0.0)
Grade 2 (Moderate)	1 (0.6)	0 (0.0)
Blepharitis		
Grade 1 (Mild)	1 (0.6)	0 (0.0)
Grade 2 (Moderate)	1 (0.6)	0 (0.0)
Breast tenderness		
Grade 1 (Mild)	1 (0.6)	0 (0.0)
Contact dermatitis[a]		
Grade 1 (Mild)	3 (1.9)	2 (2.8)
Cough		
Grade 2 (Moderate)	1 (0.6)	0 (0.0)
COVID-19		
Grade 2 (Moderate)	1 (0.6)	0 (0.0)
Dehydration		
Grade 1 (Mild)	1 (0.6)	1 (1.4)

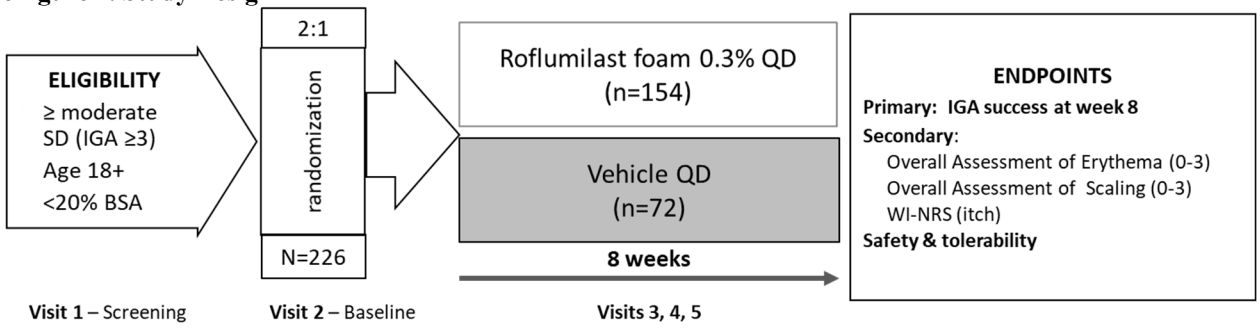
Diarrhea		
Grade 1 (Mild)	2 (1.3)	0 (0.0)
Dizziness		
Grade 2 (Moderate)	1 (0.6)	0 (0.0)
Dyspepsia		
Grade 1 (Mild)	1 (0.6)	0 (0.0)
Dyspnea		
Grade 1 (Mild)	1 (0.6)	0 (0.0)
Grade 2 (Moderate)	1 (0.6)	0 (0.0)
Essential tremor		
Grade 2 (Moderate)	1 (0.6)	0 (0.0)
Fibromyalgia		
Grade 2 (Moderate)	1 (0.6)	0 (0.0)
Gastroenteritis		
Grade 2 (Moderate)	1 (0.6)	0 (0.0)
Headache		
Grade 1 (Mild)	1 (0.6)	0 (0.0)
Grade 2 (Moderate)	1 (0.6)	0 (0.0)
Hordeolum		
Grade 2 (Moderate)	1 (0.6)	0 (0.0)
Hyperkalaemia		
Grade 3 (Severe)	1 (0.6)	0 (0.0)
Hypertension		
Grade 2 (Moderate)	1 (0.6)	0 (0.0)
Insomnia		
Grade 1 (Mild)	3 (1.9)	1 (1.4)
Ligament sprain		
Grade 2 (Moderate)	0 (0.0)	1 (1.4)
Migraine		
Grade 2 (Moderate)	1 (0.6)	0 (0.0)
Grade 3 (Severe)	1 (0.6)	0 (0.0)
Milia		
Grade 1 (Mild)	1 (0.6)	0 (0.0)
Muscle strain		
Grade 2 (Moderate)	1 (0.6)	0 (0.0)
Nasal congestion		
Grade 1 (Mild)	1 (0.6)	0 (0.0)
Nasopharyngitis		
Grade 2 (Moderate)	3 (1.9)	0 (0.0)
Nausea		
Grade 1 (Mild)	1 (0.6)	0 (0.0)
Oropharyngeal pain		
Grade 1 (Mild)	1 (0.6)	0 (0.0)
Pyrexia		
Grade 2 (Moderate)	1 (0.6)	0 (0.0)
Seborrheic dermatitis		
Grade 2 (Moderate)	0 (0.0)	1 (1.4)
Sinusitis		
Grade 1 (Mild)	1 (0.6)	0 (0.0)
Skin scar contracture		
Grade 1 (Mild)	1 (0.6)	0 (0.0)
Sunburn		
Grade 1 (Mild)	1 (0.6)	0 (0.0)
Toothache		
Grade 2 (Moderate)	1 (0.6)	0 (0.0)

Tooth fracture		
Grade 2 (Moderate)	2 (1.3)	0 (0.0)
Urinary tract infection		
Grade 1 (Mild)	1 (0.6)	0 (0.0)
Grade 2 (Moderate)	1 (0.6)	0 (0.0)
Viral upper respiratory tract infection		
Grade 1 (Mild)	1 (0.6)	0 (0.0)

Abbreviations: AE, adverse event; TEAE, treatment-emergent adverse event.

