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Clinical Outcomes of an Amorphous Hydrated Silica-Containing Topical Cream in Three Adults With Atopic Dermatitis: A Case Series

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Abstract

Atopic dermatitis is characterized by recurrent eczematous inflammation, pruritus, and xerosis, and topical moisturizers remain an important component of management. We describe a retrospective case series of three adults, aged 28-42 years, treated in an outpatient dermatology practice with an amorphous hydrated silica-containing prescription topical cream. Baseline and approximately Day 14 assessments included Investigator Global Assessment (IGA), pruritus numerical rating scale (NRS), and Overall Dry Skin Score (ODS). The planned regimen was twice-daily application for four weeks, although the actual treatment duration varied according to the clinical course. On Day 14, all three patients had IGA scores of 0 or 1, with reductions of at least 2 IGA points, 6 pruritus NRS points, and 1 ODS point from baseline. Pruritus NRS decreased by 6, 7, and 7 points in Patients 1, 2, and 3, respectively. Patients 1 and 2 continued use through Week 4 for comfort, whereas Patient 3 discontinued treatment after five days following reported resolution. No concomitant therapies or recent topical corticosteroid use were reported during the treatment period. Transient burning occurred with the initial application in one patient and did not recur; no adverse events were reported in the other two patients. These observations are limited by the retrospective design, small sample size, absence of a control group, variable treatment exposure, and short follow-up. The concordant reductions in clinician-assessed disease severity, patient-reported pruritus, and xerosis support further prospective evaluation of this silica-containing topical emulsion in atopic dermatitis.

Categories: Family/General Practice, Allergy/Immunology, Dermatology
Keywords: atopic dermatitis, case series, medical device, pruritus, silica biomaterial, topical emulsion, xerosis

Introduction

Atopic dermatitis is a chronic, relapsing inflammatory skin disease characterized by epidermal barrier dysfunction, pruritus, xerosis, and recurrent eczematous flares [1]. Impaired barrier function contributes to increased transepidermal water loss and cutaneous dryness and may facilitate exposure to environmental irritants and allergens. Accordingly, restoration and maintenance of the skin barrier are fundamental components of atopic dermatitis management. Current guidelines strongly recommend regular use of moisturizers, with topical anti-inflammatory therapies added when clinically indicated [2].

A variety of topical emollients and barrier-supportive formulations are used to reduce xerosis and improve symptoms associated with atopic dermatitis. Prescription device-based topical formulations represent an additional approach to skin barrier management and may incorporate materials designed to retain moisture or support a favorable cutaneous environment. The amorphous silica-containing topical cream evaluated in this case series contains milled amorphous hydrated silica fibers dispersed within a topical cream formulation [3]. The hydrated silica component has moisture-interacting properties that may contribute to the formulation's physical characteristics [4]. However, the specific contribution of the silica fibers to moisture retention and clinical performance in the finished formulation has not been established by the observations presented in this case series.

The currently marketed formulation, SiOxC Cream (SiOxMed, LLC, Winston-Salem, NC, USA), was cleared by the U.S. Food and Drug Administration under 510(k) K250890 for the management of pruritus and dryness of skin associated with atopic dermatitis and allergic contact dermatitis [5]. Although topical barrier-directed therapies are well established in atopic dermatitis management, published clinical experience with this amorphous silica-containing formulation remains limited. We, therefore, describe the cases of three adults treated during routine outpatient dermatologic care who demonstrated changes in dermatitis severity, pruritus, and xerosis during use of the topical cream.

