

## STUDY OF KANDUGHNA EFFECT OF KARANJADI LEPA IN TWAK VIKAR (SKIN DISEASES)- A REVIEW

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## ABSTRACT

Skin is the largest organ in the body. Among five sense organs (*Gyanendriya*) *Twacha* (skin) is one of them according to *Ayurveda* skin is site of *Bhrajak Pitta*. In normal state it is responsible for *Prabha, Kanti*. When it gets vitiated give rise to many *Twak Vikar*(*Kushtha*). In *Samhita Grantha* total 18 *Kushtha* (7 *Mahakushtha*, 11 *Kudrakushtha*) are described. As far as management of *Kushtha* is concern so many treatment modalities have described in *Ayurveda*, *Lepa Kalpana* is one of them. *Lepa* is topical application over the skin, it is described under *Bhahiparimarjan Chikitsa*. *Karanjadi Lepa* is mainly *Kaphavatahar* properties, its contents are *Karanja, Kustha, Chakramard* and *Gomutra*.

**Keywords:** Skin, *Twacha*, *kandu*, itching, *Lepa*, *Ayurveda*.

## INTRODUCTION

The skin is the largest organ in the body and covers the body entire external surface. It includes sweat gland, hair and nails.<sup>[1]</sup> According to ancient *Ayurved*-literature *Twacha* (skin) is place of *Bhraja Pitta* which

resides beneath the skin which is responsible for *Kanti*.<sup>[2]</sup>When it gets vitiated it leads to many *Twak-Vikar*(skin disorder). In *Samhita Grantha Acharya* have mentioned total 18 *Twak Vikar* in the name of

*Kushtha*. Among them 7 classified as *Mahakushtha* while 11 categorized under *kshudra Kushtha*.<sup>[3][4][5]</sup> *Kushtha* is mainly *Tridoshaja Vyadhi*, having dominance of *Kapha Dosha*. General clinical manifestations of *Kushtha* are *Kandu* (itching), *Ruja* (pain), *Vaivarnya* (discolouration) etc. *Acharya Chraka* mentioned *Kandu* in *Udumbara Kustha (Dosha-Pitta)*, *Dadru*, *Charmadal*, *Pama*, (*Dosha-Pittakapa*), *Vicharchika (Dosha-Kapha)*.<sup>[6]</sup> *Acharya Sushruta* mentioned *Kandu* in *Pundrika*, *Daadru*, *Raksha*, *Sidhma (Dosha-Kapha)* *Charmadal*, *Vicharchik*, *Vipadika*, *Ktibha*, *Pama*, *Kachchu*, *KaphajaKilasha*, *Twachagat* and *Rakttagat Kushtha*.<sup>[7]</sup> *Acharya Vagbhat* mentioned *Kandu* in *Mandal*, *Pundrika*, *Vicharchika*, *Kitibha*, *Alshaka*, *Vipadika*, *Dadru*, *Pama*, *Charmadal*.<sup>[8]</sup> **Kandu** (itching) is mainly due to *Kapha Dosha*.<sup>[9]</sup> Its management explained as *Sanshodhana* and *Sansaman Chikitsa* respectively *Antahparimarjan* and *Bahya Parimarjan Chikitsa* and *Nidhan Parivarjana*. The word *Twacha* is derived from “*Twak Sanwarnne*” *Dhatu* Which means the covering of the body. According to *ShabdaKalpadrum* “Which covers the body is *Twacha*”.<sup>[10]</sup> *Acharya Sushrut* has told about the 7 layer of skin which are *Avabhashini*, *Lohita*, *Sweta*, *Tamra*, *Vedini*, *Rohani*, *Mashdhara* whose thickness are 1/18, 1/16, 1/12, 1/8, 1/5, 1, 2 *Brihi* (rice) respectively. <sup>[11]</sup> Among these *Tamra* and *Vedini* are considered as site for *Kushtha*. In modern science skin covers the external surface of the body and it includes glands, hair and nails. Thickness of skin varies from place to place in the body. Two main layers of skin are Epidermis, and Dermis. Epidermis is outermost layer and 5 sub layers consists stratum corneum, stratum lucidum, stratum granulosum, stratum spinosum, stratum germinativum and surprisingly these layers does not have vasculature. Dermis is innermost layer having 2 sub layers superficial named papillary while deeper named reticular. Functions of skin are protection, sensory, storage, absorptive, synthetic, regulation of body temperature and water and Electrolytes balance and so on Absorption of water soluble substances through the skin is almost negligible but certain lipid soluble materials possess the ability to penetrate the skin. <sup>[12]</sup> *Vata*, *Pitta*,

