Case Report

Potential implications of Ayurveda in Psoriasis: A clinical case study

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A B S T R A C T

Immune response of a human body to the uncertain factors leads to the accelerated inflammatory proliferation of the ailing cells of the skin known as Psoriasis. Although the condition found described many decades ago, the etiology and treatment look under-researched. In Ayurveda, many herbs have proven efficacy in psoriasis, but the multifaceted etiology of the disease needs a multimodal treatment approach. We report about Ayurveda treatment in a 68-year-old female patient with plaque psoriasis presented with erythematous plaques on the anterior surface of the legs, right forehand, and neck region. The Auspitz sign and Koebner phenomenon were positive. The treatment protocol was adopted as per Ayurvedic samprapti (pathophysiology) and the patient cured completely without reporting any adverse events after the one year of treatment. No recurrence observed even after one year of the halted treatment. The importance of a wholesome diet as a health promoter is also revalidated. Photographic documentation was recorded with the proper consent of the patient during successive treatment and regular follow-ups. Altogether, multimodal Ayurveda treatment led to speedy and substantial recovery from a chronic case of psoriasis.

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1. Introduction

Psoriasis is a chronic immune-mediated inflammatory condition mainly affecting the skin and joint. Its prevalence in India is about 0.44–2.8 percent. Males are being affected by psoriasis two times more common than females [1]. Various sites of the body such as scalp, face, trunk, limbs, palms, and soles involve in psoriasis. The diagnosis of psoriasis depends on tissue biopsy and distribution of skin damage. Plaque psoriasis (Psoriasis vulgaris), Inverse psoriasis, Guttate psoriasis, Pustular psoriasis, and Erythrodermic psoriasis are a few of the clinical patterns reported in psoriasis cases [2]. The chronic nature, recurring pattern, and visibility of psoriasis produce a great adverse impact on the psychological and social aspects of patients’ life. Psychosocial disability affects their daily work as well as social interactions. In Ayurveda, skin diseases have collectively considered under a common term of Kushtha. Most of the formulations described in Kushtha chikitsa have efficiently been used by the physicians to treat different skin ailments. However, due to the complex pathophysiology and chronic and relapsing nature of psoriasis, the multimodal treatment approach has been adopted covering the Jirnajwara chikitsa, Vatarakta chikitsa, and Rasayana chikitsa along with Kushtha chikitsa. In the present case, the multimodal Ayurveda treatment approach resulted in early recovery from psoriatic lesions with no recurrence so far.

1.1. Patient information

A 68-year-old female homemaker had been diagnosed as plaque psoriasis and was treated by a consulting dermatologist wherefrom the patient was taking allopathic treatment for three years with regular follow-ups. Topical and systemic immunosuppressive therapy was resulted in symptomatic relief during the last treatment. Personal history revealed that the patient’s general health was good. All the blood tests (routine tests) were within a normal range. No concomitant illness was found associated. However, due to a recurring pattern caused by the unknown aggravating factors, the patient discontinued allopathic treatment and consulted for Ayurveda treatment.

2. Clinical findings

The patient presented with erythematous plaques on the anterior surface of the shin bone, forehand, and neck region. The
affected skin was found with a variable shade of red color and the surface covered with large silvery scales (Fig. 1a and b). The patient was suffering from itching and burning all over the body. At the time of the case presentation, the Auspitz sign and Koebner phenomenon found positive. No signs of psoriatic arthritis and nail bed psoriasis were found.

2.1. General examination

Body temperature (97.6 °F), Pulse (88/min), and Blood Pressure (118/86) were within normal limit.

2.2. Systemic examination

In systemic examination, respiratory and cardiovascular system found normal. The patient was restless due to itching and burning sensation over psoriatic lesions.

2.3. Asthavidha pariksha

Nadi (pulse) – Pittakaphaja; Mala (stool) – Sandra-picchila, bowel habit was regular; Mutra (urine) – Prakrita; Jivha (tongue) – Shveta-picchila, Sama (coated); Shabda – Prakrita; Sparsha (touch) – Ushna; Drika (vision) – Prakrita; Aakriti – Madhyam (medium built).

