

Management of *Vipadika* (Palmoplantar Psoriasis) by *Jalaukavcharana* (Leech Therapy) - A Pediatric Case Report

Case Report

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Abstract

Vipadika is a dermatological disorder related to *Teevravedana* (extreme pain) and *Panipadasphutana* (cracking of the palms and soles) described under the concept of *Kshudra Kushta*. It mostly results from an imbalance of *Vata* and *Kapha*, the two basic constituents in Ayurveda that represent air and phlegm. This dermatological illness is linked to *Kshudra Kushta* and can be related to the concept of Palmoplantar Psoriasis in conventional medicine. This type of psoriasis typically affects the skin of the palms and soles. This case report of an 8-year-old male child with palmoplantar psoriasis (*Vipadika*) demonstrates the severe debilitating nature of the condition. The child has been experiencing foot soreness, occasional bleeding, peeling, and discoloration from fissures across both hands and both feet for the past 2 years. Aims and Objectives: The main objective is to improve the patient's quality of life by relieving their symptoms of palmoplantar psoriasis (*Vipadika*), with a particular emphasis on minimizing pain, bleeding, and skin abnormalities. Methods: The treatment approach involved *Raktamokshana* (Bloodletting) by *Jalaukavcharana* (Leech therapy) followed by local application of *Sarjarasa Malhara* topically for 1 month. *Shamana Aushadis*, including *Panchtikta Grutha*, *Khadirarishta*, and *Arogyavardhini Vati*, known for their anti-inflammatory and skin healing properties were employed additionally to address the underlying causes and symptoms of Palmoplantar Psoriasis (*Vipadika*). Observations and Results: Excellent improvement in Palmoplantar Psoriasis (*Vipadika*) symptoms, such as decreased pain and bleeding, and commendable skin tissue recovery with ESIF Score of 15, m-PPASI score of 21.4, DLQ Index of 5, PGA and VAS on the milder side were noted. Earlier the ESIF Score was 89.59% and then it improved to 31.25%, similarly, the m-PPASI score that was 80% improved to 29.73% after following the recommended treatment regimen for 2 months. This suggests that the Ayurved Treatment Protocol incorporated in this patient successfully treats *Vipadika* (Palmoplantar Psoriasis).

Keywords: *Vipadika*, *Palmoplantar psoriasis*, *Kshudra Kushta*.

Introduction

An 8-year-old boy, previously healthy, visited the outpatient department (OPD) with pain, skin discoloration, fissures, peeling, and occasional bleeding in his palms and soles for two years. These symptoms severely restricted his ability to run and play games for over a year. Despite using conventional treatments, including multivitamins, moisturizers, and steroids for a year, he saw no improvement and was diagnosed with psoriasis. After two years of foot soreness and skin issues, he sought Ayurvedic treatment in the Department of Kaumarbhritya, where he was diagnosed with palmoplantar psoriasis. The general examination reveals a blood pressure of 110/70 mmHg, which is within the normal range. The pulse rate is 92/min, slightly elevated but potentially situational. The patient has a height of

135 cm and a weight of 32 kg, resulting in a BMI of 17.6, which falls within the normal range for their age and gender. The respiratory rate is 22/min. Examination of the eyes shows no pallor, indicating an absence of anemia, and the tongue appears healthy, with no coating or pallor. Overall, the findings suggest good health.

General examination as per Table 1 shows that all vitals of the patient were normal. However, local examination of the skin of bilateral palms and soles in the patient exhibited deep cracks with thickened, rough, and dry skin. Discoloration and scaly plaques along with definitive induration and numerous deep fissures were observed. It shows the ESIF Scale which indicates that the patient had a total score of 43 (Moderate to Severe Involvement). (1)

A unique scoring system called the m-PPASI (Modified Palmoplantar Psoriasis Area and Severity Index) is used to evaluate the degree and location of psoriatic involvement for every clinical symptom, including erythema, desquamation of the palms and soles, infiltration for plaque PPP, or pustules for pustular PPP. As shown in Table 1 for this patient the score was assessed on Day 0 which was calculated as 57.6 indicating the severity of the patient's state before treatment.(2)

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Table 1: Local examination of palm and soles (1)
Local Examination of the skin of the palm and soles: -
1. ESIF Score (ESIF- Erythema, Scaling, Induration, Fissuring Scale)

