

## Ayurvedic Pathophysiology of *Kushta*: A Critical Review with Contemporary Dermatological Correlates



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### Abstract

The Ayurvedic conceptualization of dermatological disorders, categorized under the comprehensive umbrella of *Kushta*, represents a sophisticated understanding of chronic inflammatory conditions of the integumentary system. This research paper provides a critical review of the pathophysiology (*Samprapti*) of *Kushta* as detailed in the classical *Brihatrayi* texts—*Charaka Samhita*, *Sushruta Samhita*, and *Ashtanga Hridaya*. The focus is directed toward the *Saptako Dravya Sangraha*, a unique pathogenic nexus comprising three vitiated *Doshas* (*Vata*, *Pitta*, *Kapha*) and four *Dushyas* (*Twak*, *Rakta*, *Mamsa*, *Ambu*). This review synthesizes ancient wisdom with contemporary dermatological correlates, exploring the roles of pro-inflammatory cytokines (*IL-17*, *TNF-α*), epidermal barrier dysfunction, and the skin microbiome. By mapping the eighteen types of *Kushta*—comprising seven *Mahakushta* and eleven *Kshudrakushta*—to modern disease entities such as psoriasis, leprosy, and atopic dermatitis, this paper offers an integrative framework for understanding the systemic nature of skin diseases. The study emphasizes the critical role of *Kleda* (pathological moisture) and its management through *Shodhana* (purificatory) and *Shamana* (palliative) therapies.

**Keywords:** *Kushta*, *Saptako Dravya Sangraha*, *Twak Vighyan*, *Kleda*, *Samprapti*, Psoriasis, Cytokines, *Charaka Samhita*.

### 1. Introduction

The skin (*Twak*) is not merely the body's largest organ; it is a vital sensory and metabolic interface that reflects the internal physiological environment. In the specialized branch of *Ayurveda* known as *Twak Vighyan* (Dermatology), skin diseases are predominantly classified under the term *Kushta*. Derived from the root word *Kushnati*, which signifies that which disfigures or destroys the body's luster and integrity, *Kushta* encompasses a wide spectrum of pathologies ranging from mild discolorations to severe necrotic conditions. Ancient *Ayurvedic* scholars like *Acharya Charaka* classified *Kushta* as one of the *Ashta Mahagada* (Eight Major Diseases), highlighting its chronic nature, difficult prognosis, and deep-seated systemic involvement.<sup>1</sup> The relevance of studying *Kushta* in the modern era is underscored by the rising global burden of skin disorders, which account for approximately 1.79% of the total global burden of disease. While modern dermatology has made significant strides in symptom management, chronic conditions like psoriasis and eczema often require lifelong therapy with systemic immunosuppressants that carry substantial side effects. *Ayurveda* offers an alternative systemic perspective, positing that skin

diseases are manifestations of deep-rooted metabolic errors (*Agnimandya*), accumulation of latent toxins (*Dushivisha*), and the vitiation of essential bodily humors (*Doshas*) and tissues (*Dhatus*). This review aims to bridge the gap between classical *Ayurvedic* pathophysiology and contemporary molecular dermatology to facilitate a more nuanced clinical approach.<sup>ii</sup>

### 2.2. Literary Review:

#### 2.2.1. Ayurvedic Review:-

The understanding of *Kushta* has evolved through the ages, starting from the *Vedic* descriptions of *Kilasa* to the highly structured classifications found in the *Samhita* period. The primary literature for this review involves the *Brihatrayi*, the three foundational pillars of *Ayurveda*.

- **Charaka Samhita**-In the *Nidana Sthana* (Chapter 5) and *Chikitsa Sthana* (Chapter 7), *Acharya Charaka* provides an exhaustive detail of *Kushta*. He emphasizes the *Saptako Dravya Sangraha*—the seven factors essential for the genesis of the disease. *Charaka* posits that although there are eighteen major types, the permutations and combinations of *Doshas* can lead to innumerable varieties.

