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Clinical Study of Atopic Dermatitis Treated using the saehim system: A Six-Stage Self-Healing Approach for Atopic Dermatitis and Inflammatory Skin Diseases

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Research Article

Keywords: saehim system, atopic dermatitis, self-healing, disease emission, integrative medicine, inflammatory skin diseases

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Additional Declarations: Competing interest reported. The corresponding author is the developer of the saehim system and saehim (SRM1), which is prescribed and dispensed as part of routine clinical practice at the author's clinic. The patients included in this study received saehim (SRM1) as part of standard clinical care, and the present study reports observational clinical outcomes derived from this treatment. No external commercial funding, third-party sponsorship, or industrial support was involved in this study. Data collection, analysis, and interpretation were conducted independently in accordance with academic and ethical standards.

Title

Clinical Study of Atopic Dermatitis Treated using the saehim system: A Six-Stage Self-Healing Approach for Atopic Dermatitis and Inflammatory Skin Diseases

Running Title: Clinical Validation of the saehim system

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Author Contributions:
Hyo Jung Whang contributed to the conceptualization and design of the study; development of the saehim system framework and intervention; execution and supervision of the clinical study; data collection and analysis; interpretation of results; and drafting and critical revision of the manuscript.

Conflicts of Interest:
The author developed and clinically applies the saehim system and saehim (SRM1). No competing financial interests are declared.

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This study is dedicated to advancing integrative dermatologic medicine and is based on the saehim system, a six-stage self-healing framework developed through more than 35 years of continuous clinical practice by Hyo Jung Whang, K.M.D.

Abstract

Background:
Atopic dermatitis is a chronic inflammatory skin disorder characterized by recurrent flares and heterogeneous clinical courses. Conventional management primarily focuses on immunosuppressive or symptom-oriented interventions, which may provide short-term control but are often associated with relapse after treatment discontinuation. Alternative therapeutic frameworks that emphasize long-term recovery processes remain insufficiently explored.

Objective:
This study aimed to evaluate the clinical outcomes and recovery patterns observed during treatment with the saehim system, a structured six-stage, non-suppressive therapeutic framework applied in routine clinical practice, and to describe its sequential recovery characteristics in patients with atopic dermatitis.

Methods:
A prospective observational case-series study was conducted involving 35 patients with atopic dermatitis, with follow-up periods ranging from 6 to 34 months. All patients received oral monotherapy with saehim (SRM1), without the use of topical agents, corticosteroids, immunosuppressants, biologics, or adjunctive dermatologic treatments. Clinical outcomes were assessed using longitudinal time-series clinical photographs, the Scoring Atopic Dermatitis (SCORAD) index, and patient-reported symptom assessments.

Results:
Across the study cohort, a reproducible staged recovery pattern was observed, progressing from stabilization of acute inflammation to keratin formation and desquamation, followed by restoration of normal skin architecture. These sequential recovery patterns were consistently observed across different age groups, anatomical regions, and baseline disease severities. Sustained clinical remission was maintained during the follow-up period, including among pediatric patients with presumed genetic susceptibility.

Conclusion:
In this observational case series, treatment with the saehim system was associated with reproducible, staged recovery patterns and sustained clinical stabilization without reliance on immunosuppressive therapy. These findings suggest that a physiology-oriented, non-suppressive therapeutic framework may offer a clinically relevant complementary approach for the long-term management of atopic dermatitis, warranting further controlled investigations.

Clinical Study of Atopic Dermatitis Using the saehim system

I. Introduction

Atopic dermatitis (AD) is a chronic, relapsing inflammatory skin disease that commonly develops during infancy or early childhood and frequently persists or recurs into adulthood. It is characterized by intense pruritus and recurrent inflammatory responses and is often accompanied by impaired skin barrier function, sleep disturbance, emotional stress, and limitations in daily activities. Collectively, these factors exert substantial long-term negative effects on patients' quality of life [1, 2].

Epidemiological studies report that approximately 11.1% of children and adolescents and 6.3% of adults worldwide are affected by atopic dermatitis, with relatively higher prevalence observed in Asian populations [3, 4, 12]. In recent decades, the incidence of atopic dermatitis has increased not only in industrialized countries but also in developing regions, leading to its recognition as a global public health concern rather than a region-specific disease [5].

Current standard treatments for atopic dermatitis are primarily based on suppression of inflammation and symptoms through topical corticosteroids, immunosuppressants, antihistamines, and moisturizers [6, 7]. Although these approaches are effective in controlling acute symptoms, relapse following treatment discontinuation is common, and long-term modification of disease course is rarely achieved. Moreover, prolonged or repeated use has been associated with adverse effects, including skin atrophy, immune dysregulation, growth impairment, and increased risk of antimicrobial resistance [8, 9].

As atopic dermatitis is increasingly recognized as a systemic inflammatory disorder involving complex interactions among immune regulation, skin barrier integrity, neuroendocrine

responses, and environmental factors, the limitations of symptom-centered suppressive treatment strategies have become more apparent [10]. This evolving understanding highlights the need for therapeutic approaches that address not only short-term symptom control but also the underlying recovery processes and long-term disease behavior.

In parallel, growing attention has been directed toward integrative and physiology-oriented medical approaches, including traditional Korean medicine–based therapies and natural product–derived formulations, which have demonstrated potential benefits in immune modulation and symptom alleviation. However, most published studies have focused on short-term clinical improvement, and systematic investigations examining whether recovery follows a reproducible and structurally consistent trajectory at the whole-body level remain limited [11].