Sr. No.	Parameter	Findings as per ESIF Score			
		Right Palm (A)	Left Palm (B)	Right Soles (C)	Left Soles (D)
1	Erythema	Red, but not dark red, appearance (Score = +2)	Red, but not dark red, appearance (Score = +2)	Deep red to purple appearance (Score = +3)	Deep red to purple appearance (Score = +3)
2	Scaling	Very thick coverage, all lesions covered (Score = +3)	Very thick coverage, all lesions covered (Score = +3)	Very thick coverage, all lesions covered (Score = +3)	Very thick coverage, all lesions covered (Score = +3)
3	Induration	Moderate, definitive induration, approximately 0.75-mm elevation (Score = +2)	Moderate, definitive induration, approximately 0.75-mm elevation (Score = +2)	Noticeable height, at least approximately 1-mm elevation (Score = +3)	Noticeable height, at least approximately 1-mm elevation (Score = +3)
4	Fissuring	Numerous and/or deep fissures (Score = +3)	Multiple fissures, intermediate in depth (Score = +2)	Numerous and/or deep fissures (Score = +3)	Numerous and/or deep fissures (Score = +3)
		A= 2+3+2+3= 10	B=2+3+2+2= 9	C= 3+3+3+3= 12	D=3+3+3+3= 12
Total score		A+B+C+D= 10 + 9 + 12+ 12 = 43 (on Day- 0)			
Interpretation		ESIF Scale which indicates Moderate to Severe Involvement			
2. Modified Palmoplantar Psoriasis Area and Severity Index (m-PPASI) (2):					
On Day 0		<ul style="list-style-type: none">Right Palm: Total score = 8Left Palm: Total score = 10Right Sole: Total score = 19.8Left Sole: Total score = 19.8			
Findings		Overall m-PPASI score = 57.6, indicating severe psoriasis on palms and soles.			
3. Dermatology Life Quality Index (DLQI) (3):					
On Day 0		The patient's DLQI score was 25/30			
Findings		Severe impact on their quality of life due to their skin condition.			
4. Visual Analogue Scale (VAS) (4):					
On Day 0		VAS scores were 7 for both palms and 8 for both soles			
Findings		Moderate to severe pain intensity before treatment.			
5. Physicians Global Assessment (PGA) (5):					
On Day 0		PGA scores were 3 (moderate) for the right palm and 4 (severe) for the left palm and both soles			
Findings		Moderate to severe plaque psoriasis			

The Dermatology Life Quality Index (DLQI) is used to assess the impact of skin problems on patients' lives. It is a vital tool for evaluating how well therapies work and how they improve people's quality of life in both clinical and research settings. Here in this patient, the score calculated based on the questionnaire was **25 out of 30**, which again indicates the severe involvement of the disease affecting his quality of life.(3)

Visual Analogue Scale (VAS) is a tool used to track a patient's pain progression or compare the level of pain experienced by individuals with similar illnesses. VAS is indicated as a unidimensional measure of pain intensity. In this patient, VAS was observed to be in the range of moderate to severe range which shows how intolerable the pain was before treatment as shown in Table 1. (4)

The Physicians Global Assessment (PGA) is done for the psoriatic patient to assess the severity of the patient's state based on scaling, erythema, plaque, and elevation of skin. In this patient before treatment, the score as mentioned in Table 1 indicates severe involvement of disease.(5)

Pathological Parameters

Before the leech application, it is necessary to assess the coagulation abnormalities as well as moderate anemia as the leech has an anti-coagulant effect due to hirudin. In order to ensure the safety of the treatment, routine investigations were completed before it commenced. Table 2 shows that every Biochemical Parameter was found to be within normal ranges.

Differential Diagnosis

As per *Ayurveda*, *Vipadika* is a broad concept stated by *Acharyas*, which means that we cannot precisely associate it with any of the diseases mentioned in Conventional medicine. Hence, the clinical manifestation of *Vipadika* can be compared with diseases like Acquired Palmoplantar Keratoderma, Pityriasis Rubra Pilaris, Dyshidrotic Eczema, Palmoplantar Psoriasis, Contact Dermatitis, Chronic Vesicular Dermatitis (CVD), Tinea Pedis, and Magnum. (6,7,8) In this case study the patient had pain, skin discoloration with fissures, peeling, and sporadic bleeding in his bilateral palms and soles which