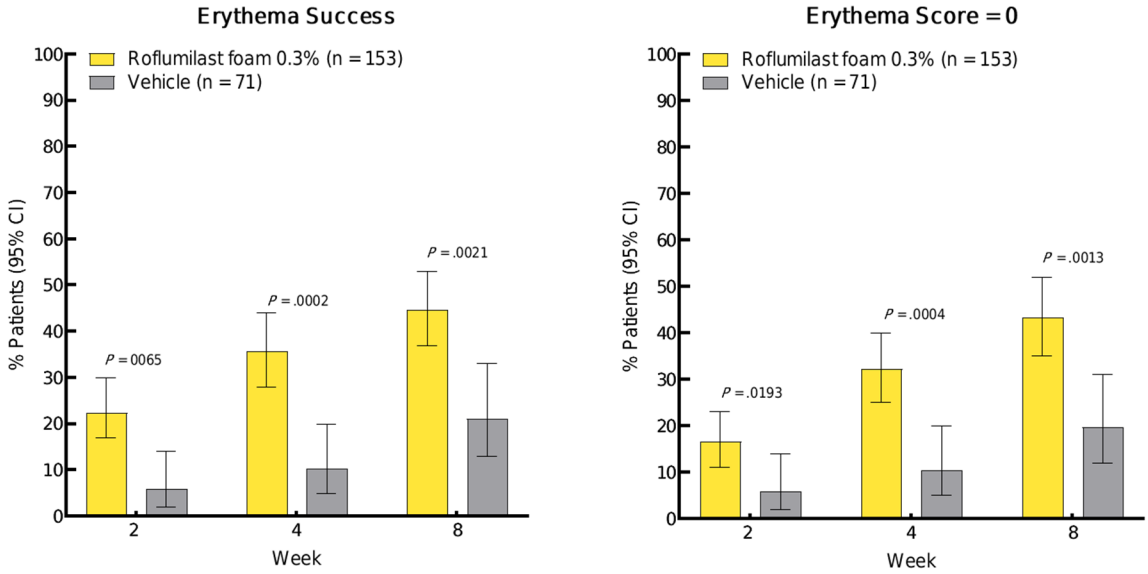
[a]Contact dermatitis was reported to be unrelated to treatment in all cases and no cases caused interruption of drug application; 2 cases were reported as “poison ivy rash” by investigators.

eFigure 1. Study Design



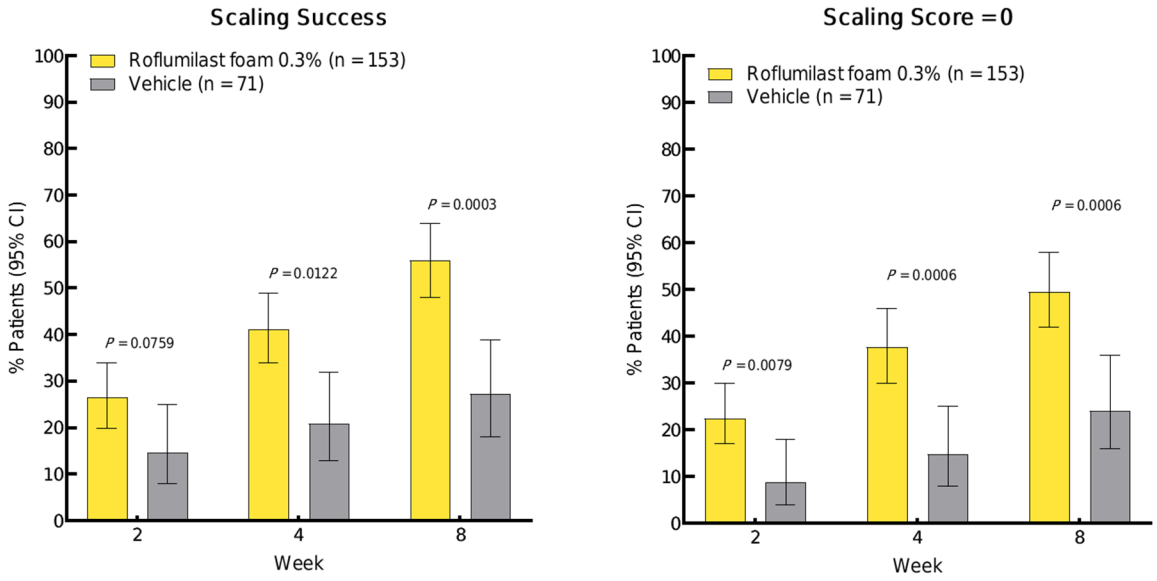
IGA success = clear or almost clear.
BSA, body surface area; IGA, Investigator Global Assessment; QD, once daily; WI-NRS, Worst Itch-Numeric Rating Scale.

eFigure 2. Percentage of Patients Achieving Erythema Success and Erythema score of None (mITT Population)



Erythema success = erythema score of 0 or 1 (on a scale of 0 [none] to 3 [severe]) plus a 2-grade improvement from baseline

eFigure 3. Percentage of Patients Achieving Scaling Success and Scaling Score of None (mITT Population)



Scaling success = scaling score of 0 or 1 (on a scale of 0 [none] to 3 [severe]) plus a 2-grade improvement from baseline