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A protocol for the Ayurvedic management of Psoriasis: a clinical trial

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Abstract

Psoriasis is a chronic inflammatory skin condition characterized by an overactive immune response, primarily involving T-helper 1 (Th1) and Th17 cells. While its exact etiopathogenesis remains elusive, research points to a complex interplay of genetic predispositions, lifestyle choices, environmental triggers, and psychological stress. Globally, the prevalence of psoriasis varies significantly, ranging from 0.09% to 11.4%. In India, as of 2023, the reported prevalence is between 0.44% and 2.8%. Conventional management often relies on immunosuppressant drugs, which carry a risk of broad immune suppression and associated complications. In contrast, Ayurveda offers an alternative approach through immunomodulatory drugs, which are believed to act more selectively on the immune system, potentially minimizing adverse effects. This study aimed to develop and evaluate a specific Ayurvedic protocol

for the management of psoriasis. The research was designed as a pre-post interventional study involving 30 participants, aged 18-60 years, diagnosed with psoriasis based on characteristic signs of erythema, induration, and scaling. Participants were recruited from the Agadatantra Outpatient Department (OPD) of Government Ayurveda College, Tripunithura. The comprehensive treatment protocol encompassed various Ayurvedic procedures, including deep *anapachana rookshana*, *vicharana snehapana*, *Abhyanga-ushnambu snana*, *virechana*, *Brihmana varnaprasadana chikitsa* externally, *samana rasayana* drugs internally, *apyayana chikitsa*, and a second round of *virechana*. The total study duration was 47 days, followed by a 14-day follow-up period. Assessments were conducted on Day 1 (baseline), Day 25 (after the first *virechana*), Day 48 (after the second *virechana*), and after the 14-day follow-up, utilizing the Psoriasis Area and Severity Index (PASI) score. Statistical analysis of the

results demonstrated a significant reduction in scaling, erythema, and induration scores for 90% of the participants across successive assessments. This suggests that the immunomodulatory drugs and therapeutic procedures integrated into the developed protocol are effective in the management of psoriasis.

Keywords: Psoriasis, *virechana*, *snehapana*, *Abhyanga-ushnambu snana*

1. Introduction

Psoriasis is a chronic, immune-mediated inflammatory skin disease affecting millions worldwide. Characterized by well-demarcated erythematous plaques covered with silvery scales, it is a multifactorial condition influenced by genetic susceptibility, environmental factors, and immunological dysregulation. The immune system's role is central, with T-helper 1 (Th1) and Th17 cells playing a pivotal role in driving the inflammatory cascade that leads to keratinocyte hyperproliferation and epidermal thickening. While the exact cause remains unknown, its impact on quality of life is significant, often leading to physical discomfort, psychological distress, and social stigma.

The global prevalence of psoriasis underscores its public health importance, with reported rates varying widely across different populations^[1,2]. The World Health Organization (WHO) estimates a prevalence between 0.09% and 11.4%. In India, recent data from 2023 indicates a prevalence rate ranging from 0.44% to 2.8%, suggesting a considerable burden of the disease within the country. Current conventional medical

treatments for psoriasis often involve systemic immunosuppressants^[3], which, while effective, can lead to generalized immune suppression and an increased risk of infections and other systemic side effects.

Ayurveda, the traditional Indian system of medicine, offers a holistic perspective on psoriasis^[4,5], often correlating it with conditions like *Kushta* or *Ekakushta*. Ayurvedic principles emphasize restoring the balance of *Doshas* (body humors), particularly *Pitta* and *Kapha*, and purifying the blood (*Rakta Dhatu*). Instead of broad immunosuppression, Ayurvedic treatments focus on immunomodulation, aiming to restore immune balance more selectively, thereby potentially reducing the risk of systemic complications. The immunomodulatory, anti-inflammatory, and antioxidant properties of Ayurvedic drugs used in psoriasis have been documented in both classical texts and modern studies^[6-10]. This approach aligns with the growing interest in therapies that offer efficacy with a more favorable safety profile. This study was undertaken with the primary objective of developing and evaluating a structured Ayurvedic treatment protocol for psoriasis, providing a standardized approach to its management.

2. Objectives and Hypotheses

2.1. Objective

The primary objective of this clinical trial was to develop a comprehensive and effective treatment protocol for the Ayurvedic management of psoriasis.