Table 2: Pathological Parameters

Sr. No.	Investigation tests	Findings	Normal range
1	WBC	8.4 x 10 ³ /mm ³	(3.5 - 11.0 x 10 ³ /mm ³)
2	RBC	5.20 x 10 ⁸ /mm ³	(3.80 - 5.80 x 10 ⁸ /mm ³)
3	Hb	13.5 g/ dL	(11.0 - 16.5 x g/ dL)
4	HCT	38.2%	(35.0- 50.0 %)
5	PLT	220 x 10 ³ /mm ³	(150- 390 x 10 ³)
6	PCT	0.250%	(0.100 - 0.500 %)
7	MCV	89 um ³	(80-97 um ³)
8	MCH	28.5 pg	(26.5 - 36.5 g/dL)
9	MCHC	32.9 g/dL	(31.5 - 36.5 g/dL)
10	RDW	14.0%	(10.0 - 15.0 %)
11	MPV	8.3 um ³	(6.5 - 11.0 um ³)
12	PDW	16.3%	(10.0 - 18.0 %)
13	DLC	LYM- 25.7 %	(17.0 - 48.0 %)
		MON- 6.8 %	(4.0 - 10.00 %)
		GRA- 71.2 %	(43.0- 76.0 %)
		LYM- 1.9 x 10 ³ /mm ³	(1.2 - 3.2 x 10 ³ /mm ³)
		MON- 0.5 x 10 ³ /mm ³	(0.3 - 0.8 x 10 ³ /mm ³)
		GRA- 5.7 x 10 ³ /mm ³	(1.2- 6.8 x 10 ³ /mm ³)

suggested the final diagnosis of Palmoplantar Psoriasis which can be correlated with *Vipadika*.

Charmadala, Kitiba, Vicharchika, Vipadika, Charmakhya, are some of the differential diagnoses as per Ayurveda.

Final Diagnosis: - *Vipadika* (Palmoplantar Psoriasis)

Diagnosis and Treatment Approach

Based on the examination results and the patient's medical history, the diagnosis was made with an emphasis on the variables that contributed to the illness, such as *Nidanas* (cause factors), *Vataj Ahara Vihara* (dietary and lifestyle choices that vitiate Vata),

and the consequent aggravation of Kapha and Vata Doshas. When this imbalance developed in the *Rakta and Rasa Dhatu* (blood and plasma tissue), it resulted in *Sthana Samshraya* (localized accumulation) in the *Pada* (soles) and *Paani* (palms), which in turn caused *Teevra Vedana* (extreme agony) and *Sphutana* (cracking). The concepts of *Vata Kaphahara Chikitsa*—therapies meant to calm an agitated *Vata and Kapha Dosha*—were the foundation of treatment planning.

Treatment Protocol

The treatment regimen used on this patient included *Shodhan Chikitsa* and *Sanshaman Aushadi*. Table 3 provides a detailed explanation of this regimen, along with the precise dosage given to the child for the required duration.

Table 3: Treatment Protocol

Treatment	Medicine	Dose & Duration
Sanshamana Aushadhi	<i>Krimikuthara Rasa (125mg)</i>	Initially for 5 days (1/2-tab BD)
	<i>Avipattikar churna (5 gm)</i>	1 tsp with lukewarm water post meal twice a day for 7 days initially then followed by 1 tsp at night (HS) for 2 months
	<i>Arogyavardhini Vati</i>	1 tab post meal twice a day for 2 months
	<i>Syp. Khadirarishta</i>	1 tsp (5 ml) post meal twice a day for 2 months
	<i>Panchatikta Ghrita</i>	1 tsp (5 ml) empty stomach twice a day for 2 months
Shodhana Chikitsa	<i>Jalaukavcharana</i>	5 sessions (3 sessions- interval of 7 days 2 sessions- interval of 15 days each)
	<i>Sthanik Abhyanga</i>	<i>Sarjarasa Malhar</i> - local application for 2 months

Table 4: Showing treatment protocol and Observation assessed by gradation of m-PPASI Score, ESIF Score, DLQ Index and VAS Score with timeline: -

DAY	TREATMENT PROTOCOL	OBSERVATION	ESIF Score	m-PPASI	DLQI
Day 0	a. <i>Sanshaman Aushadhi</i> was started for 7 days initially b. <i>Sthanik Abhyanga</i> for local application thrice a day was started	Marked plaque, elevation, scaling, and erythema, with deep fissures, were present on the palms and soles indicating severe PGA and VAS.	43	57.6	25
Day 3	a. <i>Raktamokshan by Jalauka</i> - 1 st sitting was done b. <i>Sthanik Abhyanga</i> was continued c. <i>Sanshaman Aushadhi</i> was continued	Initially shy and reluctant, the patient agreed to the treatment after an explanation and cooperated well.			
Day 10	d. <i>Raktamokshan by Jalauka</i> - 2 nd sitting was done e. <i>Sthanik Abhyanga</i> was continued <i>Sanshaman Aushadhi</i> was continued				