To address these gaps, the present study clinically applied the saehim system, a structured therapeutic framework that conceptualizes recovery as a sequential process involving stabilization of inflammation, separation and emission of pathological tissue, and restoration of normal tissue architecture. The saehim system is organized into six stages: disease blocking and reduction, natural antibiotic response, disease emission, tissue regeneration and restoration, natural healing, and disease prevention. Unlike conventional approaches centered on symptom suppression, this framework emphasizes clinically observable recovery processes occurring during treatment.

This study is further informed by the Three-Axis Emission Theory, which provides a structural model for interpreting disease expression and recovery along three dimensions: depth, thickness, and width. This framework offers a means to describe regional and

generalized healing patterns observed during clinical follow-up without reliance on localized symptom assessment alone.

In the present investigation, treatment was conducted within the saehim system framework, while the actual intervention consisted exclusively of oral administration of saehim (SRM1), a specific herbal formulation developed within this system. No topical corticosteroids, immunosuppressants, or moisturizers were used during the treatment period. Despite the absence of topical or suppressive therapy, patients demonstrated consistent staged recovery patterns at both regional and generalized levels, characterized by stabilization of inflammation, staged keratin emission with desquamation, tissue regeneration, and restoration of normal skin architecture.

Accordingly, the objective of this study was to evaluate whether the disease emission process observed during saehim system–based treatment represents a reproducible clinical recovery pathway and to assess the clinical feasibility of a non-suppressive, recovery-oriented therapeutic approach extending beyond conventional symptom-centered management strategies for atopic dermatitis.

II. Theoretical Background

2.1 Six-Stage Self-Healing Model of the saehim system

The saehim system is a structured therapeutic framework that describes a sequential healing process observed during clinical treatment, in which pathological tissue undergoes stabilization, separation, emission, and subsequent regeneration, ultimately leading to restoration and long-term maintenance of normal tissue architecture. This six-stage model is interpreted in relation to established physiological processes, including inflammatory

104 regulation, wound healing dynamics, immune modulation, and microbial control mechanisms
105 [13, 17, 18, 24].

106 The first stage, Disease Blocking and Reduction**,** is characterized by stabilization of acute
107 inflammation and exudative responses, with prevention of further lesion expansion.

108 The second stage, Natural Antibiotic Response**,** involves autonomous regulation of
109 inflammatory activity through immune cell balance and cytokine modulation, occurring
110 without the use of external antibiotics or corticosteroids [17, 24].

111 The third stage, Disease Emission**,** represents a central phase in which pathological tissue is
112 progressively separated and eliminated through the skin surface. Clinically, this process is
113 observed as staged keratinization and desquamation and extends conventional concepts such
114 as exudation, desquamation, and autolytic debridement into a reproducible recovery
115 phenomenon [14, 19].

116 The fourth stage, Tissue Regeneration and Restoration**,** involves formation of new tissue in
117 areas previously affected by disease emission, accompanied by granulation tissue
118 development and re-epithelialization [18].

119 The fifth stage, Natural Healing**,** is characterized by stabilization of regenerated tissue,
120 recovery of skin barrier function, and normalization of elasticity and surface integrity.

121 The sixth stage, Disease Prevention**,** reflects maintenance of immune tolerance and
122 physiological balance, with sustained absence of clinical recurrence during long-term follow-
123 up [13, 21–23].

These six stages do not represent discrete or isolated events; rather, they form a continuous and overlapping healing sequence observed across patients and anatomical regions. Progression through the stages reflects an integrated recovery process involving inflammation control, tissue emission, regeneration, stabilization, and long-term disease control.

2.2 Three-Axis Emission Theory of the saehim system

2.2.1 Fundamental Principles of Disease Accumulation and Emission

Atopic dermatitis can be interpreted as a systemic inflammatory condition rather than a purely superficial or localized skin disorder. From a clinical observation perspective, disease expression and recovery were observed to occur three-dimensionally along the axes of depth, thickness, and width [14, 19]. As disease severity increased, expansion along all three axes was observed concurrently; conversely, during clinical recovery, reduction along these axes occurred in a coordinated manner.

Lesions characterized by greater depth of tissue involvement, increased keratin and inflammatory thickness, and broader surface extent required a longer duration and a greater number of emission stages to achieve recovery. In severe lesions accompanied by ulceration, repeated cycles of tissue emission followed by regeneration were observed during follow-up. These patterns were consistently associated with gradual restoration toward normal skin architecture, with minimal residual scarring.

2.2.2 Structural Definition of the Three-Axis Emission Theory

The Three-Axis Emission Theory provides a clinical framework for conceptualizing disease burden as a three-dimensional structure.

In this model, depth refers to the level of tissue involvement (epidermis, dermis, and subcutaneous layers), thickness reflects the degree of inflammatory infiltration and keratin accumulation, and width represents the spatial extent of lesion distribution. These three axes function as interdependent components of overall disease burden and were observed to decrease in parallel during the recovery process.

This framework complements established severity assessment tools, such as the Scoring Atopic Dermatitis (SCORAD) index and the Eczema Area and Severity Index (EASI), by offering an interpretive structure for understanding recovery trajectories and prognosis based on cumulative disease burden rather than isolated symptom severity.

2.2.3 Clinical Significance in Treatment Interpretation

Conventional treatment strategies for atopic dermatitis primarily emphasize suppression of inflammation and external symptom control. In contrast, the saehim system emphasizes clinically observable processes involving separation and emission of pathological tissue, followed by autonomous tissue regeneration and stabilization.

Within this framework, clinical recovery is interpreted as a progressive reduction of disease burden across three structural dimensions (depth, thickness, and width), ultimately leading to restoration of normal skin architecture. This perspective provides a practical interpretive model for understanding scar-minimized recovery patterns observed during long-term follow-up, without reliance on sustained immunosuppressive intervention.