- **Sushruta Samhita-Acharya Sushruta**, in the *Nidana Sthana* (Chapter 5), offers a unique anatomical perspective by correlating skin diseases with the seven layers of the skin (*Twak*). He also introduces the concept of *Beejadushti* (hereditary defects) and classifies *Kushta* as an *Aupasargika Roga* (communicable/contagious disease), providing early insights into infectious dermatology.
- **Ashtanga Hridaya-Acharya Vagbhata**, in the *Nidana Sthana* (Chapter 14) and *Chikitsa Sthana* (Chapter 19), synthesizes the views of both *Charaka* and *Sushruta*. He provides concise diagnostic criteria and emphasizes the progressive nature of the disease, stating that as time passes, the vitiated fluids (*Kleda*) infiltrate deeper *Dhatus*.<sup>iii</sup>

| Dietary Factor                                    | Physiological Mechanism  | Pathological Outcome                                   |
|---|--|--|
| <i>Viruddha Ahara</i> (Incompatible Combinations) | Antagonistic potency causes systemic toxins ( <i>Amavisha</i> ). | Vitiation of <i>Rakta</i> and <i>Mamsa</i> tissues.    |
| Excessive <i>Guru</i> and <i>Snigdha</i> food     | Impairs <i>Agni</i> (digestive fire) and creates <i>Kleda</i> .  | Obstruction of <i>Srotas</i> (channels).               |
| New Grains ( <i>Nava Anna</i> )                   | High <i>Abhishyandi</i> property (blocking nature).              | Increases interstitial fluids and edema.               |
| Excess Salt and Sour ( <i>Atilavana/Amla</i> )    | Increases <i>Pitta</i> and liquefies <i>Kapha</i> .              | Promotes inflammation and suppuration ( <i>Paka</i> ). |

- **Viharaja Nidana (Lifestyle Factors)**  
Lifestyle errors lead to a sudden disruption of thermal and physiological homeostasis. *Acharya Charaka* mentions that entering cold water immediately after exposure to heat, or exercising after a heavy meal, causes the *Doshas* to deviate from their normal channels (*Koshtha*) to the peripheral tissues (*Shakha*).

- **Karmaja and Adibalpravritta Nidana**  
*Kushta* is also recognized as a *Karmaja Vyadhi* (disease resulting from past actions or unethical conduct) and an *Adibalpravritta* (hereditary) condition. *Sushruta* explicitly states that *Beejadushti* (defects in germ cells) can cause *Kushta* in the offspring, which aligns with modern genetic predispositions for psoriasis and atopic dermatitis.

### 2.2.3. Ayurvedic Pathophysiology (Samprapti): The Mechanism of Manifestation

The development of *Kushta* follows a specific sequence of *Dosha-Dushya Sammurchana* (interaction between humors and tissues).

- **Saptako Dravya Sangraha: The Pathogenic Seven**

*Acharya Charaka* said the core of *Kushta* pathophysiology:

*vātādayastrayo duṣṭāstvanraktaṃ māṃsamambu ca*  
/

### Anatomical Progression via Twak Layers

*Acharya Sushruta's* classification provides a roadmap for disease severity based on tissue depth:

### 2.2.2 Etiology (Nidana): The Multi-Dimensional Triggers<sup>iv</sup>

The pathogenesis of *Kushta* is not triggered by a single cause but by a complex interplay of dietary, lifestyle, psychological, and hereditary factors.

- **Aharaja Nidana (Dietary Factors)**

*Ayurveda* places paramount importance on *Viruddha Ahara* (incompatible foods). Consuming milk with fish, or sour substances with milk, is considered a potent cause of *Rakta Pradosha* (blood vitiation).

*duṣayanti sa kuṣṭhānām saptako dravyasraṅgrahaḥ*  
/ (Charaka Chikitsa 7/9)

Means the three vitiated *Doshas* (*Vata*, *Pitta*, *Kapha*) along with the four *Dushyas* (Skin, Blood, Muscle tissue, and Lymph/Body fluids) collectively constitute the seven-fold pathogenic factors for *Kushta*.