Case Presentation

This retrospective case series includes three adults treated during routine clinical care at an outpatient dermatology practice in San Antonio, Texas, between August and September 2026. Patients were identified through retrospective review of clinical records documenting use of a silica-containing topical cream. All

patients receiving the formulation during this period were identified, with four excluded due to incomplete clinical documentation or unavailable follow-up assessments. Baseline and approximately Day 14 assessments included Investigator Global Assessment (IGA), pruritus numerical rating scale (NRS), and Overall Dry Skin Score (ODS), as documented during routine clinical care. Assessments were performed in person with the same treating clinician performing baseline and follow-up assessments, using standard scoring criteria. These assessments were not collected under a prospectively standardized research protocol, but instead as part of routine care. Treatment exposure, concomitant therapies, and adverse events were retrospectively extracted from the available clinical documentation. The planned regimen was twice-daily application for four weeks, although actual treatment duration varied according to clinical course. SiOxMed, LLC (Winston-Salem, NC, USA), the manufacturer of the topical formulation, supplied the product used during routine clinical care. The cases were retrospectively identified and evaluated from clinical documentation generated by the treating dermatologist. The manufacturer's involvement in data review and manuscript preparation is disclosed below. No prospective research protocol or study-specific intervention was conducted. Written consent for publication of clinical information and applicable photographs was obtained from all patients. Formal institutional review board review was not sought for this retrospective case series.

Patient 1

A 30-year-old man with lifelong atopic dermatitis presented with a three-month flare involving the hands. Baseline IGA, NRS, and ODS were 3, 8, and 2, respectively. No recent topical corticosteroid use or concomitant therapies were reported. He applied the silica-containing topical cream twice daily for two weeks and subsequently continued use through Week 4 for comfort. At a virtual follow-up on Day 14, IGA decreased to 1, pruritus NRS to 2, and ODS to 1. Transient burning occurred with the initial application and did not recur with subsequent applications. Baseline and follow-up clinical photographs are shown in Figure *1*.