2.3 Clinical Observation of the Shoulder-Belt Pattern

Atopic dermatitis may be interpreted not only as a localized cutaneous disorder but also as a condition reflecting systemic interactions involving immune and respiratory pathways. Anatomically, the neck and shoulder region (hereafter referred to as the shoulder belt) is continuous with the upper airway and thoracic structures. In this study, this region was repeatedly observed to function as a transitional zone in the clinical progression and resolution of skin lesions.

During longitudinal follow-up, certain patients exhibited reproducible patterns in which lesion spread or recovery appeared to originate from the shoulder-belt region and extend toward both the upper and lower body [15, 20]. These observations suggest that the progression and recovery of atopic dermatitis may follow specific bodily axes rather than occurring in a random or uniformly distributed manner.

In the present manuscript, the shoulder-belt pattern is described as an empirical clinical observation derived from time-series photographic analysis and longitudinal follow-up. Hypothesis-driven physiological interpretations and extended theoretical considerations related to this pattern are provided separately in the Supplementary Materials.

2.4 Comparison with Conventional Therapies

Conventional medical management of atopic dermatitis primarily focuses on suppression of inflammation and symptomatic control using moisturizers, topical corticosteroids, and immunosuppressive agents. While these approaches are effective for short-term symptom relief, relapse and disease chronicity are frequently reported following treatment discontinuation, and long-term use has been associated with adverse effects such as skin atrophy and immune dysregulation [16, 18, 21].

In contrast, the saehim system applied in this study emphasizes clinically observable recovery processes involving the separation and emission of pathological tissue, followed by tissue regeneration and stabilization. During treatment, transient emission-related changes may occur; however, the intended clinical outcome is restoration of normal skin architecture rather than sustained symptom suppression. A structured comparison between conventional suppressive therapies and the saehim system is presented in Table 1.

In the present case series, treatment was conducted exclusively using oral therapy without concomitant use of topical corticosteroids or moisturizers. During the follow-up period, no clinical recurrence was observed in the treated cohort. This clinical course contrasts with commonly reported patterns of symptom suppression followed by relapse and is instead characterized by a sequential recovery process culminating in sustained normalization.

Table 1. Comparison between conventional suppressive therapy and the saehim system

Category	Suppressive therapy (topical corticosteroids, immunosuppressants)	saehim system (disease emission–based recovery)
Mechanism of action	Suppression of inflammation and symptomatic control	Separation and emission of pathological tissue with subsequent tissue regeneration
Short-term effects	Rapid symptom improvement	Transient emission-related changes may occur
Long-term outcomes	Frequent relapse and progression to chronicity; recurrence rates of 50–80% reported in long-term observational studies [16, 18, 21–24]	Restoration of normal skin architecture; absence of recurrence during follow-up in this study
Adverse effects	Skin atrophy, immune dysregulation, antimicrobial resistance risk [18]	No serious adverse effects observed in the present study
Treatment paradigm	Suppression → temporary remission → relapse	Emission → regeneration → stabilization

III. Methods

Terminology Clarification

In this study, the term saehim system refers to a six-stage therapeutic framework applied in clinical practice. The actual intervention administered to patients was a specific oral herbal formulation developed within this framework, referred to as saehim (SRM1, Skin Renewal Medicine 1). For clarity and reproducibility, the treatment approach is described as saehim system–based treatment, whereas the administered intervention is specified as oral saehim (SRM1).

3.1 Study Design

This study was conducted as a prospective observational case-series involving patients with atopic dermatitis treated using the saehim system. Participants were followed for a minimum of 6 months and up to a maximum of 34 months. Clinical photographs, physical examinations, and patient-reported outcomes were collected during regular monthly visits. Treatment outcomes were analyzed using qualitative and quantitative approaches based on time-series clinical photographs and validated clinical indices, in accordance with recommended reporting standards for observational studies [24, 25].

For clinical evaluation, key process-related concepts, including disease emission, were operationally defined based on reproducible and observable clinical features, as detailed in Section 3.4.

Among the total study population (n = 35), two representative cases were predefined as a core cohort (n = 2) for in-depth longitudinal analysis. Selection criteria for the core cohort included: (1) long-term follow-up (≥12 months), (2) high treatment adherence (≥90%), and (3) completeness of time-series clinical photographic documentation. The core cohort

223 comprised one patient with localized atopic dermatitis and one patient with generalized atopic
224 dermatitis. These cases were used to illustrate detailed temporal recovery trajectories and
225 disease emission patterns, while analyses of overall clinical outcomes, reproducibility, and
226 safety were performed using the full cohort.

227 The full cohort consisted of 35 individual patients, including two representative cases
228 described in the main manuscript, 32 site-specific cases presented in the Supplementary
229 Materials (S1–S32), and two generalized atopic dermatitis cases (Q-series and Z-series), each
230 representing a single individual patient followed longitudinally without duplication.

231 The primary endpoint was achievement of complete clinical remission, determined through
232 standardized review of time-series clinical photographs and clinical assessment. Secondary
233 endpoints included: (1) changes in the Scoring Atopic Dermatitis (SCORAD) index, (2)
234 patient-reported outcomes (PROs) related to pruritus, sleep quality, and quality of life, (3)
235 recurrence during follow-up, and (4) safety evaluation. To enhance objectivity and
236 reproducibility, time-series clinical photographs were assessed using predefined criteria and
237 independently reviewed by two evaluators, as recommended for observational clinical
238 research [24].

239 **3.2 Participants**

240 This study enrolled pediatric and adult patients diagnosed with atopic dermatitis who
241 exhibited a recurrent or chronic disease course for at least 6 months. Written informed
242 consent was obtained from all participants or their legal guardians prior to enrollment.
243 Patients who had used systemic or topical corticosteroids, immunosuppressants, or biologic

agents within the preceding 3 months, as well as those with significant underlying medical conditions, were excluded [6].