2.4. Nidana panchaka

Nidana – Viruddhahara sevana (simultaneous use of milk and salty snacks) and Raktaadvashak (excessive use of salty food, sour food like pickles, curd and sitting a long time in direct sunlight); Samprapti – Dosa – Pitta, Kapha and Rakta; Dushya – Rasa-adhatu, Rakta-adhatu and Mamsadhatu; Agni – Mandagni; Aam – Jatharagni and Dhatvagni janya; Srotasa – Rasavaha, Rakta-vaha and Mamsavaha; Adhisthana – Twaka; Rogamarga – Bahya; Vyadhi Swabhava – Chirakari (chronic); Sadhyasadhyata – Kricchrasadhya (difficult to treat); Poorva roopa – Abhyantara daha (feeling of warmth), Kandu (itching), Mukhapaka (mouth ulcers) and Mandagni (anorexia); Roopa: Jwara (fever), Trishna (thirst), Daha (burning sensation), Kandu, Tvakavivaraya (in present case, skin with a variable shade of red color and the surface covered with large silvery scales.), Balahani (generalized weakness); Upashaya – Bahya shita sparsha and Abhyanga (improvement on wet cold sponging and oil application); Anupashaya – Ushna sparsha (increased symptoms on work in hot and humid climate).

2.5. Diagnostic assessment

All routine blood tests were within a normal range. The patient was not ready for tissue biopsy due to unaffordable cost. Therefore, based on clinical presentation, distribution of the skin damage, and positive Auspitz sign, the case diagnosis was confirmed as plaque psoriasis.

3. Therapeutic interventions

All oral and topical modern medications stopped. In this case, the involvement of pitta and kapha dosha ascertained by observing the clinical presentation such as Daha (burning sensation), Kandu (itching), Raktavarnata (redness), and the nature of skin lesions. Vitiated pitta and kapha dosha found involved in the pathological progress. The details of the internal and external medications prescribed have been mentioned in Table 1. The details of all the prescribed medicines including their classical reference, ingredients, and indications are given in Supplementary Table 1.

4. Timeline

In the present case, all the treatment was continued for one year. Pathyahara (A strict dietary plan) continued for the next one year after the end of active treatment to check the recurrence of psoriasis.
Psoriasis is an autoimmune disease where genetic and environmental factors have a significant role [3]. Moreover, cytokines, inflammatory cascade, and keratinocytes play an important role in the pathogenesis of psoriasis [4]. Among different types of psoriasis, plaque psoriasis (psoriasis vulgaris) is the most common form [3]. Being a chronic non-communicable disease, the pathogenesis of psoriasis [4]. Among different types of psoriasis, plaque psoriasis (psoriasis vulgaris) is the most common form and [5]. Moreover, cytokines, inflammatory cascade, and keratinocytes play an important role in the pathogenesis of psoriasis [4]. Among different types of psoriasis, plaque psoriasis (psoriasis vulgaris) is the most common form.

1. **Follow-up and outcomes**

The follow-up details with timeline, treatment protocol, and periodic clinical outcome have been mentioned in **Table 2**. The psoriatic lesions with all its signs and symptoms cured. No adverse events witnessed during the treatment. Photographs of affected areas before and after the treatment are shown in **Fig. 1**. The patient kept only on a strict dietary regimen for the next year but no recurrence observed. Photographs captured with the consent of the patient revealed the same results after the two years (Fig. 1g, h).

2. **Discussion**

Psoriasis is an autoimmune disease where genetic and environmental factors have a significant role [3]. Moreover, cytokines, inflammatory cascade, and keratinocytes play an important role in the pathogenesis of psoriasis [4]. Among different types of psoriasis, plaque psoriasis (psoriasis vulgaris) is the most common form [3]. Being a chronic non-communicable disease, the pathogenesis of psoriasis [4]. Among different types of psoriasis, plaque psoriasis (psoriasis vulgaris) is the most common form and [5]. Moreover, cytokines, inflammatory cascade, and keratinocytes play an important role in the pathogenesis of psoriasis [4]. Among different types of psoriasis, plaque psoriasis (psoriasis vulgaris) is the most common form.