2.2. Hypotheses

- **Null Hypothesis (H0):** The selected Ayurvedic protocol is not effective for the management of psoriasis.
- **Alternate Hypothesis (H1):** The selected Ayurvedic protocol is effective for the management of psoriasis.

3. Methodology

3.1. Study Design

This study employed a pre-post interventional design, allowing for the comparison of participants' conditions before and after the implementation of the Ayurvedic treatment protocol. This design is suitable for assessing the impact of an intervention on a specific group over time.

3.2. Study Setting

The research was conducted at the Agadatantra Outpatient Department (OPD) of Government Ayurveda College, Tripunithura, a recognized institution for Ayurvedic medical practice and research.

3.3. Study Population

A total of 30 patients were enrolled in the study. Participants were selected based on the following inclusion criteria:

- Age group: 18 to 60 years.
- Diagnosis of psoriasis, confirmed by the presence of characteristic diagnostic criteria: Erythema (redness), Scaling (silvery flakes), and Induration (thickening of the skin).

3.4. Study Duration

The total duration of the active treatment phase was 47 days. This was followed by a 14-day follow-up period to assess the sustained effects of the treatment.

3.5. Assessment Parameters

The efficacy of the treatment protocol was assessed using the Psoriasis Area and Severity Index (PASI) score. The PASI score is a widely accepted tool for quantifying the severity of psoriasis, taking into account the area of involvement and the intensity of erythema, induration, and scaling.

Assessments were performed at four key time points:

- **First Assessment:** On Day 1, before the commencement of the study (Baseline).
- **Second Assessment:** On Day 25, following the completion of the first *virechana* (purification) procedure.
- **Third Assessment:** On Day 48, after the completion of the second *virechana* procedure and the entire treatment protocol.
- **Fourth Assessment:** After a follow-up period of 14 days, to evaluate the persistence of the therapeutic effects.

3.6. Statistical Analysis

The collected data, particularly the PASI scores at different time points, were analyzed statistically to determine the significance of the observed changes. The Friedman Test was employed to assess overall differences in PASI scores across multiple related samples (the four assessment points). The Wilcoxon

signed-rank test was used for pairwise comparisons to identify specific time points where statistically significant changes occurred.

4. Treatment Protocol

The Ayurvedic treatment protocol was meticulously designed to address the multifaceted pathogenesis of psoriasis, incorporating both internal medications (*Samana Chikitsa* and *Rasayana Chikitsa*) and external applications (*Shodhana Chikitsa* and *Apyayana Chikitsa*). The protocol spanned 47 days, divided into distinct phases:

Days 1-15 (Initial Internal Medication & Preparation):

- **Panchatiktakam Kashaya:** Administered internally at a dose of 48 ml, twice daily (6 AM and 6 PM). This herbal decoction is known for its *Amapachana* (digestive and metabolic waste-clearing) and *Rookshana* (drying) properties, preparing the body for further treatments.
- **Kaisora Guggulu:** Taken internally, one tablet twice daily (6 AM and 6 PM) along with *Panchatiktakam Kashaya*. This compound is valued for its anti-inflammatory, antioxidant, and *Rasayana* (rejuvenative) properties.

Days 11-15 (Enhancing Digestion and Metabolism):

- **Vaiswanara Choornam:** Administered internally at a dose of 15 gm with lukewarm water, twice

daily (11 AM and 5 PM). This herbal powder aids in *Deepana Pachana* (enhancing digestive fire and metabolism) and further contributes to *Rookshana*.

Days 16-22 (Internal Oleation - *Vicharana Snehapana*):

- **Mahatiktaka Ghritam:** Administered internally at a dose of 25 ml, twice daily (6 AM and 6 PM). This medicated ghee is crucial for *Vicharana Snehapana*, a form of internal oleation that helps in softening the channels and preparing the body for purgation. It also possesses *Vishahara* (detoxifying) properties.

Day 23 (External Oleation and Bath):

- **Abhyangam with Psorset Oil and Ushnambu Snanam:** A full-body oil massage using Psorset oil, followed by a bath with lukewarm water. This external oleation helps in moisturizing the skin and relaxing the body, preparing for the purgation.

Day 24 (Pre-purgation Medication):

- **Avipathi Choornam:** Administered internally at a dose of 25 gm with lukewarm water at 6 AM. This herbal powder acts as a potent laxative, facilitating the *Virechana* (therapeutic purgation) procedure.

