

## AN AYURVEDIC MANAGEMENT OF PALMO-PLANTAR PSORIASIS BY BAKULA PATRA- A CASE STUDY

<sup>1</sup>Bhavana H N, <sup>2</sup>Giriprashanth K G, <sup>3</sup>Bhavana S Gaitonde

<sup>1</sup>Final year Post Graduate Scholar, Department of Dravyaguna, SSCASR, Bengaluru.

<sup>2</sup>Professor, Department of Dravyaguna, SSCASR, Bengaluru.

<sup>3</sup>Final year Post Graduate Scholar, Department of Dravyaguna, SSCASR, Bengaluru

Corresponding Author: [bhavanaudupa948@gmail.com](mailto:bhavanaudupa948@gmail.com)

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### ABSTRACT

#### Background

Skin diseases are a group of diseases that a larger population of the world is suffering from. Care for the skin is emphasised, as it is the largest organ of our body. In Ayurveda, all skin diseases are dealt with under *Kushta*. *Vipadika Kushta* is one of the *Kshudrakusta*, which occurs due to *Tridosha Prakopa*. This causes *Teevra Vedana*, *Pani Pada Sputana*. In the modern system of medicine, *Vipadika Kusta* can be correlated to Palmo-plantar psoriasis. The national prevalence of Palmoplantar psoriasis is estimated to be 0.12%. The symptoms include elevated and thickened skin surface, scaling, itching, burning sensation, cracks and bleeding. **Aim-** To evaluate *Bakula Patra Kashaya's* efficacy in managing Palmoplantar psoriasis. **Methodology-** In the present case, a female patient aged 74 years complained of itching, burning sensation, cracks, and scaling over bilateral soles and palms for three months. It was initially treated with *Bakula Patra Kashaya* for fifteen days, and *Shodhana* was given, which included *Snehapana* with *Panchatiktaka Guggulu Grita* for three days, *Vishramakala* where *Sarvanga Abhyanga* with *Yastimadhu Taila* for three days in the absence of *Swedana* and on 7<sup>th</sup> day *Virechana* with 25gm *Trivrut Lehya* followed by 60ml *Draksha Rasa* was given. Results—*Vipadika Kusta* was assessed using subjective and objective criteria based on Lakshanas, and the score was noted before and after the treatment. The symptoms were significantly improved after the consumption of *Bakula Patra Kashaya*. **Conclusion-** *Mimosops elengi* Linn, belonging to the Sapotaceae family, is indicated in *Twak Vikaras*. The leaves contain active principles like Quercetin,

Hentriacontane, and steroidal saponin, which have wound-healing properties and might have helped heal cracks. Quercetin has anti-histaminic activity, which might have reduced itching.

**Key words:** *Vipadika Kusta*, Palmoplantar psoriasis, *Bakula Patra*, *Shodhana*, *Shamana*.

## INTRODUCTION

Ayurveda is a globally accepted and generous system of medicine. It mainly aims at preserving an individual's health and curing one self's ailments. Skin, the body's largest organ, needs utmost care to protect it by being defaced from external habitat and exposure to chemical and biological substances. Skin ailments cause unacceptable changes both physically and mentally. Skin diseases contribute to 1.79% of the global burden of disease worldwide.<sup>1</sup> Among them, psoriasis is a skin condition that needs immense attention. Psoriasis is a skin issue that causes rashes with itchy, scaly patches, most commonly on the knees, elbows, trunk and scalp, soles and palms.<sup>2</sup> There are various types of psoriasis, including palmoplantar psoriasis, which occurs over palms and soles. It is a subtype of plaque psoriasis. Though it can occur at any age, it is usually noticed between the age group of 20- 60 years, regardless of sex.<sup>3</sup> The main symptoms include elevated skin edges, scaling, burning sensation, cracks and bleeding.<sup>4</sup> The site of the skin lesion makes it harder to keep hygiene, potentially leading to loss of self-esteem and social anxiety.<sup>5</sup> In the allopathy system of medicine, skin diseases are generally addressed with corticosteroids. Corticosteroids are synthetically prepared hormone mediators used to tackle skin issues like dermatoses. They can be applied externally over the skin or given orally and intravenously. The adverse effects of corticosteroids are both dose and time dependent.<sup>6</sup> Local use of corticosteroids has a hazardous effect on subcutaneous tissue; However, cutaneous adverse effects appear to be clinically significant by physicians, and they are usually of most concern to the patients. These include dermal and epidermal adverse effects. Epidermal effects include epidermal thinning, dermal effects include ecchymosis, blot haemorrhages, atrophy, acne, mild hirsutism, facial erythema, striae, impaired wound healing, thinning of hair, and perioral dermatitis, purpura, ulceration and easy bruising.<sup>7</sup>