A total of 35 patients were included in the analysis. The entire cohort was evaluated for clinical outcomes following saehim system–based treatment. Among these, two patients meeting predefined criteria for high adherence (≥90%), long-term follow-up (≥12 months), and complete time-series photographic documentation were designated as the core cohort. These cases were analyzed in detail to assess reproducibility of the six-stage recovery process and the Three-Axis Emission Theory (depth, thickness, and width).

Regional clinical characteristics, treatment duration, lesion distribution, and stage-wise recovery summaries for the full cohort (n = 35) are summarized in Supplementary Tables S1–S32, as provided in the Supplementary Materials. Detailed time-series analyses and whole-body recovery patterns of generalized atopic dermatitis cases are presented in the Supplementary Figures (Q- and Z-series) and Supplementary Results.

3.3 Treatment Protocol

Treatment was administered as oral monotherapy using saehim (SRM1, Skin Renewal Medicine 1), a standardized oral formulation developed within the saehim system framework. Details regarding the principal herbal components and formulation are provided in the Supplementary Materials (Supplementary Table S34).

saehim (SRM1) was administered orally at a dose of 4–5 g per administration, once or twice daily after meals, according to patient age and body weight. This dosage range was supported by preclinical toxicity studies and international verification data (Supplementary Table S33).

The minimum treatment duration was 6 months, while patients with generalized atopic dermatitis were treated for up to 34 months, depending on clinical course.

During treatment, clinical recovery was evaluated in relation to disease emission, defined as the sequential separation and elimination of pathological tissue through the skin during recovery. Keratin emission was recorded as an observable clinical manifestation of this process and was characterized by staged keratin formation followed by desquamation.

Throughout the study period, no topical corticosteroids, topical immunomodulators, systemic immunosuppressants, antibiotics, or moisturizers were used at any point.

3.4 Observation and Evaluation Methods

Key lesion sites were documented using time-series clinical photographs captured under standardized conditions. The healing process was prospectively monitored using a predefined operational framework describing sequential changes from acute inflammation to plate-like keratin formation, intermediate keratin, light keratin, and ultimately restoration of normal skin architecture.

In this study, disease emission was operationally defined as a clinically observable recovery process characterized by the sequential separation and external elimination of pathological tissue through the skin. Identification was based on reproducible visual and temporal features, including exudation, staged keratin formation, desquamation, and autolytic debridement, as documented in time-series clinical photographs. Disease emission was evaluated strictly as a descriptive clinical phenomenon rather than as a mechanistic or causal assumption, in order to ensure consistent identification across patients and anatomical sites.

Recovery outcomes were assessed using predefined criteria, including: (1) restoration of normal skin architecture; (2) persistence or resolution of pigmentation changes or scarring; and (3) clinical recurrence during a minimum follow-up period of 6 months after completion of treatment. Recurrent and convergent healing patterns observed across different anatomical regions and among patients were analyzed to evaluate the reproducibility of disease emission–based recovery under saehim system–based treatment.

A conceptual summary of the six-stage saehim system framework, including disease emission–based recovery and subsequent stabilization processes, is provided in Supplementary Table S35.

3.5 Ethical Considerations

This study was conducted in accordance with the ethical principles of the Declaration of Helsinki. As an observational study performed within the scope of routine clinical practice under the Korean Medical Service Act, involving no additional interventions or foreseeable risks beyond standard care, the study met criteria for exemption from Institutional Review Board (IRB) review under applicable national regulations.

All participants were fully informed about the study objectives and the academic use of clinical data. Written informed consent was obtained from all adult participants and from legal guardians of pediatric patients. All clinical data and photographic materials were thoroughly de-identified prior to analysis. The study complied with the Personal Information Protection Act (PIPA) of the Republic of Korea and ICMJE recommendations. Documentation supporting informed consent procedures and ethical compliance is provided in the Supplementary Materials (Supplementary File S36).

This study was reported in accordance with the STROBE guidelines for observational studies.

IV. Results

4.1 Regional Case-Series Analysis of Atopic Dermatitis

Five regional case series were analyzed, focusing on major anatomical sites commonly affected by atopic dermatitis, including the face and ears, neck and shoulder belt, antecubital and popliteal regions, and the palms and soles. All cases were classified and longitudinally followed according to the six-stage healing framework of the saehim system (disease blocking → natural antibiotic response → disease emission → tissue regeneration → natural healing → disease prevention).

Across all anatomical regions, a consistent sequential recovery pattern was observed, progressing from stabilization of acute inflammation to keratin formation and desquamation, followed by restoration of normal skin architecture. Although this overall sequence was shared across regions, variability was observed in the timing of disease emission onset and the rate of tissue regeneration.

The concordance rate of regional recovery stage sequences was 85% (95% confidence interval: 78–92%), indicating a high degree of structural alignment of recovery trajectories when stratified by lesion depth, thickness, and width. In exploratory subgroup analyses (n = 7), regions with thicker skin or broader lesion extent—such as the elbows and soles—exhibited a relative delay in the disease emission stage compared with other anatomical sites. This difference reached statistical significance in exploratory analysis (Wilcoxon signed-rank test, $p < 0.05$) and should be interpreted descriptively.

Representative cases illustrating the sequential recovery patterns observed in each regional group are presented in the main text. Additional cases demonstrating consistent recovery trajectories are provided in the Supplementary Materials (Supplementary Figures S1–S28; Supplementary Tables S1–S28). Summary tables for regions commonly considered refractory—including the elbows, soles, palms, and fingers—are presented in Supplementary Tables S29–S32, with corresponding time-series clinical images provided in Supplementary Figures S29–S32.

To maintain clarity in the main manuscript, only representative cases illustrating common recovery patterns are shown, while the complete clinical dataset—including generalized atopic dermatitis cases (Q–Z series)—is provided in the Supplementary Materials.