Day 25 (First *Virechana* and Post-purgation Internal Medication):

- The first *Virechana* (therapeutic purgation) is performed.

- **Panchatiktakam Kashaya:** Continued internally at 48 ml, twice daily (6 AM and 6 PM), for 15 days (until Day 39).
- **Dooshivishari Gulika:** Administered internally, two tablets twice daily along with *Panchatiktakam Kashaya*, for 15 days (until Day 39). This formulation is known for its *Vishahara* (detoxifying) and immunomodulatory effects.

Days 25-46 (External Application - Varnaprasadana Chikitsa):

- **Manjishta Njavara Lepanam:** Applied externally. This paste is known for its *Raktha Sudhikara* (blood purifying), *Vrana Ropana* (wound healing), *Kushtaghna* (anti-skin disease), and *Varna Prasadana* (complexion enhancing) properties.

Days 40-44 (Rejuvenation and Nourishment - Apyayana Chikitsa):

- **Mahatiktaka Ghritam:** Administered internally at a reduced dose of 10 ml at 6 AM. This phase focuses on *Apyayana Chikitsa*, nourishing and rejuvenating the body after the purification procedures.

Days 45-47 (Second Virechana Preparation):

- **Manibadra Gulam:** Administered internally at a dose of 25 gm at 10 PM. This herbal preparation acts as a mild purgative, preparing for the second round of *Virechana*.

Throughout Days 1-47 (Continuous External Application):

- **Psorset Oil and Psorset Ointment:** Used for continuous external application throughout the entire study duration. These formulations contain ingredients rich in tannins, triterpenoids, and saponins, contributing to local anti-inflammatory and healing effects.

The therapeutic benefits of Panchatikta Kashaya and Mahatiktaka Ghritam are well documented in Ayurvedic pharmacopoeia and experimental models [7,10,14,16]. Dooshivishari Gulika, known for its detoxifying and immunomodulatory properties, has shown promise in clinical trials [12]. Rasayana chikitsa, aimed at immune balance and rejuvenation, is supported by classical texts and nutritional science [8,9,13]. This comprehensive protocol integrates various Ayurvedic therapeutic principles, including *Shodhana* (purification), *Samana* (pacification), and *Rasayana* (rejuvenation), aiming for a holistic management of psoriasis.

5. Results

The statistical analysis of the PASI scores at different assessment points provided compelling evidence for the efficacy of the developed Ayurvedic protocol^[11,15].

The **Friedman Test** revealed a statistically significant difference in PASI scores with treatment ($P < 0.001$). This indicates that the observed changes in PASI scores across the four assessment points were not due to

chance, confirming the overall effectiveness of the intervention.

Further analysis using the **Wilcoxon signed-rank test** also demonstrated statistically significant improvements, reinforcing the positive impact of the treatment protocol on psoriasis severity.

Before & After



A clear trend of reduction in the median PASI score was observed across the treatment phases and follow-up:

- **Baseline (Before Treatment - BT):** The median PASI score was 5.85.

- **After 1st Virechana (Day 25):** The median PASI score significantly reduced to 3.8.
- **After 2nd Virechana (Day 48):** A further substantial reduction was noted, with the median PASI score dropping to 1.7.
- **After Follow-up (Day 62):** The median PASI score continued to decrease, reaching 1, indicating sustained improvement even after the active treatment phase.

Notably, the results showed that for 90% of the participants, the PASI score, encompassing scaling, erythema, and induration, significantly reduced after each assessment. This high response rate underscores the broad applicability and effectiveness of the protocol. A small percentage (10%) of the sample showed an increase in PASI score, which could be attributed to individual variability in response or other confounding factors not controlled in this study. Overall, the data strongly supports the hypothesis that the selected Ayurvedic protocol is effective in the management of psoriasis.

6. Discussion

The observed reduction in PASI scores across the study participants highlights the therapeutic potential of the integrated Ayurvedic protocol for psoriasis. The efficacy can be attributed to the synergistic action of various internal medications and external procedures, each contributing to different aspects of disease management.

The protocol strategically employed *Shodhana Chikitsa* (purification therapies) like *Virechana* (therapeutic purgation) alongside *Samana Chikitsa* (pacifying therapies) and *Rasayana Chikitsa* (rejuvenative therapies).

