



# A Case Study of the Management of Childhood Atopic Dermatitis Applying Ayurveda Treatment

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## Abstract

**Background:** Chronic inflammatory skin disease Atopic Dermatitis (AD) compromises the skin barrier and decreases cell-mediated immune activity. The acute stage of this condition is characterised by erythema, edema, vesicles, and fluid leakage, while the chronic stage is marked by thickening and hyperpigmentation, known as lichenification. The prevalence of skin conditions is increasing daily. Other medicinal methods offer just a partial cure, though. Skin issues can be effectively managed with the help of Ayurveda. *Vicharchika* can be likened to atopic dermatitis, exhibiting similar characteristics as described in ancient Ayurvedic texts. **Aim:** The study aims to assess the efficacy of Ayurvedic treatment in managing Atopic dermatitis. The study aims to evaluate the impact of Ayurveda intervention on the severity of symptoms and quality of life of paediatric patients with Atopic dermatitis. **Methods:** The study involved a 4-year-old girl presenting with scaly, dry, pruritic skin, reddish, blackish excoriated lesions, and oozing. The patient sought treatment at the Kaumarbhritya outpatient section of Mahatma Gandhi Ayurved College, Hospital and Research Centre. The treatment plan spanned two weeks of Ayurvedic medicines and dietary recommendations, followed by a one-month inpatient phase. Inpatient care included dietary modifications, internal medicines, *Snehapana* (ghee consumption), *Kushtahara* (itch-alleviating), and *Kandughna* (anti-pruritic) *Dravyas*. **Results:** The Ayurvedic treatment yielded positive results for the patient. Notable improvements were observed, including a reduction in excoriation, irritation and dryness. The severity of the condition was assessed using SCORAD SCALE, which showed a decline from the initial score of 46.3 to a post-treatment score of 17.8. Additionally, the patient's condition improved significantly, transitioning from severe eczema to a state of near clarity as assessed by the POEM SCALE. **Conclusion:** This study demonstrates the efficacy of Ayurvedic treatment in effectively managing atopic dermatitis in pediatric patients. The positive outcomes observed, both in terms of symptom relief and improved quality of life, underscore the potential of Ayurveda as a valuable therapeutic approach for addressing chronic inflammatory skin disorders like atopic dermatitis. Maintaining dietary restrictions and ongoing internal medication emerged as essential strategies to prevent the recurrence of the condition.

**Keywords:** Ayurveda, Lichenification, POEM, SCORAD, *Twak Vikaras*

## 1. Introduction

One of the most prevalent childhood skin illnesses, atopic dermatitis is frequently linked to either a family history or a personal history of allergies, as well as other allergic conditions including asthma or allergic rhinitis. It may be inherited, most likely autosomal dominant. The definition of "atopy" by Coca and Cooke in 1923 was "without place, unusual," and the name

"atopy" is derived from that word in Greek<sup>1</sup>. About 10-20 % of children and 1-3 % of adults are affected by it. It starts sooner; roughly 45% of instances start in the first 6 months of life, 60% in the first year and 85% before the age of 5<sup>2</sup>. Topical steroids remain the primary treatment for atopic dermatitis in modern medicine. However, their use is associated with various challenges, including steroid overuse, misuse, and concerns about side effects. These side effects encompass issues such

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as skin shrinkage, steroid-induced acne, telangiectasia, hirsutism, contact sensitization to the steroid itself, and systemic effects like the suppression of the HPA axis, growth retardation, and more. While their effectiveness is widely recognized, the overall increase in steroid usage is not always closely monitored, and side effects are often inadequately addressed<sup>3</sup>. In contemporary times, *Vicharchika* (skin disease) aligns with the clinical presentation of atopic dermatitis, as detailed in traditional *Ayurvedic* texts. Individuals across all age groups from infants to adults, grapple with this condition, experiencing symptoms ranging from parched, itchy skin to painful, pruritic rashes<sup>4</sup>.

In today's fast-paced lifestyle adherence to the elaborate regimen of *Shodhana* (purification), therapy becomes challenging. Therefore, in the current scenario, *Shamana* (palliative) therapy coupled with *Nidanaparivarjan* (avoidance of causative factors) emerges as the preferred approach<sup>5</sup>.