Hence it is always finer to head towards traditional treatment approach which is devoid of any adverse effects. In ancient science, skin diseases were elaborately dealt with as a concept of *Kustarogas* and classified into 11 *Kshudrakusta* and 7 *Mahakusta*.<sup>8</sup> In Ayurveda, the literary meaning of *Kusta* is "*Kushnati Tad Vupulah*," which causes discolouration.<sup>9</sup> Among all types of *Kusta*, *Vipadika Kusta* is unique as plaques occur on the rough and rugged region of the skin, like soles and palms. *Vipadika* comes from *Vai*, meaning to become exhausted, and *Padika*, meaning noticed on pada.<sup>9</sup> *Acharya Charaka* has included *Vipadika Kusta* under *Kshudra Kushta*. *Nidana* of *Kusta Roga* include *Aharaja* and *Viharaja Hetu*. *Aharaja Hetu* like *Chilichima Matsya Ksheera Samyoga Atibhojana*, *Mulaka and Lasuna with Ksheera Bhojana*, Intake of pulses like *Mugda*, *Masha*, *Adaki*, *Kulattha*, *Nispava* and *Viharaja Hetu* like *Mitya vihara* that includes *Sheetodaka Snana* immediately after exposure to the sun, *Chardhi vegadharana* are responsible for the development of *Kusta*.<sup>10</sup> *Acharya Charaka* and *Sushruta* describes *Samanya Kushta Chikitsa* which includes *Shodhana and Shamana* line of treatment.<sup>11</sup> *Acharya Chakradatta* has mentioned *Vishesh Chikitsa* in the form of *Lepa* as *Bahya Chikitsa* for *Vipadika Kusta*.<sup>12</sup> *Bakula* (*Mimosops elengi* Linn) Sapotaceae family is indicated in *Twak Vikaras* according to *Priya nigantu*.<sup>13</sup> *Bakula* having *Kashaya Rasa*, *Laghu Ruksha Guna*, *Katu Vipaka* acts as *Pittakaphahara*.<sup>14</sup> *Bakula* (*Mimosops elengi* Linn) is a small to large, evergreen tree up to 15 m high. The bark is dark grey, with striations and few cracks on the surface. Leaves are variable, elliptic, oblong or oblanceolate, glossy, Dark green, faintly veined, leathery with wavy margins. The flowers are Solitary white; the corolla is white in colour and sweet in fragrance. Fruit is a berry with persistent calyx having five free sepals, long, oval, one-seeded, green when unripe and yellow on ripening.<sup>15</sup>

## **CASE REPORT-**

The 74-year-old female patient visited the OPD of Sri Sri College of Ayurveda Hospital, Bangalore, with complaints of pain, itching, and a burning sensation in bilateral soles for three years and blackish discoloration and itching over bilateral palms for one year. Associated complaints include peeling of the skin.

## **HISTORY OF PRESENT ILLNESS-**

The patient was healthy and normal three years ago. Two to three cracks appeared over the right sole, and there was a burning sensation. Gradually, the number of cracks increased, with the appearance of black discoloration and itching. Due to this, the patient had disturbed sleep during the night and could not walk. According to patients' experience, the condition used to aggravate during noon, winter season, when tomato and other sour substances were taken in, and it was associated with peeling when rubbed over the skin. Later, she consulted a doctor and was prescribed allopathic medications (Corticosteroids -Cosvate cream, Flutivate capsules for three months). Due to this, the symptoms used to reduce temporarily and would relapse with the severity of the condition when she withdraws the medications. After one year, she developed itching and blackish discoloration over the dorsal aspect of both palms. For the above complaints, the patient was admitted to the hospital.

**History-** Not known cases of Diabetes Mellitus, Hypertension and Thyroid disorders.

## **Family history-**

Nothing significant.