Day 17	a. Raktamokshan by Jalauka- 3 rd sitting was done b. Sthanik Abhyanga was continued c. Sanshaman was continued				
Day 25	Follow-up was taken to note the progress of treatment	Reduction in plaque, elevation, and scaling was noted, with no erythema but remaining induration and fissures and moderate to severe PGA and VAS.	35	45.1	15
Day 31	a. Raktamokshan by Jalauka- 4 th sitting was done b. Sthanik Abhyanga was continued c. Sanshaman was continued				
Day 40	Follow-up was taken to note the progress of treatment	The patient was happy and satisfied with the treatment and became more cheerful for visits to the hospital.			
Day 45	a. Raktamokshan by Jalauka- 5 th sitting was done b. Sthanik Abhyanga was continued c. Sanshaman was continued				
Day 50	a) Sthanik Abhyanga was continued b) Sanshaman was continued c) Follow-up was taken to note the progress of treatment.	Significant improvement was noted with reduced plaque, scaling, and erythema, and healing of fissures with mild to moderate PGA and VAS.	32	37.2	8
Day 60	a) Sthanik Abhyanga was continued b) Sanshaman was continued c) Follow-up was taken to note the progress of treatment.	The patient showed remarkable recovery with improved symptoms and mild PGA and VAS scores. The patient was happy and cheerful.	15	21.4	5

Jalaukavacharana Karma (Leech therapy): - (9)

Jalaukavacharana Karma (Leech therapy) involves placing leeches on the bilateral palms and soles to draw out impure blood. The process consists of three key steps:

- 1. Pre-operative Preparation:** Gathering leeches and preparing the patient.
- 2. Operative Procedure: Leech Application:** Wearing gloves, the practitioner holds the leech with a damp cloth or gauze, covering its mouth. The mouth is exposed to the target site to allow attachment, indicated by the leech's mouth suction and central area rising into a horseshoe shape. A damp gauze maintains a cool environment around the leech during the procedure.
- 3. Post-operative Care:** The patient is monitored for any pricking pain, signaling the leech has begun drawing pure blood. Safely removing the leeches and applying herbal powders, such as turmeric, for wound care and healing.

The figures 1-4 exemplify the improvement in ESIF Score of 15, m-PPASI score of 21.4, DLQ Index of 5, and PGA and VAS on the milder side. The patient was happy and cheerful scores over 1 month of treatment with *Raktamokshana* by *Jalaukavcharana* in a patient followed by *Sanshaman Aushadhis* with scaly, erythematous skin lesions and fissures over bilateral palms and soles.

Results

The patient diagnosed with Vipadika (Palmoplantar Psoriasis) on both palms and soles had baseline scores of 43 (ESIF), 57.6 (m-PPASI), and 25 (DLQI), indicating severe symptoms. After two months of

treatment, these improved to 15 (ESIF), 21.4 (m-PPASI), and 5 (DLQI), reflecting milder symptoms.

The ESIF score improved from 89.59% to 31.25%, while the m-PPASI decreased from 80% to 29.73%. Significant reductions in scaly plaque, elevation, and scaling occurred within two weeks, with no erythema or new lesions. Skin lesion size decreased, and tissue recovery was observed. Initially apprehensive about leeches, the patient became excited about the treatment and expressed greater happiness. There were no complications or scarring, resulting in an overall cheerful demeanor.