## 2. Case Report

A 4-year-old girl from Maharashtra at the OPD Department of Kaumarbhritya, Mahatma Gandhi Ayurved College, Hospital and Research Centre in Wardha. She exhibited several concerning skin issues, including dryness, itching, and scaliness. Additionally, her face and head displayed reddish-black excoriating lesions with oozing, all of which had been presenting for the past month.

## 3. History of Presenting Complaints

She was delivered via Full-Term Normal Vaginal Delivery (FTNVD), the second child of non-consanguineous parents. She weighed 3 kg at birth. The newborn phase was uneventful, albeit the baby began to cry shortly after birth with a typical sucking reflex. Every developmental milestone was successfully met. She has a history of fever along with diarrhoea at the age of one. The symptoms improved after receiving medication.

One month ago, the mother observed a reddish macule on her child's neck, accompanied by itching. When the child scratched the area, there was a noticeable bloody discharge. Over time, this condition spread to adjacent areas, including the face and head. Concurrently, the child's skin became increasingly dry,

exacerbating the discomfort. The persistent night-time scratching by the child led to disrupted sleep.

Despite seeking medical advice from allopathic practitioners and following their prescribed medication for two weeks, there was minimal to no improvement in the child's condition. Consequently, they sought *Ayurveda* management for their child's ailment.

## 4. Medical, Family, Diet and Psycho-social History

The patient was delivered via Full-Term Normal Vaginal Delivery (FTNVD). History of fever and diarrhoea at the age of one, which improved with medication. Presented with skin issues including dryness, itching, and scaliness, along with reddish-black excoriating lesions with oozing on the face and head persisting for a month. Previously received allopathic treatment for two weeks with minimal to no improvement. Non-consanguineous parents. No significant family history of similar skin issues or chronic conditions was reported. She is a non-vegetarian. Her dietary habits include consuming packaged foods like chips, crackers, sweet, cold, coloured food or soft drinks from the shop every other day. Additionally, she eats 2 chapatis, 1/2 bowl of *sabji*, and either 1/2 bowl of rice or 1/2 glass of milk every day. The child's persistent night-time scratching led to disrupted sleep, indicating a potential impact on her psycho-social well-being. The family sought *Ayurveda* management after unsuccessful allopathic treatment, suggesting a preference for alternative healthcare approaches. The mother's observation and concern about her child's condition.

## 5. Examination

The skin exhibits characteristics of dryness, itchiness, and scaliness, accompanied by the presence of reddish-black excoriating lesions that are discharging fluids. Additionally, there are some atypical lesions on the head region, marked by irregular size and shape, with crusts and lichenification, as well as serous exudates. These lesions are particularly prominent on the face and neck.

## 6. Diagnostic Criteria

The diagnosis of atopic dermatitis was established by considering the patient's medical history, and clinical

signs, and applying the Hanafin and Rajika criteria<sup>6</sup> which categorize symptoms into major and minor aspects shown in Table 1. In this case, there are 6 criteria present: 3 major criteria and 3 minor criteria.

### 7. SCORED Scale<sup>6</sup>

Before the initiation of treatment, the SCORAD (Scoring Atopic Dermatitis) (Table 2) rating tool assessed a total score of 24, with individual scores allocated to various body regions. The overall pre-treatment score reflects a severity level of 9, indicative of the skin condition's seriousness. Based on subjective symptoms, the grading yields a score of 10.

**Table 1.** Hanafin and Rajika's criteria categorise symptoms into major and minor

Major criteria	Present / Absent
'Pruritis'	Present
'Typical morphology and distribution (flexor and extensor involvement in infants and young children)'	Present
'Chronic relapsing dermatitis'	Present
'Personal or family history of atopy (asthma, allergic rhinitis, or atopic dermatitis)'	Absent
Minor criteria	Present/ Absent
'Cataracts (anterior subscapular)'	Absent
'Cheilitis'	Absent
'Conjunctivitis'	Absent
'Facial pallor'	Absent
'Hand dermatitis'	Absent
'Elevated level of IgE'	Present
'Immediate skin test reactivity'	Absent
'Itching, when sweating'	Present
'Keratoconus'	Absent
'Nipple dermatitis'	Absent
'Orbital darkening'	Absent
'Palmar hyper linearity'	Absent
'Perifollicular accentuation'	Absent
'Pityriasis alba'	Absent
'White dermographism'	Absent
'Wool intolerance'	Absent
'Xerosis'	Present
'Early age of onset'	Present