4.1.1 Facial and Auricular Atopic Dermatitis

The face and auricular regions represent areas of high clinical and functional burden in atopic dermatitis. These regions are characterized by relatively thin skin and frequent exposure to external environmental factors, which may influence inflammatory activity and recovery dynamics [14].

In all facial and auricular atopic dermatitis cases included in this study, a consistent staged recovery sequence was observed. Lesions progressed from erythema and exudation to disease emission characterized by hyperkeratinization and desquamation, followed by restoration of normal skin appearance.

Figure 1 presents a representative case illustrating this recovery pattern. The patient was a 2-year-old male who, at treatment initiation, exhibited severe lesions involving the scalp and face, with marked erythema, exudation, and thick hyperkeratotic plaques.

Following initiation of oral monotherapy with saehim (SRM1), a reduction in inflammatory signs and exudation was observed within approximately 10 weeks, with subsequent transition to the disease emission stage accompanied by desquamation. No topical agents or corticosteroids were used during treatment.

During 24 months of follow-up, pruritus resolved, and skin barrier integrity and pigmentation gradually normalized. At the final follow-up assessment, complete clinical remission was maintained, and no recurrence was observed (Figure 1).

Quantitative evaluation demonstrated a reduction in the SCORAD score from 28.5 at baseline to 12.3 at 10 weeks, corresponding to approximately 57% improvement. At the 24-month follow-up, the SCORAD score further decreased to 0.8, consistent with normal skin.

To preserve focus in the main manuscript, complete clinical datasets—including generalized atopic dermatitis cases (Q- and Z-series)—are presented in the Supplementary Materials. The main text includes only representative cases illustrating common recovery patterns in the facial and auricular regions.



Figure 1. Sequential clinical recovery of facial and auricular atopic dermatitis treated with oral monotherapy using saehim (SRM1) within the saehim system framework. Representative time-series images illustrate the reproducible progression from acute inflammation through keratinization and desquamation to restoration of normal skin architecture. Additional facial and auricular cases demonstrating identical recovery patterns are provided in Supplementary Figures S1–S5, and representative generalized atopic dermatitis cases illustrating whole-body extension of the same recovery sequence are presented in the Supplementary Figures (Q-series).
(A) At baseline (Day 0), severe erythema, exudation, and thick hyperkeratotic plaques were extensively observed over the scalp and face. In the periauricular region, marked keratin

accumulation and inflammatory scaling associated with a moist local environment were present, corresponding to the acute inflammatory phase with lesion accumulation.
(B) At 10 weeks of treatment (Day 70), erythema and exudation had markedly decreased. As the lesions transitioned into the disease emission process, fine desquamation and early signs of re-epithelialization were observed, indicating a transitional phase from inflammation toward tissue recovery.
(C) At the 24-month follow-up (Day 730), pruritus and inflammatory signs had completely resolved, and skin barrier architecture and pigmentation had normalized. The periauricular skin regained normal texture and elasticity, with complete clinical remission maintained without recurrence during the follow-up period.

4.2 Representative Case of Generalized Atopic Dermatitis

The representative case of generalized atopic dermatitis involved a 2-year-old male who, at treatment initiation, presented with severe generalized disease characterized by widespread erythema, exudation, and hyperkeratotic lesions involving the scalp, face, trunk, and both upper and lower extremities. Intense pruritus and sleep disturbance were reported. Particularly prominent exudation and thick plate-like keratin formation were observed in the lower extremities.

Treatment was administered as oral monotherapy with saehim (SRM1)**,** without concomitant use of topical corticosteroids, immunosuppressants, moisturizers, or antibiotic ointments. During the initial weeks of treatment, generalized erythema and exudation gradually decreased, followed by transition of lesions into the disease emission stage**,** characterized by keratin formation and subsequent desquamation.

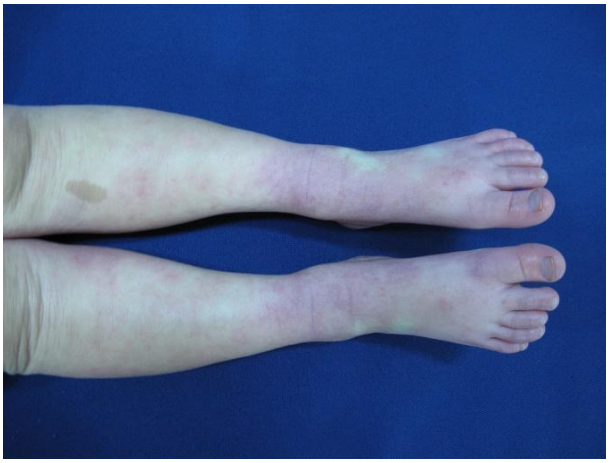
During longitudinal follow-up, temporal variation in disease emission was observed across different body regions. The trunk and upper extremities demonstrated earlier stabilization of inflammation and keratin desquamation, whereas the lower extremities showed prolonged formation and repeated shedding of thick keratin layers.

Over a total follow-up period of 34 months**,** lesion extent progressively decreased, keratin thickness diminished, and the skin surface regained uniform pigmentation and elasticity. At the final follow-up assessment, all generalized lesions had resolved, pruritus and sleep disturbance were fully alleviated, and complete clinical remission was confirmed. No recurrence was observed during follow-up.

Quantitative evaluation showed a reduction in the SCORAD score from 97.5 at baseline to a reduction of more than 50% at the mid-treatment time point**,** followed by a further decline to 0 at the final follow-up, consistent with normal skin. The observed recovery followed a consistent sequence: stabilization of acute inflammation → keratin emission → tissue regeneration → restoration of normal skin architecture.