3. **Summary**

In the present case, psoriasis was the cause of skin lesions, and the patient was following the excess use of salty and sour food items, old butter and curd, spicy food, simultaneous use of milk products and salty snacks, etc. The patient was taking modern medications without following the diet and lifestyle changes. The patient was advised to follow a strict dietary plan and continue the treatment regimen. The patient was followed up regularly, and the clinical improvement was observed after two years. The patient was advised to continue the treatment regimen for better treatment response, speedy recovery, and to avert the recurrence in chronic skin ailments. In present case, the patient was following the excess use of salty and sour food items, old butter and curd, spicy food, simultaneous use of milk products and salty snacks, etc. The patient was taking modern medications without following the diet and lifestyle changes. 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**Table 1**

| Sr. No. | Formulation/ Preparation | Dose, frequency and time | Adjuvant | Duration |
|---------|--------------------------|--------------------------|----------|----------|
| 1.      | Patolakaturohinyadi kashaya (Herbal decoction) | 20 mL of kashaya, twice daily on an empty stomach | 50 mL of lukewarm water | 6 Month |
| 2.      | Kaishor guggulu (Tablet) | 1 gm (2 tablets) twice daily, after meal | Lukewarm water | 6 Month |
| 3.      | Mahatikta ghrita (Capsule of medicated ghee) | 2 gm (4 capsules), once daily on an empty stomach at early morning | Warm water | 6 Month |
| 4.      | Gandhaka rasayana (Tablet) | 250 mg (2 tablets) twice daily after breakfast | Water | 6 Month |
| 5.      | Khadirarishta (Herbal fermented liquid) | 20 mL of arisha, twice daily after meal | 50 mL of normal water | 6 Month |
| 6.      | Winsors oil (Herbal coconut base oil) | Twice a day, Topical application | – | 1 Year |
| 7.      | Strict dietary plan | Restricted use of salt, sour food items, curd, old butter, milk and sweet products, meat and fish, overeating etc. | – | 2 Years |

* (All the internal medicines continued for the next six months by reducing their aforementioned prescribed doses to the half and with the same frequency, time, and adjuvant.).

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**Table 2**

| Timeline | Dates | Treatment plan | Periodic clinical outcomes |
|----------|-------|----------------|---------------------------|
| Onset of treatment | 20/04/2018 | As per Table 1 | Ayurveda treatment started. |
| Follow-up 1 | 29/05/2018 | As per Table 1 | Subjective improvement in signs and symptoms. Itching and redness reduced. |
| Follow-up 2 | 28/06/2018 | As per Table 1 | Observational changes in signs and symptoms (Fig. 1c, d). |
| Follow-up 3 | 31/07/2018 | As per Table 1 | Auspitz Sign found negative. |
| Follow-up 4 | 28/08/2018 | As per Table 1 | Significant improvement in all signs and symptoms. No itching and burning sensation. |
| Follow-up 5 | 23/10/2018 | Dose of medicines reduced to half | Recovered completely (Fig. 1e, f). No itching and burning sensation. |
| Follow-up 6 | 16/04/2019 | Only dietary regimen continued | No recurrence found. Normal biochemical profile. |
| Follow-up 7 (telephonic conversation) | 22/09/2019 | Only dietary regimen continued | No recurrence found. |
| Follow-up 8 | 30/04/2020 | Only dietary regimen continued | No relapse in any sign and symptom (Fig. 1g, h). |
Various scientific reports reveal the promising effects of Guggulu (Commiphora mukul Hook ex Stoks.) against different chronic diseases such as psoriasis, dermatitis, skin diseases, infectious diseases, arthritis, etc. It is due to its anti-inflammatory and anti-oxidant effects by targeting multiple signaling pathways [10]. Terpenoidal constituents, steroids, flavonoids, gugguletrols, lignans, sugars, and amino acids present in Guggulu are responsible for its therapeutic effects [11]. Guggulu is well known for its yogavahi (synergism) property in Ayurveda. Guggulu can act as a drug carrier by entrapping active pharmaceutical ingredients and mediate their sustained release action [12]. Gugulipid found as effective as tetracycline in the treatment of nodulocystic acne proving the anti-infective and anti-bacterial properties of Guggulu [13]. K. guggulu is a polyherbal preparation indicated in Vatarakta and well known for its Kantikara (restores skin’s natural radiance and suppleness) property in Ayurveda [6]. It reduces inflammation and pain associated with Vatarakta by purifying blood. Furthermore, K. guggulu acts as an antiallergic, antibacterial, and blood purifying agent [14]. Therefore, it helps to reduce redness, inflammation and acts as a natural blood cleanser by its pacifying effects on deep sited vitiated doshas of psoriasis.