- **The Role of Kleda (Pathological Moisture)**

*Kleda* is perhaps the most significant pathological element in chronic skin diseases. It refers to the excessive moisture or waste fluid that disrupts the stability of the *Dhatus*.

- **Mechanism:** Vitiating *Kapha* and *Pitta* increase the *Drava* (liquid) quality in the body. This excess moisture (*Kleda*) softens the tissues, making them susceptible to decay and infection.

- **Srotorodha:** *Kleda* causes the coating and blocking of *Srotas* (micro-channels), preventing the nourishment of the skin and leading to the accumulation of metabolic wastes.

- **Modern Correlate:** *Kleda* correlates with the inflammatory exudate and interstitial edema seen in acute eczema or bullous disorders. The increase in pro-inflammatory cytokines like *IL-6* promotes vascular permeability, leading to the clinical presentation of *Sraava* (oozing).

| Layer Number | Sanskrit Name     | Pathological Involvement            | Modern Dermatological Correlate    |
|--------------|-------------------|-------------------------------------|------------------------------------|
| 1            | <i>Avabhasini</i> | <i>Sidhma, Padmakantaka.</i>        | Pityriasis Versicolor / Papilloma. |
| 2            | <i>Lohita</i>     | <i>Tilakalaka, Nyaccha, Vyanga.</i> | Freckles / Moles / Naevi.          |
| 3            | <i>Shweta</i>     | <i>Charmadala, Ajagallika.</i>      | Atopic Dermatitis / Molluscum.     |
| 4            | <i>Tamra</i>      | <i>Kilasa, Dadru.</i>               | Leucoderma / Tinea.                |
| 5            | <i>Vedini</i>     | <i>Kushta (General), Visarpa.</i>   | Leprosy / Erysipelas.              |
| 6            | <i>Rohini</i>     | <i>Granthi, Arbuda, Shleepada.</i>  | Cysts / Neoplasms / Elephantiasis. |
| 7            | <i>Mamsadhara</i> | <i>Bhagadara, Vidradhi.</i>         | Fistula / Abscess.                 |

This depth-based understanding suggests that as the *vitiatio*n moves from the *Avabhasini* to the *Mamsadhara* layer, the prognosis shifts from *Sadhya* (curable) to *Krichra-sadhya* (difficult to cure) and eventually *Asadhya* (incurable).

**3. Modern Science Review:-**

**• Contemporary Dermatological Explanations and Correlates**

Modern science views chronic skin diseases as a result of a complex interplay between genetics, immune dysregulation, and environmental triggers. This closely mirrors the *Ayurvedic* concept of *Trividha Hetu* (three-fold causes).

**• Cytokine-Mediated Inflammation<sup>vi</sup>**

A major breakthrough in contemporary dermatology is the identification of the *IL-23/IL-17* axis in psoriasis.

**• TNF-α:** Elevated levels of Tumor Necrosis Factor-alpha (*TNF-α*) are found in psoriatic lesions. *TNF-α* promotes the generation of ceramides initially but, when chronically elevated, weakens the skin barrier by inhibiting *Filaggrin (FLG)* expression. In *Ayurveda*, this correlates with the "burning" and "redness" associated with *Pitta-Rakta* vitiatio

**• IL-17:** Produced by *Th17* cells, *IL-17* down-regulates *Filaggrin* and tight junction proteins (*ZO-*

*1*), leading to epidermal barrier disruption. This molecular "loosening" is the equivalent of *Ayurvedic Shaithilya* (loss of compactness) in the *Dhatus*.

**• Epidermal Barrier Dysfunction**

The skin barrier is maintained by the cornified envelope, composed of proteins like *Filaggrin* and *Loricrin*.

**• Ayurvedic Insight:** *Vata* dominance causes *Rukshata* (dryness) and *Khara* (roughness). This is clinically seen in *Kapala Kushta* and *Kitibha Kushta*.