Discussion

The dermatological condition known as *Vipadika*, as described in Ayurvedic literature, is characterized by *Teevravedana* (severe pain) and *Panipadasphutana* (cracking of palms and soles) in correlation with *Kshudra Kushta*. (10) Additional symptoms, including red patches over the palm and sole, have been documented by renowned Acharyas such as Acharya Vagbhata. According to classical texts like Charaka Samhita, the imbalance of *Vata* and *Kapha Doshas* primarily underlies the manifestation of symptoms such as *Panipadasphutana* and *Teevra Vedana*. (11) *Pittaja* and *Raktaja Dushti* are the reasons for all skin problems. *Pitta* can cause the blood (*Rakta dhatu*) to overheat and make people more susceptible to toxic situations that manifest as skin diseases. Therefore, the first line of treatment should be to eliminate *Dusht Pitta* and *Rakta Dhatu's Shuddhi* from the body. Hence, *Raktamokshana* by *Jalaukavcharana* (Leech therapy) was chosen as the main Para surgical treatment approach in this patient. This understanding of *Vipadika's* etiology and symptomatology draws

Figure 1 pre-operative image of patient showing the extent of marked scaly plaque, elevation, scaling, and erythema (discoloration) along with definitive induration and numerous deep fissures over bilateral palms and soles (Day 0) 1-A Left sole showing severe skin fissures, 1- B Right sole showing fissures with indurations, 1- C Bilateral palms showing induration with fissures, 1- D heels of foot showing cracks

D



Figure 2 post-operative image of patient showing a reduction in symptoms over bilateral palms and soles (Day 25) 2-A Right sole with improvement in skin lesions, 2-B Bilateral palms fissures showing healing signs 2-C Right foot Heels with improvement in skin lesions 2- D Left sole showing healing of skin lesions



Figure 3 post operative image of patient showing a reduction in symptoms over bilateral palms and soles (Day 50) 3-A Right sole with improvement in skin lesions, 3-B Left sole with improvement in skin lesions 3-C Right palms with improvement and mild skin lesions, 3-D Bilateral palms fissures showing healing signs



Figure 4 post operative image of patient showing a reduction in symptoms over bilateral palms and soles (Day 60) 4-A Left sole with improvement in skin lesions, 4-B Right sole with improvement in skin lesions 4-C, D Bilateral palms with improvement in skin lesions



parallels with palmoplantar psoriasis, a chronic inflammatory disorder recognized in modern medicine. (12) Palmoplantar psoriasis presents with scaly, erythematous, pruritic lesions on the palms and soles, often accompanied by fissuring and bleeding. (13) Despite advancements in contemporary medical interventions, the management of palmoplantar psoriasis remains challenging, with conventional treatments posing risks of recurrence and limited efficacy. In this context, exploring traditional Ayurvedic approaches may offer novel insights and therapeutic avenues. (14) *Acharya Vagbhat* adds the presence of red spots across the palm and sole in the description of *Vipadika*. (15)

In this case, the bilateral palms and soles were the site of vitiated *Rakta* (blood), thus *Raktamokshana* was performed as *Shodhana Karma (Detoxification)*, specifically *Jalaukavcharana* (blood-letting, mainly using *Nirvisha Jalauka*), in order to eliminate *Dushit Rakta* (impure blood). (16) The *Ushna* and *Tikshna Guna* of vitiated *Rakta* are calmed by the leeches with sheet *Virya* (potency). (17) In addition, leeches' saliva contains a range of bioactive compounds, such as analgesics, vasodilators, and anesthetics, that support the equilibrium of these vitiated doshas. (18) Through the removal of the vitiated blood from the *Srotas*, *Jalaukavcharana* facilitates the *Sampraptivighatana (breaking the etiopathogenesis)* of the *Vipadika*. (19) The topical medication calmed the doshas when it was applied locally in *Vipadika*. The *snehana* characteristic of *Sarjarasa Malhar* did the *Vata shamana* and balanced the *Pitta* and *Kapha*. Because of *Taila's* qualities, it was able to break down the *Sanga* of *Doshas* by penetrating deeper *Srotas*. *Shaithilya* was eliminated, and the *Sandhanakara* and *Ropana* properties assisted in repairing the damaged skin's tissue, curing *Sphutana*. In the meantime, with its *Snehana*, *Rasayana*, and *Balya* qualities, it gave *Twacha* (skin) the nourishment it required to heal and maintain its natural integrity. An earlier study on *Sarjarasa Malhar* provides sufficient evidence of its utility in *Vipadika* (Palmoplantar Psoriasis). (20)