*Kapha Doshas*, are responsible for *Kandu* in different way. When *Vata* is vitiated it cause *Rukshata* (dryness), and *Kharata* (roughness) in body, which leads to *Kandu*. *Vataj* type of *Kandu* is associated with neurology and degenerative changes. *Pitta* is explained in two type *Drava Pitta* and *Adrava Pitta*, *Drava Pitta* works like vitiated *Kapha*, increased amount of *Dravata* leads to decrease in *Ushna Guna* of *Pitta* and increase in fluidity leads to *Kandu*. When *Ushna Guna* of *Pitta* is increases, *Drava Guna* decreases which result in shrinkage of cell due to imbalance in *Pitta Guna*, which lead to decrease metabolism and cell damage. Death of cell and debris increase (excessive dryness), which leads to *Kandu*. Vitiation of *Kapha* is main cause of *Kandu* (itch). Increase in fluidity leads to *Gauravta* in body, causes *Agnimadya* at cellular level, formation of *Ama* (toxins), enters in circulation. Sticky nature of *Kapha* causes blockage in small *Strotas* (channels). Less oxygen supply and accumulation of fluid at cellular level causes edema. Atmosphere of frequent infection is created showing damp condition in that part of body which attracts bacteria, fungi and facilitates their growth. In *Ayurveda* *Kandu* is mainly considered as *Kushtha* having dominance of *Kapha Dosha* although it is *TridoshajVyadi*.<sup>[13]</sup> Some physiological condition in which itching is present i.e., in old age, in winter season which is particularly due to dryness of skin (due to decrease in *Snehansh* of body. Some foods which trigger the itching is *Vartaak* (brinjal), *Suran* (elephant foot), *Raj* (dust), some pollen grains etc. Also there are some group of medications which can provoke itching under some adverse condition these are Antibiotics i.e. erythromycin, tetracyclines, rifampicin, vancomycin Cardiovascular i.e. diltiazem, verapamil, captopril Psychotropic medicine i.e. Amitriptyline, sertaline, phenytoin Opioids i.e. Morphine, Codeine, Tramadol.

**Lepa:** In *Lepa Kalpana* wet and dried drugs are grinded to form paste and powder respectively and mixed with liquid medium such as *Gomutra*, *Dugdha*, *Ghrita*, *Jalaso* on.<sup>[14]</sup> *Acharya Sushruta* has classified *Lepa* into three types *Pralepa*, *Pradeha*, *Alepa*.<sup>[15]</sup> *Acharya Sharanghara* mentioned three types

of *Lepa Doshaghna*, *Vishagna*, *Varnya*.<sup>[16]</sup> Acharya Vagbhat described ten types of *Lepa* viz. *Snaihika*, *Nirwapan*, *Prasadana*, *Stambhana*, *Vilayana*, *Pa-chana*, *Pidan*, *Shodhan*, *Shoshana*, *Savarnikaran*.<sup>[17]</sup>

**Thickness of Lepa** Acharya Sushruta “Buffalos skin” which is considered approximately 4-5 mm.<sup>[18]</sup> *Doshaghana Lepa* ¼ *Angula* (0.48cm.) *Vishaghana* 1/3 *Angula* (0.65cm.) *Varnya Lepa* is ½ *Angula* (0.97cm).<sup>[19]</sup> **Paralepa** is *SheetaGuna*, *Tanu*, two types of this *Lepa* *Vishoshi*, *Avishoshi*. **Pradeha** is either *Sheeta* are *Ushna Guna*, thick or thin, *Avishoshi*. **Alepa** lies in between the properties of *Pralepa* and *Pradeha*.<sup>[20]</sup>

**General rules of Lepa application** <sup>[21]</sup>

*Lepa* is for instant use and single use only. *Lepa* are applied against the direction of hair follicle as it facilitates its fast and better absorption. Once *Lepa* get dry it should be removed. *Lepa* is contraindicated at night.