## **Vaiyakhika Vrittanta-**

- Marital status- Married.
- Bowel- Normal
- Micturition- Normal
- Appetite- Low
- Sleep- Disturbed
- Diet- Vegetarian
- Habits- Tea twice a day
- Allergy- Nil

## **Vital examination-**

BP- 130/90mmhg  
Pulse- 68bpm.  
Height- 152 cms  
Weight- 65 kgs  
BMI- Overweight (28.1)

## **Systemic examination-**

Respiratory rate- NVBS  
Cardiovascular system- S1, S2 heard.  
P/A- Soft and tender.  
CNS- Conscious and oriented

## **Ashta Sthana Pariksha-**

*Nadi-* 68bpm  
*Mutra-* Prakruta  
*Mala-* Prakruta  
*Jihwa-* Lipta  
*Shabdha-* Gambheera  
*Sparsha-* Anushna  
*Drik-* Shwetha Varna  
*Akriti-* Madhyama

## **Skin Examination-**

### **Inspection-**

- Site- Multiple cracks on the dorsal region of bilateral soles and palms
- Onset- Gradual
- Distribution- Symmetrical over Bilateral soles
- Colour- Blackish discoloration is seen over the bilateral palms.
- Lesions- Multiple

### **Palpation-**

- Rough, hard
- Tenderness and burning sensation over dorsal region of Bilateral soles.
- Skin texture- rough, cracked, fissured, with irregular margin.
- Auspitz sign- +ve

## **Previous investigations-**

- ESR- 4.71
- Hb- 12.9gm%
- Total leucocytes- 10100 cells/cu.mm

- Absolute Lymphocyte blood count- 3434/c.mm
- Absolute basophil count- 0/c.mm
- HbA1C- 6.6%
- Alkaline phosphatase- 110U/L
- BUN- 8.1mg/dl
- Uric acid- 4.8mg/dl

**Nidana panchaka**<sup>16</sup>

*Nidana-Nitya Dadhi Sevana, Diwaswapna, Ruksha Ahara sevana*

*Rupa- Paada sputana, Srava, Teevra Vedana*

**Samprapthi-**

*Nidana Sevana*



*Vata Kapha Dosha Prakopa*



*Rasa Raktha Dhatu Dushana*



*Sthana Samskraya in Pada*



*Rukshata, Sputata, Teevra Vedana of Pada.*



*Vipadika*

**Treatment protocol**

The patient was admitted and treated on an IPD basis for fifteen days. Fresh Bakula Patra was initially collected from the Herbal Garden of SSCASR, and the Taxonomist authenticated the Drug. The *Kashaya* was prepared from *Bakula Patra* in hospital, and 60ml of the prepared *Kashaya* was given. It was advised to be administered internally for seven days thrice daily before food. Later, the classical form of *Virechana* was done, where *Deepana* and *Pachana* with *Trikatu* and *Triphala Churna* 1tsp twice daily before food,

*Snehapana* with *Panchatiktaka Guggulu Grita* for First day- 30ml, Second Day-60ml, third day-90ml was given in *Aarohana Krama*. Then, *Vishramakala* included *Sarvanga Abhyanga* which was done with *Yastimadhu Taila* in the absence of *Swedana*. Finally, *Virechana* with *Trivrut Lehya* 20g with *Draksha Rasa* 60ml was given. *Samsarjana Krama* was followed for three days, followed by the continuation of *Bakula Patra Kashaya* internally for the rest of the eight days.

### ASSESSMENT CRITERIA

The patient was assessed based on subjective and objective parameters of *Vipadika Kushta*. Subjective assessment was done based on Pain, Itching, and Burning sensations [Table 1]. Objective assessment was done based on the region of cracks present [Table 2] and Numerical Rating Scale (NRS) <sup>17</sup>

### OUTCOME AND RESULTS

Before the administration of Bakula Patra Kashaya, the NRS for *Vedana* (Pain) was 2, and it was reduced to 0 after [Table 3]. After *Virechana*, Pain was reduced to 0. *Kandu* (Itching) was reduced from 3 to 0 before

and after *Bakula Patra Kashaya*, respectively, and increased to 2 after *Virechana* [Table 3]. *Daha* (Burning sensation) initially was one and later reduced to 0 [Table 3]. *Sputana* (Cracks) was reduced from 3 to 2 before and after *Bakula Patra Kashaya* Sevana and *Virechana Karma* [Table 3]. [Table 4] shows the percentage reduction of Symptoms based on subjective and objective criteria. All the symptoms were reduced when treated with *Bakula Patra Kashaya* and *Virechana Karma* except itching.

Right Sole During *Bakula Patra Kashaya* sevana and before *Shodhana*



Left Sole During *Bakula Patra Kashaya* Sevana and Before *Shodhana*.



Palms During *Bakula Patra Kashaya* Sevana and Before *Shodhana*.