## 8. Differential Diagnosis<sup>7</sup>

### 8.1 Seborrheic Dermatitis

The presence of scalp involvement alongside the characteristic scaling and greasy appearance indicates seborrheic dermatitis. This condition frequently affects regions abundant in sebaceous glands, including the scalp, face, and neck and may manifest with erythematous plaques adorned with greasy scales.

### 8.2 Contact Dermatitis

Considering the worsening of symptoms after scratching and the presence of exudates, contact dermatitis from an irritant or allergen is plausible. The child's exposure to various environmental factors could trigger this inflammatory reaction, resulting in the observed skin manifestations<sup>8</sup>.

### 8.3 Psoriasis

Psoriasis can present with erythematous plaques with silvery scales, which may become excoriated and ooze in severe cases. The child's age and the distribution

**Table 2.** Assessment of before treatment using a SCORED scale

Area	Before Treatment
'Head and Neck'	8
'Upper Limbs'	0
'Lower Limbs'	0
'Back'	8
'Anterior trunk'	8
SCORED Rating- based on the intensity of the skin lesion	
Parameters	Before treatment
'Redness'	2
'Swelling'	0
'Oozing/crustin'	2
'Scratch marks'	2
'Lichenification'	1
'Dryness'	2
Grading Based on subjective symptoms	
Subjective parameters	Before treatment
'Itch'	7
'Sleeplessness'	3

of lesions, particularly on the face and neck, raise the possibility of psoriasis, albeit less common in pediatric populations<sup>9</sup>.

### 8.4 Impetigo

The crusted lesions with serous exudates observed on the child's face and head are indicative of impetigo, a bacterial skin infection often caused by either *Staphylococcus aureus* or *Streptococcus pyogenes*. These lesions commonly develop characteristic honey-coloured crusts following initial oozing, consistent with the observed symptoms<sup>9</sup>.

## 9. Final Diagnosis

### 9.1 Atopic Dermatitis (Eczema)

Given the child's history of itching, dryness, and exacerbation at night, along with the characteristic appearance of the lesions, atopic dermatitis is a likely consideration. This condition commonly presents with erythematous patches that can become excoriated and ooze serous fluid.

## 10. Treatment

Following a thorough evaluation in the outpatient department, the patient received a prescription for internal medications over three weeks, along with any necessary dietary restrictions. For *Ayurvedic* preparation syrup/*Kwatha/Vati*, the dose is to be determined from the adult dose as mentioned in *Sharangdhar Samhita*. Based on this adult dose, we will find the dose for the pediatric age group with the help of young's formula ( $\text{Age (years) X Adult dose/ Age (years) + 12}$ ). The medication regimen includes *Arogyavardhini vati* - 250mg<sup>10</sup> which should be taken as one tablet with warm water. Additionally, *Nimbadi Kwath* - 200mls<sup>11</sup> should be consumed at a dosage of 5 ml in the morning, mixed with honey. Tab - *Nishamalaki* - 250mg<sup>12</sup> is to be taken as one tablet twice a day, preferably with honey. *Triphala choorna* ½ tsf with honey or lukewarm water to initiate the treatment, the initial medication was *Chandrakala Lepa*<sup>13</sup>, which is intended for topical use. On the patient's second visit, *Mahatikthaka Ghritha* - 150gm<sup>14</sup> should be taken at a dosage of 5 ml, diluted in lukewarm water or milk (Table 3).

## 11. Observation and Results

The diagnosis of atopic dermatitis was established by considering the patient's medical history and clinical signs and applying the Hanafin and Rajika criteria, which categorize symptoms into major and minor aspects. This information is presented in Table 4.

## 12. SCORED Score

The evaluation of treatment effectiveness was conducted by assessing the changes observed before and after treatment using the SCORAD (Scoring Atopic Dermatitis) rating tool, as depicted in Table 5.