M. ghrita, a medicated ghee has administered internally for shanama (pacifying effect on dosha) purpose. A capsulated form of ghee (3 ml/capsule) was used instead of the classical dosage form to overcome the palatability problem due to its very bitter taste. In the case of Kushtha (skin diseases), doshas exist in dhatus such as Rasa, Rakta, Mamsa, and Meda. Ghee has suksmastrotogamitva action and it can reach and also nourish the Shukra dhatu. Moreover, in Kushtha the medicated ghee fortified with Tikta and Kashaya rasa has been recommended for internal and external use. Various active phytoconstituents extracted in the Mahatiktaka ghrita work synergistically to cure psoriasis, possibly through the liposomal drug delivery system [15].

Gandhak (sulfur) in Ayurveda has Kushthaghna property. It’s Garavishahar (anti-poisonous) and Rasayana (rejuvenation) properties help to cure and correct the causes of skin diseases [16]. According to modern science, sulfur possesses an anti-inflammatory and anti-oxidant property which plays an important role in the treatment of autoimmune diseases such as psoriasis and psoriatic arthritis [17]. It is known for its Kushthaghna, Kle-daghna, Ampachhana, Raktaprasadana, and Rasayana properties. In Gandhak rasayana, purified sulfur has been treated with different medicinal herbs to improve its pharmacological actions to many folds [8].

Arista Kalpana is a continuous hydro-alcoholic extraction method wherein various phytoconstituents from raw herbs reach into the medium. Arista shows better therapeutic efficacy due to biological transformations into phytochemical compounds mediated by microbes [18]. Khadirarista has recommended for all types of Kushthha. Most of the ingredients of Khadirarista possess anti-psoriatic action. The heartwood decoction of Khadir (Acacia catechu Willd.) has since long been used to treat skin ailments including psoriasis in a traditional practice. It helps to purify the blood. It has immunomodulatory action that may activate both cell-mediated as well as humoral immunity. Among various phytoconstituents present in Acacia catechu, catechins may contribute to its anti-inflammatory and antioxidant activities [19]. In an experimental study, the water extract of Acacia catechu showed inhibition of pro-inflammatory cytokine TNF-α and a significant increase in cytokine IL-10. IL-10 helps to control the secretion of pro-inflammatory cytokines by augmenting the proliferation of B cells, mast cells, and thymocytes [20]. Darvi (Berberis aristata DC.) has anti-inflammatory activity. In skin diseases, the aqueous extract of B. aristata is found effective internally as well as externally [21]. Topically applied B. aristata extract loaded transfersomal gel showed marked improvement in inflammatory changes of psoriatic skin of experimental animals [22]. Since ages, Bakuchi (Psoralia corylifolia Linn.) has also been used for its promising results in various skin ailments. It contains various phytoconstituents such as flavonoids, alkaloids, coumarins, meroterpenes, and essential oils which contribute to its multifaceted pharmacological actions including anti-inflammatory, antioxidant, anti-leprotic, antipsoriatic, antibacterial, anticancer and immunomodulatory activities [23,24]. Dhataki pushpa (flowers

Fig. 2. The possible actions of Ayurveda drugs in Psoriasis.
of Woodfordia fruticosa Kurz.) is useful in inflammation and skin diseases [25].