Krimikuthara Rasa was given for *Krimihara* property to provide an antimicrobial cover to the patient by deworming him before administering *Deepan* and *Pachana Aushadhi*. *Arogyavardhini Vati* balances all three doshas. It is used as a natural detoxifier for liver pathologies, helping to maintain normal liver function and the digestive system. It also helps with *Shoshan* (assimilation), *Pachan* (digestion), and *Raktashodhak* (blood purification) processes. (21) *Khadirarishta* is indicated for the treatment of various skin diseases, including psoriasis (also known as *Sarva Kushtha*). Its main ingredient, *Khadir* (*Acacia catechu*), has immunomodulatory, anti-inflammatory, and antioxidant properties that are critical in treating autoimmune and chronic skin conditions. The patient had good results from *Arishta* due to its *Agnideepaka* and *Srothoshodaka* properties. (22, 23) Regular use of this tonic purifies blood, lowers the creation of toxins, controls the production of sebum in the skin, and prevents the growth of bacteria. (24) *Avipattikar Churna* contains

carminative, stimulant, antioxidant, and anti-inflammatory properties in addition to its roles as an antacid, appetizer, and digestive. (25)

In earlier case studies, particularly involving children, positive outcomes were obtained by combining *raktamokshan* and shaman with other *shodhan* techniques. (26) In this case study, however, the patient's only means of alleviation were *Jalaukavcharana* and a few *Shamana Aushadhis*.

Conclusion

Nidanaparivarjana was vital for healing and preventing recurrence, leading to significant symptom relief without any adverse effects. The take-home message is that *Nidanaparivarjana* (elimination of the causative factors) is crucial for healing and preventing recurrence of conditions and *Jalaukavcharana* (Leech therapy) provides better results in the treatment of *Vipadika* (Palmoplantar Psoriasis) further leading to substantial symptom relief without causing adverse effects. A larger clinical study is needed to validate the effectiveness of this therapy

The perspective of the patient:

The patient: "When I came to this facility, I was having tremendous pain in walking with many skin lesions over my hands and feet and it was very difficult for me to go to play. The outcomes of the Leech treatment were clear. I started playing games, I am not shy anymore since starting medication."

A statement of the patient's consent

A declaration of patient consent is a statement of the consent of the patient. The patient provided approval for the case, photos, and other clinical data to be published in the journal, and the authors acknowledge having received this form from them. The patient is aware that although every attempt will be made to hide his identity, anonymity cannot be guaranteed even though every effort will be taken to conceal his identity and that neither his name nor his initials will be disclosed.

References

1. Sarma N. Evidence and suggested therapeutic approach in psoriasis of difficult-to-treat areas: Palmoplantar psoriasis, nail psoriasis, scalp psoriasis, and Intertriginous psoriasis. *Indian J. Dermatol.* 2017;62:113–122. doi: 10.4103/ijd.IJD_539_16. [PMC free article] [PubMed] [CrossRef] [Google Scholar] [Ref list]
2. Nagendran A, Hanumanthu V, Dogra S, Narang T, Pinnaka LVM. Validation and usability of modified palmoplantar psoriasis area and severity index in patients with palmoplantar psoriasis: A prospective longitudinal cohort study. *Indian J Dermatol Venereol Leprol.* 2024;90:275-82. doi: 10.25259/IJDVL_712_2022
3. Jeremy Albelda. Dermatology Life Quality Index - Dermatology UK [Internet]. Dermatology UK. 2024. Available from: <https://dermatology.org.uk/>