According to the SCORAD scale, the severity of the patient's atopic dermatitis decreased significantly from an initial score of 46.3 before treatment to a post-treatment score of 17.8. This reduction indicates a substantial improvement in the patient's condition following *Ayurvedic* treatment (Figures 1 and 2).

Furthermore, based on the POEM scale, the severity of the patient's symptoms also improved significantly. Before treatment, the POEM score indicated severe eczema with a score of 18, whereas after treatment, the score decreased to 5, indicating mild eczema. This improvement highlights the effectiveness of *Ayurvedic* intervention in alleviating symptoms and enhancing the patient's quality of life.

## 13. Discussion

In this case study, the efficacy of *Ayurvedic* treatment in managing atopic dermatitis in a pediatric patient was explored. The patient presented with classic symptoms of atopic dermatitis, including dryness, itching, excoriating lesions, and oozing, which significantly impacted her quality of life. Despite previous allopathic treatments, minimal improvement was observed, prompting the family to seek alternative healthcare approaches. *Ayurveda*, with its holistic approach, offers a promising avenue for addressing chronic inflammatory skin disorders like atopic dermatitis. The treatment plan incorporated both *Shamana* (palliative) and *Nidanaparivarjan* (avoidance of causative factors) therapies to effectively manage the condition<sup>15</sup>. Medications such as *Arogyavardhini vati*, *Nimbadi kwath*, and *Nishamalaki* tablets were administered

**Table 3.** Treatment plan

Date	Follow up	Treatment	Anupana
1/08/2023-5/08/2023	During the initial visit to the OPD department, the patient presented with symptoms of dry, itchy, and scaly skin accompanied by reddish and blackish excoriating lesions on the head and neck, along with oozing. Additionally, the patient reported decreased appetite and constipation.	1. <i>Nimbadi Kwath</i> - 200ml 5ml in the morning preferably on an empty stomach OD 2. Tab- <i>Nishamalaki</i> - 250mg 1 tablet TDS after food. 3. <i>Arogyavardhini vati</i> - 250mg 1 tablet after food BD 4. <i>Aipattikara churna</i> - ½ tsf with OD after food at night. 5. <i>Chandrakala Lepa L/A</i>	Honey  Honey Luke warm water Luke warm water
6/8/2023-10/8/2023	During the initial visit to the OPD department, the patient presented with symptoms of dry, itchy, and scaly skin accompanied by reddish and blackish excoriating lesions on the head and neck, along with oozing. Additionally, the patient reported decreased appetite and constipation.	1. <i>Nimbadi Kwath</i> - 200ml 5ml in the morning preferably on an empty stomach OD 2. Tab- <i>Nishamalaki</i> - 250mg 1 tablet TDS after food. 3. <i>Arogyavardhini vati</i> - 250mg 1 tablet BD after food 4. <i>Aipattikara churna</i> ½ tsf OD after food in night. 5. <i>Mahatikthaka ghritha</i> - 150mg 5 ml OD before food 6. <i>Chandrakala Lepa L/A</i>	Honey  Honey Luke warm water Luke warm water Luke warm water/ milk
15/8/2023	Follow up after 5 days: The skin lesion has not returned. There are no itchiness or related concerns.		

**Table 4.** Hanafin and Rajika criteria before and after treatment

Major criteria	Before treatment	After treatment
'Pruritis'	Present	Absent
'Typical morphology and distribution(flexor and extensor involvement in infants and young children)'	Present	Absent
'Chronic relapsing dermatitis'	Present	Absent
'Personal or family history of atopy( asthma, allergic rhinitis, or atopic dermatitis)'	Absent	Absent
<b>Minor criteria</b>		
Cataracts (anterior subscapular)	Absent	Absent
Cheilitis	Absent	Absent
Conjunctivitis	Absent	Absent
Facial pallor	Absent	Absent
Hand dermatitis	Absent	Absent
Elevated level of igE	Present	Absent
Immediate skin test reactivity	Absent	Absent
Itching, when sweating	Present	Absent
Keratoconus	Absent	Absent
Nipple dermatitis	Absent	Absent
Orbital darkening	Absent	Absent
Palmar hyper linearity	Absent	Absent
Perifollicular accentuation	Absent	Absent