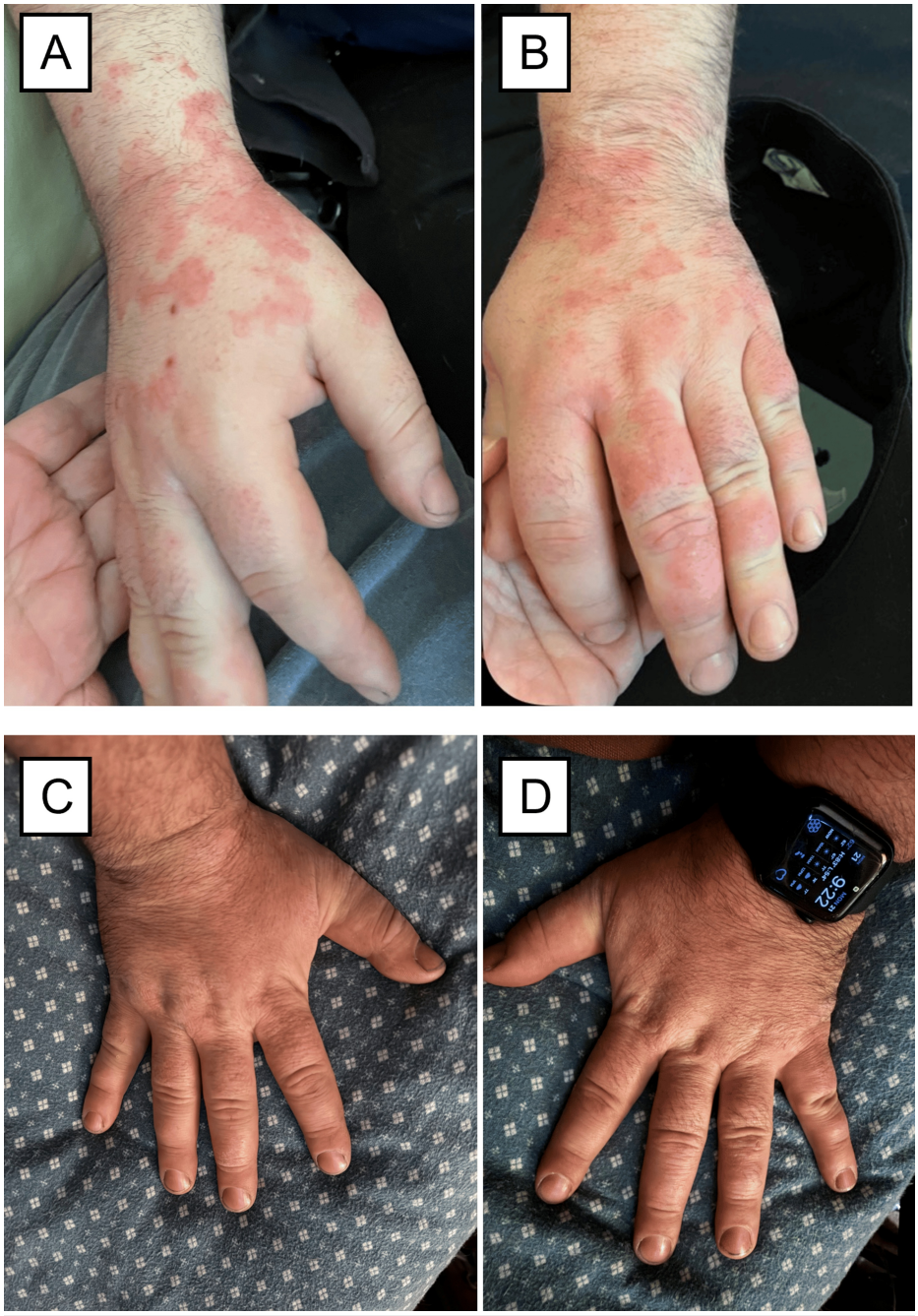


FIGURE 1: Atopic dermatitis of the hands.

(A, B) Pretreatment photographs showing erythematous patches involving the dorsal hands, fingers, and wrists. (C, D) Follow-up photographs after twice-daily use of the topical cream, demonstrating decreased visible erythema. Photographs were obtained during routine clinical care without standardized lighting, camera positioning, or imaging conditions; therefore, differences in photographic appearance should be interpreted as such.

Patient 2

A 42-year-old woman with a one-year history of atopic dermatitis presented with a one-month flare involving the lower legs. Baseline IGA, NRS, and ODS were 3, 7, and 1, respectively. No recent topical corticosteroid use or concomitant therapies were reported. She applied the silica-containing topical cream twice daily for two weeks and subsequently continued use through Week 4 for comfort. At the in-person follow-up on Day 14, IGA, pruritus NRS, and ODS were each 0. No adverse events were reported. Baseline and follow-up clinical photographs are shown in Figure *2*.

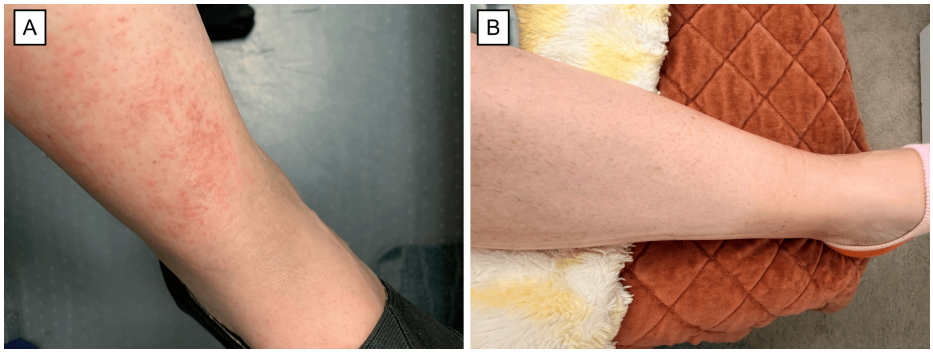


FIGURE 2: Atopic dermatitis of the lower leg.

(A) Pretreatment photograph showing erythematous patches involving the lower leg. (B) Follow-up photograph after twice-daily use of the topical cream, demonstrating decreased visible erythema. Photographs were obtained during routine clinical care without standardized lighting, camera positioning, or imaging conditions; therefore, differences in photographic appearance should be interpreted as such.