3. <https://doi.org/10.2340/00015555-1237>
4. Flytström I, Stenberg B, Svensson Å, Bergbrant IM. Patients' Visual Analogue Scale: a useful method for assessing psoriasis severity. *Acta Dermatovenereologica* [Internet]. 2012 Jan 1;92(4):347–8. Available from: <https://doi.org/10.2340/00015555-1237>
5. Pascoe VL, Enamandram M, Corey KC, et al. Using the Physician Global Assessment in a Clinical Setting to Measure and Track Patient Outcomes. *JAMA Dermatol*. 2015;151(4):375–381. doi:10.1001/jamadermatol.2014.3513
6. Leung AK, Barankin B, Hon KL. Dyshidrotic eczema. *Enliven: Pediatr Neonatol Biol*, 2014; 1: 2.
7. Coenraads PJ, Diepgen TL. Risk for hand eczema in employees with past or present atopic dermatitis. *Int Arch Occup Environ Health*, 1998; 71: 7-13.
8. Bhattarai S, Agrawal S, Rijal A. Clinical and contact allergological observations on hand eczema: A descriptive study. *Nepal Med Coll J*, 2013; 15: 189-92.
9. Kaviraj Ambikadattashastri, Sushruta Samhita, Chaukhambha Sanskrit sansthan, Varanasi, 2018, Sutrasthan adhyaya 13, Shloka no: 17-20, Page no: 59.
10. Pankaja P. Savanur. Management of Vipadika (Palmoplantar Psoriasis) with Ayurveda - A Case Study. *J Ayurveda Integr Med Sci* [Internet]. 2019 June.30 [cited 2023 Oct.25];4(03):145 -147. Available from: <https://jaims.in/jaims/article/view/636>
11. Brahmanand Tripathi, Charakasamhita, volume 2, Chaukhamba Surbharti Prakashan, Varanasi, reprint 2005, chikitsasthana, chapter7, verse 13 page 302
12. Pratibha, ; Rath, Sudipta Kumar; Surolia, Manaswi Mukesh. Ayurvedic management of Vipadika (~palmoplantar psoriasis): A case report. *Journal of Ayurveda Case Reports* 6(3):p 131-136, Jul–Sep 2023. | DOI: 10.4103/jacr.jacr_86_22
13. Yu X., Wei G., Shao C., Zhu M., Sun S., Zhang X. Analysis of dermoscopic characteristic for the differential diagnosis of palmoplantar psoriasis and palmoplantar eczema. *Medicine*. 2021;100:e23828. doi: 10.1097/MD.00000000000023828. [PMC free article] [PubMed] [CrossRef] [Google Scholar]
14. Nille, Guruprasad C.; Chaudhary, Anand Kumar; Gupta, Laxmi Narayan. Effect of an Ayurveda treatment in palmoplantar psoriasis: A case study. *Journal of Ayurveda Case Reports* 3(2):p 51-56, Apr–Jun 2020. | DOI: 10.4103/JACR.JACR_24_20.
15. Vagbhata, Astanga Hrydayam, by Brahmananda Tripathi, Nidana Sthan Chapter 14, Verse 44-41. Chowkamba Sanskrit Prakashana, Varanasi, 2009 p. 530
16. Sushruta. Sushruta Samhita. Sutrasthana. Reprint ed. Varanasi: Chaukhambha Orientalia; 2012. p.78-85.
17. Ibidem Susruta Samhita. Sutra Sthana Shonitavarnaniya Adhyaya. 14:24
18. Richa Bhardwaj, Ankur Kumar Tanwar, H.C. Gupta. A Conceptual Review of Jalaukavacharana. *International Journal of Ayurveda and Pharma Research*. 2019;7(1):54-59.
19. Andreas Michalsen, Manfred Roth, Gustav Dobos; Medicinal Leech Therapy, New York 2007; 132-138.
20. Bhokare, S. S., & Jadhav, S. S. (2023). THE EFFECT OF SARJARAS MALAHARA IN VIPADIKA: A PILOT STUDY. *Journal of Emerging Technologies and Innovative Research (JETIR)*, 10(10), 9. <https://doi.org/JETIR2310305>
21. Mahajon, Bidhan & Pal, Santosh & Aku, Ramamurthy. (2016). Arogyavardhini Vati: A theoretical analysis. *Journal of Scientific and Innovative Research*. 5. 10.31254/jsir.2016.5605.
22. Nille, Guruprasad C.; Chaudhary, Anand Kumar; Gupta, Laxmi Narayan. Effect of an Ayurveda treatment in palmoplantar psoriasis: A case study. *Journal of Ayurveda Case Reports* 3(2):p 51-56, Apr–Jun 2020. | DOI: 10.4103/JACR.JACR_24_20.
23. Rathi, Bharat & Khobragade, Pramod & Rathi, Renu & Gupta, Rajkumar. (2021). Ethno-botanical Survey on Medicinal plants used by Tribes of Karanja (Ghadge) Tahsil of Wardha District, Maharashtra, India. *International Journal of Ayurvedic Medicine*. 12. 43-52. 10.47552/ijam.v12i1.1764.
24. Sahasrayogam with English translation by Dr.K Nishteswar and Dr.R . Vidyanath, Published by Chaukhamba publishers,Gutika Prakarana, page 323.
25. Das Govind. Ambikadattashastri Bhaishajyaratnavali vidyotani tika chapter 56 verse 25-29. Varanasi: Chaukhambha Prakashana; 2019. p. 922.
26. Bhatted, Santosh kumar & Shende, Arun & Singh, Hemendra & Kumar, Anil. (2023). "Ayurveda management of Palmoplantar Psoriasis (Vipadika) -a case report". *Journal of Ayurveda and integrative medicine*. 14. 1-5. 10.1016/j.jaim.2023.100704.

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