**Karanjadilepa**<sup>[22]</sup>

*Karanjadi Lepa* comprises of *Karanj* (*Pongamiapinnata*), *Kustha* (*Saussurealappa*), *Chakramarda* (*Cassia torra*), seeds of these drugs are grind to form the fine powder and later mixed with *Gomutra* (cow urine). Contents of *Karanjadi Lepa* are described in following table:

**Table 1**

S. N.	Drug Name	Botanical Name	Family	Rasa	Guna	Virya	Vipaka	Dosha-Karma	Activ Compound
1.	<i>Karanj</i>	<i>Pongamiapinnata</i> Linn. <sup>[23]</sup>	Leguminosae	Tikta, Katu	Laghu, Tikshna	Ushna	Katu	Kaphavat Samak, Kusthaghna, Kandughna <sup>[24,25]</sup>	Anti inflammatory (Flavones) Antimicrobial (Calcicone97, Triterpenes, Immuno-modulator) <sup>[26,27]</sup>
2.	<i>Kustha</i>	<i>Saussuralappa</i> <sup>[28]</sup>	Compositae	Tikta, Katu, Madhur	Laghu, Rauksha, Tikshna	Ushna	Katu	Kaphavat Samak, Lekhaniy <sup>[29]</sup>	Anti inflammatory (TNFInhibitors, cynaropicrin, reynosin, Anti bacterial, Immuno-modulator) <sup>[30]</sup>
3.	<i>Chakramarda</i>	<i>Cassia torra</i> <sup>[31]</sup>	Leguminosae	Katu	Laghu, Ruksha	Ushna	Katu	Kaphavat Samak, dadrughna <sup>[32]</sup>	Anti inflammatory Anti oxidant Antibacterial <sup>[33]</sup>

**Gomutra-** *Kinchita Madhur Rasa*, *Guna- Tikshna, Ruksha*, *Karma- Doshaghna, Krimikusthanut*, Antioxidant anti-microbial, wound healing property and promotes the synthesis of interleukin 1 & 2, IgA, IgG, IgM, T lymphocytes thus promotes immunity. <sup>[34]</sup>

**Mode of action of Lepa**

*Lepa* are applied against the direction of hair follicle to facilitate the absorption of drug by *Romakupa* (hair root), *Sweda Vahini Granthi* (sweat gland).<sup>[35]</sup> *Bhrajaka Pitta* metabolizes the active principles of drugs applied over the skin this action is governed by *Saman Vayu* and *Vyan Vayu*. The theory of *Srotomay Purush* indicates that whole body is porous when the drug is applied in the form of *Lepa* the drug particles penetrate deeper into the skin through these pores. In this

whole process *Upashoshana* property of *Vyan* and *Saman Vayu* plays profound role. *Lepa* metabolizes and acts according to properties of herbs may be due to *Rasa*, *Guna*, *Virya*, *Vipaka* or *Prabhav*.<sup>[36]</sup> In modern medicine route of drug penetration is transepidermal either intra cellular or intercellular. Inter cellular penetration/absorption through stratum corneum layer corneocytes, terminal differentiated keratinocytes allows the transport of hydrophilic or polar solutes. Inter cellular spaces allow diffusion of lipophilic or non-polar solutes through the continuous lipid matrix. The trans appendageal route involves the passage of molecules through sweat gland and the hair follicles.<sup>[37]</sup> This *Lepa* is mainly *Tikta, Katu Ras Pradhan*. *Tikta Ras* possess *Lekhan, Kusthprasaman, Kledawsoshan*,

Lashikaawsoshan, PuyaAwsoshan, Kanduprasaman, Kusthaprasaman properties and it is Vata and Pitta Samak.<sup>[38,39]</sup> Katu Ras having Sodhan, KledAwsoshan, Kandu Vinasan, and it is VataSamak properties.<sup>[40,41]</sup> TikshanGuna having Sodhan properties. Laghu Guna is Lekhna, Kaphaghna properties and Ruksha Guna has Soshan properties.<sup>[42,43]</sup> Gomutra facilitates the penetration due to its Tikshna and Sodhan properties.<sup>[44]</sup>