**• Modern Correlate:** Genetic mutations in the *FLG* gene lead to increased trans-epidermal water loss (*TEWL*), characteristic of atopic dermatitis and psoriasis. The dryness mentioned in *Vataja* conditions reflects the loss of essential fats and oils from the stratum corneum.<sup>vii</sup>

**• The Microbiome and *Krimi***

*Sushruta* includes *Krimi* (micro-organisms/parasites) as a causative factor for *Kushta*. Modern dermatology now recognizes the "microbiome dysbiosis" in diseases like *Acne*, *Atopic Dermatitis*, and *Tinea*. The colonization of *Staphylococcus aureus* in eczematous lesions can be seen as the manifestation of *Vaikrita Krimi* resulting from the accumulation of *Kleda*.<sup>viii</sup>

**• Classification and Comparative Symptomatology**

*Ayurvedic* texts categorize eighteen types of *Kushta*, divided into *Mahakushta* (7) and *Kshudrakushta* (11).

**(A) Mahakushta: The Major Dermatoses**

| Type of Mahakushta | Dosha Dominance    | Characteristic Features (Lakshana)                                       | Modern Dermatological Correlate              |
|--------------------|--------------------|--|--|
| <i>Kapala</i>      | <i>Vata</i>        | Blackish-red, rough like a broken pot, dry, severe pain ( <i>Toda</i> ). | Tuberculoid Leprosy / Lichenified Psoriasis. |
| <i>Udumbara</i>    | <i>Pitta</i>       | Red, burning sensation, brown hair, resembles ripe <i>Ficus</i> fruit.   | Vasculitis / Inflammatory Leprosy.           |
| <i>Mandala</i>     | <i>Kapha</i>       | White/red circular patches, stable, unctuous, elevated.                  | Plaque Psoriasis / Granulomatous lesions.    |
| <i>Rishyajihva</i> | <i>Vata-Pitta</i>  | Rough, resembles bear's tongue, red margins, painful.                    | Erythema Multiforme / Pemphigus.             |
| <i>Pundarika</i>   | <i>Pitta-Kapha</i> | Lotus petal appearance, white center with red margins, elevated.         | Psoriasis / Serious fungal infections.       |

|                 |                   |  |  |
|-----------------|-------------------|--|--|
| <b>Sidhma</b>   | <i>Vata-Kapha</i> | Thin, coppery/white, dust-like scaling, primarily on chest.                | Pityriasis Versicolor / Guttate Psoriasis.   |
| <b>Kakanaka</b> | <i>Tridoshaja</i> | Resembles <i>Gunja</i> seeds, multi-colored, incurable ( <i>Asadhya</i> ). | Septicemic/Lepromatous Leprosy / Malignancy. |

**(B) Kshudrakushta: The Minor Dermatoses**

Despite the term "minor," many *Kshudrakushtas* are clinically significant.

- **Kitibha Kushta:** Characterized by *Shyava* (blackish-brown color), *Kina Khara Sparsha* (rough like a scar), and *Parushata* (hardness). It is highly correlated with **Psoriasis**.
- **Dadru Kushta:** Features *Kandu* (itching), *Pidaka* (eruptions), and *Udgata Mandalam* (raised circular patches). It is the classic correlate for **Tinea (Ringworm)**.
- **Vicharchika Kushta:** Notable for *Bahu Sraava* (excessive discharge), *Kandu*, and *Shyava* discoloration. It matches the profile of **Eczema/Dermatitis**.
- **Eka Kushta:** Characterized by large-scale involvement (*Mahavastu*) and fish-like scales (*Matsya Shakala*). It is another strong correlate for **Psoriasis Vulgaris**.

**❖ Integrative Management and Treatment Principles<sup>ix</sup>**

The management of *Kushta* in *Ayurveda* is founded on the principle of repeated detoxification to prevent recurrence, as the disease is known for its relapsing nature.