Patient 3

A 28-year-old woman with a greater than 10-year history of atopic dermatitis presented with a one-week facial eruption clinically documented as allergic contact dermatitis in the setting of underlying atopic dermatitis. Patch testing was not performed, and the diagnosis was based upon clinical judgment in the setting of new facial skin care products. Baseline IGA, pruritus NRS, and ODS scores were 2, 7, and 1, respectively. No recent topical corticosteroid use or concomitant therapies were reported. She applied the silica-containing topical cream twice daily for five days and subsequently self-discontinued treatment following reported resolution of the eruption, which was communicated at follow-up. At the in-person follow-up on approximately Day 14, IGA, pruritus NRS, and ODS were each recorded as 0. No additional topical products were used following discontinuation. No adverse events were reported. Clinical photographs were withheld from publication to protect patient anonymity because the affected area involved the face.

A summary of all three patient characteristics, treatment exposure, and clinical outcomes is in Table *1*.

Measure	Patient 1	Patient 2	Patient 3
Age, sex	30 years, male	42 years, female	28 years, female
Presenting diagnosis	Atopic dermatitis	Atopic dermatitis	Allergic contact dermatitis in the setting of underlying atopic dermatitis
Treated site	Hands	Lower legs	Face
Recent flare duration	Three months	One month	One week
Investigator Global Assessment, baseline → Day 14	3 → 1	3 → 0	2 → 0
Pruritus numerical rating scale, baseline → Day 14	8 → 2	7 → 0	7 → 0
Overall Dry Skin Score, baseline → Day 14	2 → 1	1 → 0	1 → 0
Reported treatment exposure	Twice daily for two weeks; continued through Week 4 for comfort	Twice daily for two weeks; continued through Week 4 for comfort	Twice daily for five days; discontinued after reported resolution
Reported adverse events	Transient burning with initial application; no recurrence	None	None

TABLE 1: Patient characteristics, treatment exposure, and clinical outcomes.

Values represent recorded baseline and approximately Day 14 assessments. Patient 3 presented with allergic contact dermatitis in the setting of underlying atopic dermatitis and discontinued treatment after five days following reported resolution. Her Day 14 scores were obtained after treatment discontinuation. Patients 1 and 2 continued treatment through Week 4, although standardized Week 4 outcome assessments were unavailable.

Discussion

This retrospective case series describes concordant reductions in recorded dermatitis severity, pruritus, and xerosis during use of an amorphous hydrated silica-containing topical cream in three adults with a history of atopic dermatitis. On Day 14, all three patients had IGA scores of 0 or 1, with reductions of at least 2 IGA points, 6 pruritus NRS points, and 1 ODS point from baseline. The consistency of the pruritus response, with 6- to 7-point reductions across all three patients, is notable and supports further prospective evaluation.

Published clinical experience with EpiCeram, a ceramide-dominant, physiologic lipid-based topical cream, provides background context for the use of prescription barrier-directed formulations in atopic dermatitis [6]. EpiCeram was identified as a predicate device in the regulatory clearance pathway for the silica-containing formulation. However, substantial equivalence for regulatory purposes does not establish equivalent clinical efficacy or comparable treatment outcomes. The present three-patient retrospective series was not designed to compare these formulations, and no conclusions regarding their relative effectiveness or speed of response can be drawn.

The cases varied in treated site, duration of disease, and duration of the recent flare. Patient 3 differed from the other cases because the presenting episode was documented as allergic contact dermatitis in the setting of longstanding atopic dermatitis. Accordingly, her clinical response should not be interpreted as direct evidence of efficacy against an atopic dermatitis flare. She discontinued treatment after five days following reported resolution, whereas her follow-up outcome scores were recorded at approximately Day 14. The diagnosis was made based on clinical judgement and known exposure to new facial skin care products. Changes in allergen exposure, spontaneous improvement, and other unmeasured factors may have contributed to the observed resolution.