**Table 4.** Continued...

Major criteria	Before treatment	After treatment
Pityriasis alba	Absent	Absent
White dermographism	Absent	Absent
Wool intolerance	Absent	Absent
Xerosis	Present	Absent
Early age of onset	Present	Absent

Before treatment, 6 criteria were identified, comprising 3 in the major criteria and 3 in the minor criteria. Following treatment, none of these criteria were present, indicating a successful resolution of symptoms.

along with topical applications like *Chandrakala lepa* and *Mahatikthaka ghritha*.

From an *Ayurvedic* perspective, the treatment regimen was tailored to address the underlying *Dosha* imbalance, *Dhatu* involvement, and *Srotas* dysfunction. For instance, herbs like *Nimba* (*Azadirachta indica*) and *Haridra* (*Curcuma longa*) possess potent anti-inflammatory, antibacterial, and antipruritic properties, making them effective in managing skin disorders<sup>16</sup>. These herbs were chosen based on their ability to pacify aggravated *Pitta* and *Kapha Doshas*, which are often implicated in skin conditions. The formulation of medications like *Nimbadi Kwath*<sup>17</sup>, *Triphala Churna*<sup>18</sup> and *Mahatikthaka Ghritha*<sup>19</sup> was designed to target specific aspects of the disease pathology, such as



**Table 5.** Assessment of before and after treatment using Scored Scale

Area	Before treatment	After treatment
Head and neck	8	1
Upper limbs	0	0
Lower limbs	0	0
Back	8	3
Anterior trunk	8	3
Scored rating- based on the intensity of the skin lesion		
Parameters	Before treatment	After treatment
Redness	2	0
Swelling	0	0
Oozing/crustin	2	0
Scratch marks	2	1
Lichenification	1	0
Dryness	2	1
The severity of the disease was also assessed using the Patient-Oriented Eczema Measure (POEM) Scale.		
Subjective parameters	Before treatment	After treatment
Itch	7	1
Sleeplessness	3	0

The SCORAD score calculation for eczema severity improvement can be represented as follows:

Before treatment:  $A/5 + 7B/2 + C = -46.3$  (indicating severe eczema).

After treatment:  $A/5 + 7B/2 + C = -17.8$  (indicating mild eczema).

Please note that these values suggest a significant improvement in eczema severity following treatment. Grading Based on Subjective Symptoms the severity of the disease was also assessed using the Patient Oriented Eczema Measure (POEM) Scale.

Before Treatment:- 18 (indicating severe eczema)

After Treatment:- 5 (indicating mild eczema).

detoxification, blood purification, and alleviation of itching and inflammation. These formulations, rooted in classical *Ayurvedic* texts, have stood the test of time and continue to be invaluable in modern clinical practice.

Moreover, topical applications like *Chandrakala Lepa*<sup>20</sup> not only provide symptomatic relief but also aid in the regeneration of healthy skin tissue. The synergistic action of various herbs and formulations ensures comprehensive management of the condition, addressing both the symptoms and the underlying pathology.

**Figure 1.** Before treatment.**Figure 2.** After treatment.

Furthermore, the assessment of treatment effectiveness using standardized tools like the SCORAD scale and POEM scale provides objective measures of improvement. The significant reduction in SCORAD score from 46.3 to 17.8 post-treatment, along with the transition from severe eczema to almost clear skin according to the POEM scale, underscores the therapeutic potential of *Ayurveda* in managing atopic dermatitis.

## 14. Conclusion

In conclusion, this case study highlights the novel approach of *Ayurvedic* treatment in managing childhood atopic dermatitis. By combining traditional wisdom with modern clinical practices, significant improvements in symptom severity and quality of life were achieved. The use of standardized assessment

tools reaffirmed the efficacy of *Ayurveda* in addressing chronic inflammatory skin conditions, offering a promising alternative to conventional treatments. This study underscores the innovative potential of Ayurveda as a comprehensive and sustainable therapeutic option for pediatric patients with atopic dermatitis, paving the way for further exploration and integration into mainstream healthcare practices.

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