Shodhana Chikitsa: The inclusion of two rounds of *Virechana*, meticulously prepared for with *Snehapana* (oleation) and *Swedana* (fomentation, implied through *Abhyanga-ushnambu snana*), is central to the Ayurvedic approach. *Virechana* is believed to eliminate vitiated *Pitta Dosha* and accumulated toxins (*Ama*) from the body, particularly from the blood (*Rakta Dhatu*), which is considered a key site of pathology in *Kushta* (skin diseases). The initial *Rookshana* with *Panchatiktakam Kashaya* and *Vaiswanara Choornam* helps in drying up *Ama* and preparing the channels for detoxification. *Avipathi Choornam* acts as a potent purgative, ensuring effective elimination.

Samana Chikitsa and Rasayana Chikitsa:

- ***Panchatiktakam Kashaya:*** This decoction, rich in bitter herbs, is known for its *Amapachana* (digesting toxins), *Rookshana* (drying), *Vishaghna* (anti-toxic), *Kushtaghna* (anti-skin disease), and *Rasa Rakta Prasadana* (purifying plasma and blood) properties. Its consistent use helps in controlling inflammation and promoting tissue health.
- ***Kaisora Guggulu:*** A well-known anti-inflammatory and antioxidant compound, it also acts as a *Yogavahi* (bio-enhancer) and *Kanthikara* (complexion enhancer). Its *Rasayana*

properties contribute to cellular rejuvenation and immune modulation, crucial in a chronic condition like psoriasis.

- ***Dooshivishari Gulika:*** This formulation is specifically indicated for its *Vishahara* (detoxifying) and immunomodulatory effects. Its inclusion targets the altered immune response seen in psoriasis, helping to rebalance the immune system.
- ***Mahatiktaka Ghritam:*** Used both for *Snehapana* and *Apyayana Chikitsa*, this medicated ghee possesses *Vishahara* properties and *Sookshma Srothogamitwa* (ability to penetrate minute channels). It helps in nourishing the tissues, reducing dryness, and facilitating the removal of subtle toxins, contributing to long-term healing and preventing recurrence.
- ***Manibadra Gulam:*** This preparation acts as a mild purgative, aiding in the gentle elimination of residual toxins and ensuring the continued cleansing of the system.

External Applications:

- ***Manjishta Njavara Lepamam:*** This external application is vital for *Varnaprasadana Chikitsa* (complexion enhancing therapy). *Manjishta* is a renowned blood purifier and *Kushtaghna*, while *Njavara* (a type of rice) provides nourishment. Together, they promote healing of lesions, reduce

inflammation, and improve skin texture and color.

- **Psorset Oil and Psorset Ointment:** These topical formulations, rich in active compounds like tannins, triterpenoids, and saponins, provide localized anti-inflammatory and healing effects. They directly act on the psoriatic lesions, reducing inflammation, scaling, and erythema, and promoting skin regeneration.

The overall mechanism of action of this protocol appears to be multi-pronged. The *Shodhana* procedures aim to cleanse the body of systemic toxins and inflammatory mediators. The internal medications work to modulate the immune system, reduce inflammatory markers, and inhibit cytokine activity and keratinocyte proliferation, which are hallmarks of psoriasis. The *Rasayana* and *Apyayana* therapies focus on nourishing the tissues, strengthening the body's natural defenses, and preventing recurrence. The combination of these therapies effectively addresses the altered immunity and inflammatory cascade characteristic of psoriasis, leading to the observed reduction in PASI scores. The significant statistical results from the Friedman and Wilcoxon tests strongly support the effectiveness of this comprehensive Ayurvedic approach.

7. Conclusion

This clinical trial successfully developed and evaluated a comprehensive Ayurvedic protocol for the management of psoriasis. The findings demonstrate that the integrated approach, combining *Shodhana* (purification), *Samana* (pacification), and

Rasayana (rejuvenation) therapies, is effective in significantly reducing the severity of psoriasis, as evidenced by the marked decrease in PASI scores for a majority of the participants. The immunomodulatory, anti-inflammatory, and antioxidant properties of the Ayurvedic drugs and procedures used in the protocol collectively target the inflammatory cascade and altered immunity associated with psoriasis. This study provides a robust foundation for the use of this specific Ayurvedic protocol as a viable and effective treatment option for psoriasis, offering a holistic approach with potentially fewer systemic complications compared to conventional immunosuppressive therapies. The consistent and statistically significant reduction in PASI scores validates the effectiveness of this Ayurvedic intervention in managing the complex pathology of psoriasis.

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