No concomitant therapies or recent topical corticosteroid use were reported during the treatment period. However, corticosteroid use was not prospectively assessed, and these observations do not establish a corticosteroid-sparing effect. Patients 1 and 2 continued use through Week 4 for comfort, but standardized Week 4 outcome assessments were unavailable. Transient burning occurred with the initial application in one patient and did not recur; no adverse events were reported in the other two patients.

Interpretation is limited by the retrospective design, small sample size, absence of a control group, variable

treatment exposure, and short follow-up. Natural fluctuation of atopic dermatitis, regression toward the mean, selection and observer bias, and unrecorded changes in skin care or environmental exposures may have contributed to the observed improvements. The series also evaluates the topical formulation as a whole and does not isolate the contribution of silica from other formulation components. Although the moisture-interacting properties of amorphous hydrated silica provide a potential mechanistic rationale, this retrospective series cannot determine whether the observed improvements were attributable to the silica component, other ingredients of the topical formulation, changes in skin-care practices, or the natural clinical course. Clinical photographs were obtained under nonstandardized conditions, including differences in lighting, positioning, and background, which may influence the apparent degree of erythema and other visible skin changes. Photographs were used as supportive clinical documentation rather than standardized quantitative outcome measures.

Despite these limitations, concordant improvement across clinician-assessed disease severity, patient-reported pruritus, and xerosis provides a rationale for further study. Prospective evaluation with predefined eligibility criteria, standardized outcome assessment, systematic adverse-event collection, a comparator group, and longer follow-up is warranted.

Conclusions

In this retrospective case series, three adults with a history of atopic dermatitis had lower recorded dermatitis severity, pruritus, and xerosis scores at approximately Day 14 during use of a silica-containing topical cream. All three achieved an IGA score of 0 or 1 and demonstrated reductions of at least 2 IGA points, 6 pruritus NRS points, and 1 ODS point from baseline. One patient reported transient burning with the initial application. These observations are hypothesis-generating and support further prospective, controlled evaluation of the topical cream in atopic dermatitis.

Additional Information

Author Contributions

All authors have reviewed the final version to be published and agreed to be accountable for all aspects of the work.

Concept and design: Adam M. Jorgensen, Aubrey Montebello

Acquisition, analysis, or interpretation of data: Adam M. Jorgensen, Aubrey Montebello

Drafting of the manuscript: Adam M. Jorgensen, Aubrey Montebello

Critical review of the manuscript for important intellectual content: Adam M. Jorgensen, Aubrey Montebello

Disclosures

Human subjects: Informed consent for treatment and open access publication was obtained or waived by all participants in this study. **AI use statement:** The authors used GPT-6 (OpenAI, San Francisco CA, USA) as follows: language polishing, structure or formatting, methodological or statistical suggestions in all text sections. During the preparation of this work, the authors used ChatGPT (OpenAI) to assist with manuscript organization and language editing. The authors confirm that they have reviewed and verified all AI-assisted content and take full responsibility for the work. **Conflicts of interest:** In compliance with the ICMJE uniform disclosure form, all authors declare the following: **Payment/services info:** SiOxMed, LLC supplied the topical formulation used in the reported cases and paid the publications fees. No financial support was provided for the clinical evaluation, data collection, or other aspects of the work. No prospective company-sponsored clinical study was conducted. **Financial relationships:** Adam M Jorgensen declare(s) employment and stock/stock options from SiOxMed, LLC. Adam M. Jorgensen is an employee and officer of SiOxMed, LLC, the manufacturer of the topical formulation described in this report, and holds an equity interest in the company. **Other relationships:** Drs. Jorgensen and Montebello are guest editors of the collection this article is submitted to. Dr. Montebello is a research collaborator with SiOxMed. Aubrey Montebello has no financial relationship with SiOxMed. Aubrey Montebello provided clinical care and the clinical observations reported in this series. Adam M. Jorgensen contributed to retrospective data interpretation and manuscript preparation. Both authors reviewed and approved the final manuscript.

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