After the treatment of the first six months, the prescribed doses of all the internal medicines were reduced to the half by considering the age, gender, roga and rugna Bala (severity of the disease and the condition of the patient) and, rogavastha (stages of the disease) [6].

In the present case, winsoria oil has prescribed for external use. In winsoria oil, coconut oil (Cocos nucifera (L.) Kuntze.) has processed with Vidaphala (Wrighita tinctoria R. Br.), Manjishtha (Rubia cordifolia Linn.), and Sariva (Hemidesmus indicus R. Br.). Winsoria oil carries all the active pharmaceutical ingredients from these herbs and helps to cure psoriasis by enhancing their permeation across the skin. It retards hyperkeratinization, silvery scales, inflammatory responses, reduce exfoliation, and discoloration of the skin. It also prevents itching and formation of scales and sores. Vidaphala is useful in psoriasis [26]. It has anti-inflammatory and anti-dandruff properties and it is commonly used in hair oil preparations. In 777 Oil, a coconut oil-based herbal preparation for psoriasis, the leaf extract of W. tinctoria has been used [27]. Manjishtha is known for its Raktashuddhikara, Pitta-kaphahara, Varanarpana (wound healing), and Kushthaghna properties. It also has an antipsoriatic activity. Early acetate fraction of ethanolic extract of its root formulated in the form of topical gel exhibited inhibitory action on keratinocyte proliferation in the mouse tail model [28]. Sariva has also reported for anti-inflammatory, immunomodulatory, and antioxidant properties. It is effective in psoriasis due to its raktaprasadana, dahaprasamhama (reduces burning sensation), and sho-thahara (anti-inflammatory) properties [29]. Coconut oil improves the symptoms of skin disorders by its moisturizing, soothing, and emollient effects. It possesses anti-inflammatory activity. It suppresses the inflammatory markers such as cytokines, prostanoids, leukotrienes, and protects the skin by improving skin barrier function. In psoriasis, epidermal keratinocytes react to pro-inflammatory cytokines like tumor necrosis factor-α (TNF-α) and interferon-γ (IFN-γ). Interleukin-6 (IL-6) causes epidermal hyperplasia in the psoriatic epithelium. Coconut oil intervenes in anti-inflammatory activity by reducing the secretion of IL-6 level. Uncontrolled cytokine expression can lead to dysfunction of the epidermal barrier as seen in psoriasis. The topical application of coconut oil inhibits the various cytokine levels including TNF-α, IFN-γ, IL-6, IL-5, and IL-8 [30].

The promising outcomes in the present case are a combined effect of all the Ayurveda medicines, pathya sevana (a strict diet plan), and regular follow-ups by the patient. The possible mechanism and role of Ayurveda medicines in the Samprapti-vighatana (counteracting the pathophysiology) of psoriasis have depicted in Fig. 2.

7. Patient perspective

The patient shared her perspective about the Ayurveda treatment in her local (Hindi) language. She had severe itching, burning sensation, and stress at the time of presentation, while she was free from all the signs and symptoms at the end of treatment.

8. Conclusion

In the present case, the treatment protocol was adopted as per Ayurvedic samprapti and the treatment response was observed much earlier as compared to previous alopathic treatment. No recurrence reported after the end of active treatment. The importance of a wholesome diet as a health promoter is also revalidated. The external and internal medications of Ayurveda help to correct the complex pathophysiology of psoriasis like chronic diseases.

Altogether, multimodal Ayurveda treatment led to speedy and substantial recovery from a chronic case of psoriasis.

9. Informed consent

Consent of the patient was obtained for the photographs and before reporting the case report for publication.

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Conflict of interest

None.

Appendix A. Supplementary data

Supplementary data to this article can be found online at https://doi.org/10.1016/j.jaim.2020.11.009.

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