Q1



414 **Q3**






415 **Q5**

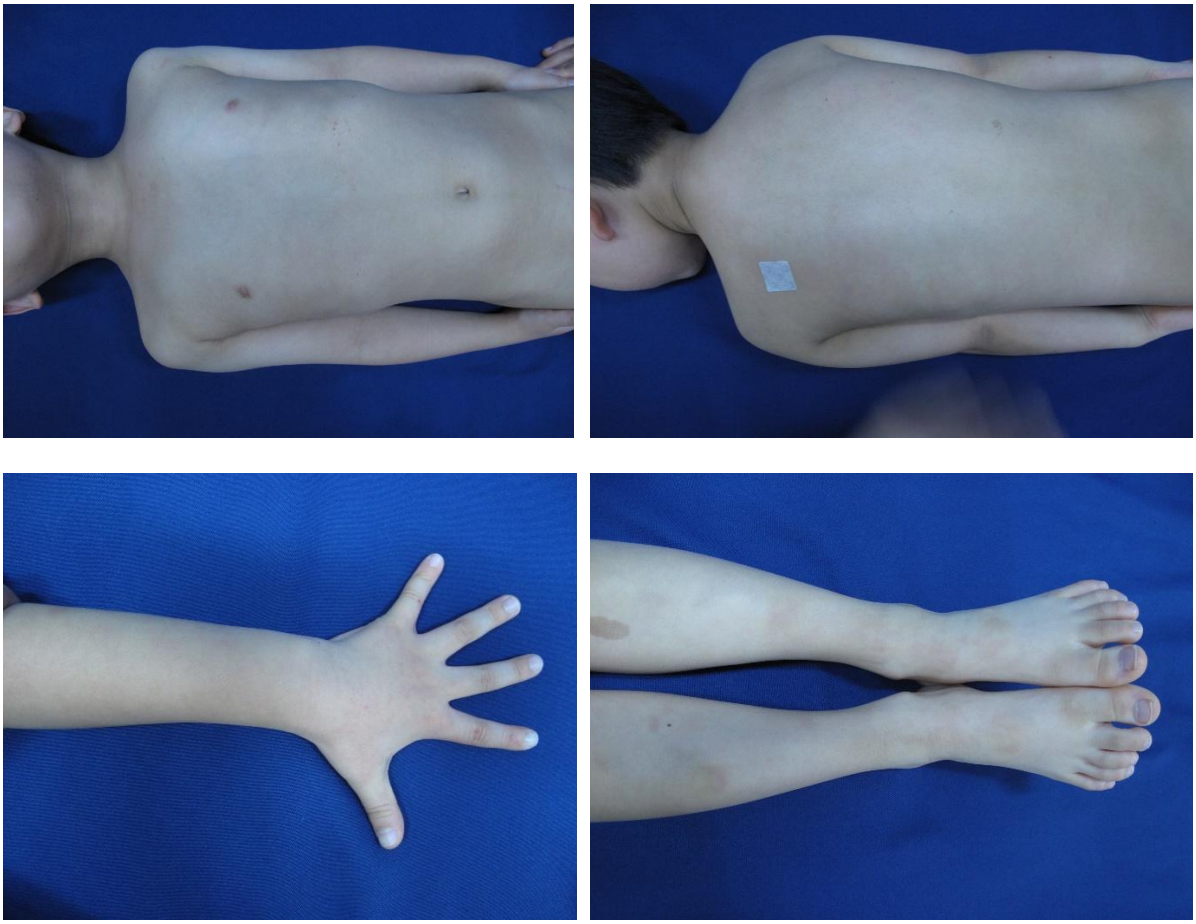


Figure 2. Representative whole-body recovery pattern of generalized atopic dermatitis treated with oral monotherapy using saehim (SRM1) within the saehim system framework.

This figure illustrates a consistent whole-body recovery trajectory observed in a pediatric patient with generalized atopic dermatitis treated exclusively with oral saehim (SRM1), without concomitant use of topical agents, topical immunomodulators, systemic immunosuppressants, or biologic therapies. Time-series clinical photographs are presented at three representative time points: Q1 (baseline, Day 0), Q3 (mid-treatment, approximately Month 12), and Q5 (final follow-up, Month 34). At baseline, widespread erythema and eczematous lesions were observed across the trunk and extremities. At the mid-treatment time point, a marked reduction in inflammation was accompanied by progressive normalization across multiple body regions. At the final follow-up, lesions had completely resolved over the back, trunk, upper extremities, and lower extremities, with restoration of uniform skin tone and texture.

4.3 Reproducibility and Safety of Generalized Atopic Dermatitis Recovery

The reproducibility and safety of recovery patterns observed during saehim system–based treatment were evaluated across the entire study population, including patients with generalized atopic dermatitis.

In all members of the core cohort (n = 2), which included one patient with generalized atopic dermatitis, the clinical course consistently followed the same sequential recovery pattern: stabilization of acute inflammation → keratin formation → desquamation → normalization of skin structure. These recovery stages were observed not only between patients but also across different anatomical regions within the same patient.

The stage sequence concordance rate was 100% in the core cohort. Although variability in recovery speed was observed depending on lesion extent and skin thickness, all regions ultimately progressed to the final recovery stage. Regions with extensive involvement and thick keratin accumulation, such as the lower extremities and soles, exhibited a relatively prolonged disease emission stage, without affecting final clinical outcomes.

The same staged recovery sequence was repeatedly observed in the entire cohort (n = 35), including the auxiliary analysis group (n = 33). Structural consistency of recovery patterns was confirmed through time-series clinical photographs and longitudinal clinical records. The characteristic clinical features of each recovery stage are illustrated in the Supplementary Materials (Supplementary Figures S1–S28 and S29–S32).