Before Virechana Karma (Right Sole)    After Virechana Karma (Right Sole)



Before Virechana Karma (Left Sole)    After Virechana Karma (Left Sole)



Palms Before Virechana

Palms After Virechana



## DISCUSSION

*Bakula Vruksha* has been elaborately explained in Ayurveda treatises. *Bakula*, which has *Pittakaphahara* property, is helpful in *Vaipadika Kusta*. *Vipadika Kusta* is *Tridosha Janya Vyadhi*, where *Vata* and *Kapha Dosha* are predominantly involved.<sup>18</sup> It is most commonly seen as a skin disease in older adults. Main *Lakshanas* include *Pani Pada Sputana* (Cracking and drying of soles and palms), *Raga* (Redness), *Daha*

(Burning sensation), *Kandu* (Itching), and *Vedana* (Pain).<sup>19</sup> Hence, *Bakula*, which counteracts *Pitta*, *Kapha* and *Vata Dosha*, was selected for this case study. In this case study, a Patient aged 76 years old presented with the above *Lakshanas*. *Aharaja* and *Viharaja Nidanans* like *Atibhojana*, *Nitya Dadhi Sevana*, *Diwaswapna*, and habitual intake of Tea might have been the root cause for developing Palmo-Plantar psoriasis.

*Bakula Patra Kashaya* 60ml was initially given internally for the first seven days. As *Doshas* were in *Pravruddhavastha*, the classical form of *Virechana* was given. The patient had *Pitta Prakopa Lakshanas* (*Daha*), so *Swedana* was avoided during *Vishramakala*. *Samsarjana Krama* followed by *Bakula Patra Kashaya* internally for the rest of the days was followed. *Bakula Patra Kashaya* played a miraculous role in alleviating the *Lakshanas* like *Daha*, *Kandu*, *Vedana*, *Sputana*. The maximum outcome was seen when *Bakula Patra Kashaya* was used internally only. *Rasapanchaka* of *Bakula* includes *Katu*, *Kashaya Rasa*, *Laghu*, *Ruksha Guna*, *Shita Virya*, and *Katu Vipaka*. The probable mode of action of *Bakula-Kashaya Rasa and Laghu Guna* is the *Shoshana* of *Kapha Dosha*, thereby aiding in reducing *Kandu*. *Shita Virya's* acting on *Pitta Dosha* reduces *Lakshanas* like *Daha* and *Raga*. *Katu Rasa* does *Margavishodhana*, thereby clearing the *Sanga* of *Raktavaha Sroto Dusti*. *Mimosops elengi* Linn. Leaves contain active principles like Quercetin, Hentriacontane and a steroidal saponin called 5- alpha stigmas -9(11) en-3-o beta-D-glucopyranosyl, which has Wound healing properties, might have helped in healing cracks. Quercetin has anti-histaminic activity, which might have reduced itching.<sup>20</sup> The patient stayed in the hospital for three weeks. Her status at the time of discharge was improved.

## CONCLUSION

*Bakula Patra* played an important role in subsiding the symptoms of *Vipadika Kusta*, such as *Daha*, *Vedana*, and *Kandu*. Maximum relief was seen when *Bakula Patra*, as *Ekamoolika Prayoga*, was administered in *Kashaya*.

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**Tables:**

**Table 1: Subjective criteria**

Vedana (Pain)	Grade	Symptoms
	0	No pain
	1	Pain after pressing
	2	Pain by touching
	3	Pain without touching

Kandu (Itching)	Grade	Symptoms
	0	No itching
	1	1 to 2 times a day
	2	Frequently itching
	3	Itching disturbs sleep

Daha (Burning sensation)	Grade	Symptoms
	0	No burning sensation
	1	Burning during itching
	2	Continuous burning

**Table 2: Objective criteria-**

Objective criteria were assessed based on cracks.

Sputana (Cracks)	Grade	Symptoms
	0	No cracks
	1	Cracks on heels only
	2	Cracks on heels and plantar aspects of toes
	3	Cracks on complete foot



Table 3: Subjective and objective scores before and after the treatment

Assessment criteria	Before Treatment	After <i>Bakula Patra Kashaya Sevana</i>	After <i>Virechana Karma</i>
<i>Vedana</i> (Pain)	2	0	0
<i>Kandu</i> (Itching)	3	0	2
<i>Daha</i> (Burning)	1	0	0

Table 4: Percentage scores of Symptoms of Palmo-Plantar Psoriasis Before and After treatment

Complaints	Before Treatment	After intake of <i>Bakula Patra Kashaya</i> for 15 days	After <i>Virechana Karma</i>
Burning sensation over affected region	Severe	Completely reduced	Completely reduced
Cracks	Severe	50 % reduced	50 % reduced
Itching	Severe	Completely reduced	30% Itching present
Scaly lesions	Moderate	Disappeared upto 60%	Disappeared upto 60%
Roughness and Dryness	Severe	Reduced upto 50%	Reduced upto 40%
Pain	Moderate	Completely reduced	Completely reduced