- **Shodhana Chikitsa (Purification Therapy)**  
*Acharya Charaka* prescribes a specific timeline for *Shodhana* based on the accumulation of *Doshas*:  
"Prakshalanartham kushtanam bahu-doshavataam punah |"  
"Vamanam pakshat-pakshat mase mase virechanam ||" (*Charaka Chikitsa* 7/58-59)

**Shodhana Protocol:-**

1. **Vamana (Emesis):** Performed every 15 days for *Kapha* dominance.
  2. **Virechana (Purgation):** Performed every month for *Pitta* dominance.
  3. **Raktamokshana (Bloodletting):** Performed every 6 months to remove deep-seated blood toxins.
- **Shamana Chikitsa (Palliative Therapy)**  
Internal medications primarily focus on *Tikta Rasa* (bitter taste) and *Raktashodhaka* (blood purifiers).
  - **Ghrita (Medicated Ghee):** Used to pacify *Vata* and *Pitta*. *Mahatiktaka Ghrita* and *Panchatikta Ghrita* are gold standards for psoriasis and chronic dermatitis.
  - **Single Herbs:** *Khadira* (*Acacia catechu*) is cited as the best *Kushtaghna* (skin-curing) drug. Other

essentials include *Nimba* (Neem), *Bakuchi* (*Psoralea corylifolia*), and *Haridra* (Turmeric).

- **Sulphur (Gandhaka):** Specifically used as *Lelitaka* for its antimicrobial and blood-purifying properties.

**4. Pathyapathya (Diet and Regimen)**

Dietary management is crucial. Patients are advised to avoid curd, milk, fish, jaggery, and black gram, as these are *Abhishyandi* and increase *Kleda*. Instead, old grains like *Shali* rice and *Mudga* (green gram) are recommended to maintain digestive health.

**5. Discussion**

The critical review of *Kushta* pathophysiology reveals an intricate link between systemic metabolic health and localized dermatological manifestations. The *Ayurvedic* model of *Saptako Dravya Sangraha* posits that no skin disease is purely local; it is always a systemic imbalance affecting the *Rakta* (blood) and *Ambu* (interstitial fluids). This aligns with modern findings that psoriasis is a systemic inflammatory disease associated with metabolic syndrome, cardiovascular risks, and psychological stress.

The concept of *Kleda* acts as a bridge between ancient and modern medicine. While *Ayurveda* identifies *Kleda* as the fluid that must be managed through *Vamana* and *Virechana*, modern immunology identifies it as the cytokine-rich inflammatory exudate that drives epidermal hyperproliferation. The "Matsya Shakala" (fish scale) appearance in *Eka Kushta* is a macroscopic observation of the microscopic protein failure in the epidermal barrier.

Furthermore, the emphasis on *Viruddha Ahara* (incompatible diet) in *Ayurveda* suggests a deep-seated understanding of how certain food combinations can act as allergens or triggers for autoimmune responses. The contemporary study of "leaky gut syndrome" and its impact on the skin barrier provides a scientific basis for the ancient dietary restrictions in *Kushta*.

**6. Conclusion**

This critical review demonstrates that the *Ayurvedic* pathophysiology of *Kushta* is an exhaustive and logically consistent framework for understanding dermatological disorders. The integration of *Brihatrayi* texts reveals a nuanced approach to etiology, pathogenesis, and classification that

correlates remarkably well with contemporary immunological and anatomical knowledge. The role of the *Saptako Dravya Sangraha* and the pathological impact of *Kleda* remain central to the diagnostic and therapeutic strategies in *Twak Vighyan*. By aligning classical descriptions with modern correlates such as cytokine profiles and barrier proteins, practitioners can develop more effective, integrative treatment protocols. The emphasis on *Shodhana* (purification) and *Nidana Parivarjana* (avoiding triggers) offers a comprehensive pathway for managing chronic, relapsing conditions like psoriasis and eczema, ensuring long-term remission and improved quality of life for the patient.

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