Regarding safety, no serious adverse events were reported during the treatment period. Some patients experienced transient increases in erythema, keratin formation, or fluctuations in pruritus during the disease emission stage; however, these changes resolved spontaneously without additional intervention and did not require treatment discontinuation or dose adjustment.

Treatment adherence exceeded 90% in all core cohort patients. In the overall cohort, adherence duration was estimated using Kaplan–Meier analysis, yielding a median adherence

duration of 28 months (95% confidence interval: 24–32 months). No clinically significant issues related to treatment discontinuation were observed during long-term follow-up.

A representative whole-body recovery course in a patient with generalized atopic dermatitis is summarized in Figure 2, while detailed time-series whole-body clinical photographs are provided in the Supplementary Materials (Supplementary Figures, Q-series).

V. Discussion

5.1 Interpretation of Key Findings

This study demonstrates that treatment with the saehim system induces a reproducible, stage-structured recovery trajectory in patients with atopic dermatitis, including those with generalized disease involvement. Across the entire cohort, recovery consistently progressed through the same sequential stages—stabilization of acute inflammation, keratin formation, desquamation, and normalization of skin structure—irrespective of baseline disease extent or anatomical location.

Importantly, reproducibility was observed not only between different patients but also across multiple anatomical regions within the same patient. In the core cohort, which included a patient with severe generalized atopic dermatitis, the stage sequence concordance rate reached 100%, indicating a highly conserved recovery architecture. Although the tempo of recovery varied depending on lesion extent, skin thickness, and mechanical stress, all regions ultimately converged toward the same final recovery stage, suggesting a regulated and ordered healing process rather than a site-specific or stochastic response.

The repeated observation of identical recovery staging across a heterogeneous cohort supports the interpretation that the saehim system does not function solely through suppression of inflammatory signaling. Instead, the findings suggest facilitation of an endogenous physiological process characterized by structured tissue transition and restoration. This perspective aligns with emerging concepts in chronic inflammatory disease management that emphasize restoration of tissue homeostasis and immune balance over sustained pharmacologic suppression [27, 28].

Notably, long-term clinical stability and complete remission were maintained across the study population—including patients with generalized atopic dermatitis—despite exclusive use of oral monotherapy without concomitant topical corticosteroids, immunosuppressants, or moisturizers. In this study, relapse was defined as the reappearance of active inflammatory skin lesions requiring additional medical intervention during the follow-up period. The absence of serious adverse events and the spontaneous resolution of transient symptom fluctuations further indicate that the observed staged recovery process is physiologically compatible with long-term disease management. Such safety characteristics are consistent with principles of durable treatment strategies for chronic inflammatory skin diseases [29].

Taken together, these findings indicate that generalized atopic dermatitis follows the same fundamental recovery architecture as localized disease when treated under the saehim system. The reproducibility of staged healing across patients, body regions, and disease severities provides clinical evidence supporting a unified, system-level mechanism of recovery, rather than symptom-driven or anatomically restricted resolution.

5.2 Clinical Implications of the Disease Emission–Based Recovery Model

A distinctive clinical feature observed during saehim system–based treatment was that phenomena such as keratin desquamation or transient symptom fluctuations were not associated with long-term deterioration but occurred as part of a consistent recovery sequence. In this study, the observed progression—exudation, hyperkeratinization, desquamation, and subsequent normalization—showed temporal alignment with the established phases of wound healing, including inflammation, proliferation, and remodeling [18].

From this perspective, atopic dermatitis may be interpreted not only as a disorder of skin barrier dysfunction or immune hypersensitivity, but also as a condition in which recovery follows an organized physiological trajectory. Within this framework, observed tissue changes during treatment can be interpreted as part of a recovery process involving tissue separation, reorganization, and stabilization.

The Three-Axis Emission Theory, which conceptualizes disease expression and recovery along the structural dimensions of depth, thickness, and width, provided a useful interpretive framework for understanding variability in lesion extent and recovery speed across patients and anatomical regions. Application of this framework allowed heterogeneity in healing patterns to be interpreted in relation to structural disease burden rather than as random individual variation, supporting the clinical relevance of an emission-based recovery model [30, 34].

5.3 Comparison with Conventional Suppressive Therapies

Conventional medical management of atopic dermatitis has largely focused on alleviating clinical symptoms through suppression or modulation of immune pathways involved in

519 inflammatory responses. Topical corticosteroids, immunosuppressants, and biologic agents
520 are representative of this approach and can provide relatively rapid symptom improvement
521 during acute exacerbations [31–33]. However, concerns have been raised regarding relapse
522 following treatment discontinuation, as well as potential structural skin changes and immune
523 dysregulation associated with long-term use.

524 In contrast, the saehim system applied in this study does not primarily aim to suppress
525 cutaneous inflammation, but rather to support clinically observable recovery processes,
526 during which sequential separation and emission of pathological tissue were followed by
527 restoration of normal skin architecture. Although transient increases in keratin formation or
528 symptom fluctuations were observed during treatment, these changes did not lead to long-
529 term deterioration, and sustained clinical stabilization was confirmed during follow-up.

530 Notably, no relapse was observed during the follow-up period in this study. This clinical
531 course differs from patterns frequently reported for conventional suppressive therapies, in
532 which symptom control is often followed by recurrence after treatment discontinuation.
533 Taken together, these findings suggest that recovery from atopic dermatitis may involve
534 structural tissue reorganization extending beyond short-term symptom modulation, and that
535 emission-based recovery models may complement therapeutic domains not fully addressed
536 by existing suppression-centered strategies.

537 **5.4 Reproducibility and Safety Considerations**

538 In the present study, a consistent temporal sequence of recovery was observed across the
539 entire case series, including both localized and generalized atopic dermatitis. Similar
540 recovery patterns emerged regardless of patient age, lesion distribution, or disease duration.