## DISCUSSION

Kandu (itching) is a major symptom in skin diseases. Its mainly due to Kaphadosha, Vata and Pitta Dosha are also responsible for Kandu. When the drug is applied in the form of Lepa the drug particles penetrate deeper into the skin through Pores. Lepa metabolizes and acts according to properties of herbs may be due to Rasa, Guna, Virya, Vipaka or Prabhav. KaranjadiLepa having mainly Tikta, Katu Rasa Pradhana. Tikta Ras possess Lekhan, Kusthprasaman, Kledawsoshan, Lashikaawsoshan, PuyaAwsoshan, Kanduprasaman, Kusthaprasaman properties and it is Vata and Pitta Samak. Katu Ras havines Sodhan, Kled Awsoshan, KanduVinasan, and it is VataSamak properties. Tikshan Guna having Sodhan properties. Laghu Guna is Lekhna, Kaphaghna properties and Ruksha Guna has Soshan properties. Karanjadi Lepa having TridoshaSamak properties. According to modern science Itching (pruritus) is an unpleasant sensation that leads to scratching or rubbing. Itching is a earliest manifestation of most of the skin diseases. Itching perceives in the skin by unspecialized free unmyelinated nerve ending located in and around the dermo-epidermal junction as well as intra epidermal. Signals are transmitted through unmyelinated slow conducting C fibers through spinothalamic tract.<sup>[45]</sup> Clinical classification of itching is 1. Skin derived pruritus 2. Neuropathic pruritus 3. Neurogenic pruritus. Possible mode of action of itching 1. Mediator related pruritus (a) Amines (histamine, serotonin) (b) Proteases (c) Cytokines-Interleukins (d) Peptides (badykinin, substance P, calcitonin gene related peptide, neutrophin, opioid peptides) (e) Phospholipid Medtabolites (cannabinoids, eicosanoids, platelet activating factor

2. Mechanisms of Signaling Pathway (histamine dependent, histamine independent) **1. Mediator related pruritus Histamine** – Histamine is reserve in the mast cell and basophilic leukocyte, when these cells are activated histamine is induced to release. Its receptors G protein-coupled receptors, H1 and H4 receptors play important roles in the appearance of pruritus. Histamine could increase the calcium influx in the axon terminals of the spinal cord neurons and then promote a series of intracellular signal activation and ultimately lead to itching generation. **Serotonin** – Serotonin derived from mast cell, which may induce pruritus through the central and peripheral mediation. Periphery by encouraging mast cell to release histamine. **Proteases** – Proteases combining to GPCR called proteases activated receptors (PAR2 and PAR4). **Cytokines-Interleukins** – Interleukins are group of cytokines containing secreted proteins and signal molecules.<sup>[46]</sup> Medicine route of drug penetration is transepidermal either intra cellular or inter cellular. Inter cellular penetration/absorption through stratum corneum layer having keratinocytes allows the transport of hydrophilic or polar solutes. Inter cellular spaces allow diffusion of lipophilic or non-polar solutes through the continuous lipid matrix. The trans appendage route involves the passage of molecules through sweat gland and the hair follicles.

## CONCLUSION

Kushtha is Trishoshaj Vyadhi. Kandu (itching) Kapha Dosha Pradhan Vyadhi. Karanjadi Lepa is mainly Kaphavathar properties. It is Katu, Tikta Ras Vipak Katu and Ushna Virya. Tikta and Katu Ras is Rakta Sodhan properties. Tikta and Katu Ras is Kapha and Pitta Samak, Ushna Guna is Vata and Kapha Samak. Karanjadi Lepa act on Tridoshasamak mainly KaphaSamak properties help to treat the Kandu Lakshana of Kustha Vyadhi. Karanja, Kustha, Chakramard are anti-inflammatory properties and these drugs are anti-microbial, anti-bacterial, and immunomodulator properties are helping to treat itching.

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