Analysis of time-series clinical photographs and longitudinal treatment records demonstrated a structurally consistent healing trajectory, progressing from exudation through keratin changes and desquamation to restoration of normal skin architecture (Supplementary Figures S1–S28; Supplementary Tables S1–S28).

From a safety perspective, no serious adverse events were reported during long-term follow-up. Some patients experienced transient increases in erythema, alterations in keratin patterns, or fluctuations in pruritus; however, these responses resolved spontaneously with observation alone and did not necessitate additional medical intervention. These findings indicate that the saehim system was well tolerated during prolonged application in this observational cohort.

The present findings should be interpreted within the context of an observational study design.
Nevertheless, this study was conducted without a randomized control group, and causal interpretation of efficacy and safety is therefore limited. Further randomized controlled trials and multicenter clinical investigations are required to determine whether the reproducibility and safety observed in this study can be consistently demonstrated across broader clinical settings [24].

5.5 Limitations

This study was designed as an observational case-series without a randomized control group, which limits direct comparison of clinical effectiveness between the saehim system and conventional therapies. Accordingly, the findings should be interpreted as hypothesis-generating rather than confirmatory.

In addition, some clinical assessments relied on time-series clinical photographs and visual evaluation, and objective biological markers—such as molecular or immunological indicators—were not included. These factors may introduce potential selection and assessment biases. Future studies incorporating randomized controlled designs, objective biomarkers, and standardized outcome measures are warranted to further evaluate the therapeutic effects, reproducibility, and underlying physiological mechanisms associated with the saehim system [26].

5.6 Concluding Perspective

This study suggests that, in the clinical management of atopic dermatitis, a recovery process characterized by sequential tissue change—beginning with separation and emission of pathological tissue and followed by restoration of normal skin architecture—can be observed under saehim system–based treatment. Reproducible recovery patterns and sustained clinical stability were documented not only in localized lesions but also in cases of generalized atopic dermatitis.

These findings support the clinical relevance of an emission-based recovery framework as a complementary perspective to conventional suppression-centered strategies for chronic inflammatory skin diseases [24, 29, 30, 34]. With further validation through randomized controlled trials, multicenter studies, and mechanistic investigations, the scope and clinical significance of this recovery-oriented model may be more clearly defined.

VI. Conclusion

This study observed that application of the saehim system, administered as oral monotherapy without concomitant topical agents or localized treatments, was associated with clinical recovery and long-term stability in patients with atopic dermatitis.

Across the analyzed cohort of 35 patients, a common staged recovery sequence was repeatedly observed, progressing from stabilization of acute inflammation to hyperkeratinization, desquamation, and subsequent restoration of normal skin architecture. This recovery pattern was identified consistently regardless of lesion extent or baseline disease severity.

These observations suggest that clinically measurable recovery in atopic dermatitis may proceed through an ordered and reproducible sequence, rather than occurring as isolated or random symptom fluctuations.

In contrast to conventional therapeutic strategies that primarily emphasize suppression of inflammatory responses for symptomatic control, the saehim system applied in this study was associated with recovery processes characterized by sequential tissue change and restoration. The sustained clinical stability and absence of recurrence observed during long-term follow-up support the clinical feasibility of this approach as a potential complementary strategy addressing limitations of existing suppression-centered treatments for chronic and relapsing atopic dermatitis [24, 29, 34].

Although the present study focused on atopic dermatitis, the observed recovery patterns may have broader relevance to other chronic inflammatory skin disorders. Further validation through controlled comparative studies and investigations into underlying physiological and

immunological processes will be necessary to clarify the scope, applicability, and medical significance of the saehim system [26].

VII. Ethics Approval and Consent for Publication

Ethics Approval:

This study was conducted in accordance with the ethical principles for human research outlined in the Declaration of Helsinki. The study population consisted of patients treated within the scope of routine clinical care under the Korean Medical Service Act, and no additional invasive procedures or experimental interventions were involved. Accordingly, this study met the criteria for exemption from Institutional Review Board (IRB) review under applicable national regulations.

Consent to Participate:

All participants received adequate explanation regarding the study objectives and the academic use of clinical data and provided voluntary written informed consent prior to participation. For pediatric patients, written informed consent was obtained from their legal guardians.

Consent for Publication:

Separate explicit consent for publication of clinical photographs and data—including use for journal publication, academic presentation, and educational purposes—was obtained from all participants or their legal guardians. All materials were fully anonymized prior to publication to prevent personal identification.

Data Protection and Ethical Compliance:

All collected clinical data and images were fully anonymized, and data management was

conducted in compliance with the recommendations of the International Committee of Medical Journal Editors (ICMJE) and the Personal Information Protection Act (PIPA) of the Republic of Korea. Detailed documentation regarding ethical compliance, informed consent procedures, data anonymization processes, and supporting evidence is provided in Supplementary File S36.

VIII. Code Availability

This study did not involve the development or use of custom software, algorithms, or code. All analyses were based on clinical observation and standard descriptive methods; therefore, code availability is not applicable.

IX. Funding

This research received no specific grant from any funding agency in the public, commercial, or not-for-profit sectors.

X. Conflicts of Interest

The author developed the saehim system and the saehim (SRM1) formulation used in this study and provides this treatment in clinical practice. No external funding was received, and no patents, licensing income, or commercial financial interests related to this work are declared.

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Language editing and translation assistance were provided using an AI-based language model. All scientific content, data interpretation, and final manuscript decisions were fully reviewed and verified by the author.

XII. Data Availability

Clinical data from this study are not publicly available to protect patient privacy. De-identified data supporting the findings of this study may be made available upon reasonable request to the corresponding author. All aggregated data generated or analyzed during this study are included in this published article and its supplementary information files.

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