

LEPA KALPANA IN BAHIRPARIMARJANA CHIKITSA: A COMPREHENSIVE REVIEW

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ABSTRACT

Bahirparimarjana Chikitsa represents an essential external therapeutic modality in Ayurveda, specifically localized treatment through topical applications. Among its various forms, Lepa Kalpana holds a distinctive position due to its effectiveness in managing inflammatory conditions, wound healing, and dermatological disorders. This review aims to critically analyse the classical concepts, preparation methods, therapeutic applications, and contemporary relevance of Lepa Kalpana, with a focus on its scientific correlation to modern transdermal drug delivery systems. The study adopts a comprehensive literary review methodology, drawing from classical Ayurvedic texts including Charaka Samhita, Sushruta Samhita, Ashtanga Hridaya, and Sharangadhara Samhita, along with authoritative lexicons and contemporary research databases such as PubMed and Google Scholar. Relevant data were systematically compiled, analysed, and interpreted to understand the pharmacological basis, classification, and mode

of action of Lepa formulations. Findings reveal that Lepa Kalpana operates through dermal absorption facilitated by structures such as Romakupa and Tiryakgami Dhamanis, with Bhrajaka Pitta playing a key role in metabolic transformation. These principles show notable parallels with modern transdermal drug delivery mechanisms, including enhanced bioavailability, bypass of first-pass metabolism, and targeted therapeutic action. Additionally, classical guidelines regarding preparation, consistency, and application significantly influence therapeutic efficacy. In conclusion, Lepa Kalpana serves as a vital bridge between traditional Ayurvedic wisdom and modern pharmaceutical science. Its integration into contemporary practice, supported by standardization, pharmacological validation, and safety assessment, can enhance its applicability in dermatology and wound management, reinforcing its relevance in evidence-based integrative medicine.

Keywords

Cutaneous absorption, Bhrajaka Pitta, Romakupa, Transdermal systems, Dosha

INTRODUCTION

Chikitsa (Treatment) is the centre of focus in Ayurveda that extends beyond the use of Medicine, it includes dietary changes, life style modification, treatment procedures psychotherapy etc., aiming for complete healing and disease prevention. According to Amarakośa (2nd chapter) the Nirukthi of the term Chikitsa is “Chikitsā rūk-pratikriyā” which means the process that removes pain [1]. Acharya Charka has defined chikitsa as any action restore the balance of the sharira dhatu. Acharya Chakrapani has explained it through an analogy yathā mudgaraprahārasahito ghaṭaparamāṇusantāno visadr̥ṣaṃ kapālasantānamārabhate just as by striking the hammer on a pot disturbs its atomic structure and creates fragments, similarly by the appearance of disease, the dhatus get disturbed and chikitsa helps to restore it.[2] It is subdivided based on prayoga bedha under yuktivyapashya into Anthaparmarjana (internal purification), Bahiḥparimārjana (external purification), and Śastra pranidhāna (surgical intervention), these constitute as Trividha Auśadham, which is one of the Aṣṭa Trikas.[3]

Bahiḥparimārjana Chikitsā refers to the topical application of drugs that act through Cutaneous contact. Through its etymological meaning Bahiḥparimārjana literally means external

purification of the body (Bahiḥ means external Parimārjana means cleansing). [4,5]. Acharya Charka as Defined it as yatpunarbahiḥsparśamāśrityābhyāṅgasvedapradehapariṣekonmardanādyairāmayān pramārṣṭi tadbahiḥparimārjanaṃ. Procedures such as Abhyāṅga, Sveda, Pradeha, Pariṣeka, and Unmardana that cleanse and heal by external contact According to Āchārya Gaṅgādhara in Jalpakalpataru Tika, the term “ādi” also includes other external therapies like Gandūṣa, Kavala, Netra-tarpaṇa, Karṇa-pūraṇa, and Yoni-pichu, etc[6] Ācārya Vāgbhaṭa states importance of bahya chikitsā by bāhyataḥ śudhikaraṃ bheṣajam, medicines or therapies that purify the body externally.[4] Bahiḥparimārjana Chikitsā is advised after Abhyanthara Śodhana when the dosa is localizes in the Tvak (skin) and Māṃsa (Muscle), or during the Alpadoṣa Avasthā.[7] There are several parameters help determine the type, intensity, and duration of Bahiḥparimārjana Chikitsā suitable for each patient based on the Yukthi of the patient the Factors to be considered are Prakṛti, Doṣa, Duṣya, Kāla, Deśa, Agni, Śarīrabalam, Vayaḥ.[8]

Even though there are many varieties of Bahirparimārjana Chikitsa, Lepa Kalpanā is the preparation and application of medicated herbal pastes, occupies a unique position. Lepa is also listed under one among the Śaṣṭi Upakramas. Its main purpose is to balance the local doṣas and support healing. From Vedic times to today, Lepa is

widely used for in Āgantuja and Nīja Śōtha, Vraṇa Ropaṇa, Tvak Prasādana and Tvak Sāvārṇikaraṇa .

This review systematically examines the classical concepts, classification, preparation, guidelines for administration, pharmacological basis, and contemporary relevance of Lepa Kalpanā.

MATERIALS AND METHODS

This study is a comprehensive review based on both classical Ayurvedic texts and contemporary scientific literature. The primary sources include Charaka Samhita (CS), Sushruta Samhita (SS), Ashtanga Hridaya (AH), Ashtanga Sangraha (AS), Sharangadhara Samhita (Śā.Sa.), Sahasrayoga (SaYo), Dravyaguna Vijnanam (DGV), Amarakosha, and Shabda Kalpadruma.

Secondary sources comprised peer-reviewed publications retrieved from databases such as PubMed, Google Scholar, and AYUSH research databases. Relevant articles were selected based on their scientific validity and relevance to the topic.

RESULTS

LEPA KALPANĀ

According to Shabda kalpadruma, The word Lepa means covering or coating, It is derived from the

Sanskrit root ‘Lip Upadehe’, meaning to smear or apply[9] As per Sharanghadhara uttarakhanda, Paryāya of lepa are Ālepa, Lipta, Lepa, and Lepana. Yādavaji in Dravyaguṇavijñānam has defined lepa as: Dravyamārdraṃ śilāpiṣṭam śuṣkaṃ vā sadravaṃ tanu, dehe pralepanārthaṃ tal-lepa ityucyate budhaiḥ means when Ardra or shushka Dravya are ground with a liquid to form a paste for external application on the body, it is called Lepa. [10]

Importance of Lepa Kalpanā

Acharya Sushruta explains the importance of lepa Kalpana with simple simile yathā pravajvalite veśmanyambhasā pariṣecanam |kṣipraṃ praśamayatyagnimevamālepanaṃ rujaḥ just as pouring water over a burning house immediately controls the fire, in the same way, applying Lepa quickly pacifies the aggravated Doshas at the local site. [11]

Furthermore, Acharya Suśruta adds ālepa ādya upakrama, Ālepa is the primary treatment for all forms of Śōtha, confirming its therapeutic priority in inflammatory conditions.[12]

Classification of Lepa

Table -1 Acharya Suśruta classifies lepa based on consistency, potency, and therapeutic intent:

Type	Definition	Characteristics	Indication
Pralepa	प्रलेपः शीतस्तनुरविशोषी	Thin, cool; removed before (aviśoṣī) or	Vraṇa-śōtha; non-suppurative

	विशोषी वा (Su. Sū. 18/6)	after (viśoṣī) drying	inflammation
Pradeha	प्रदेहस्तुष्णः शीतो वा बहलोऽबहुरविशोषी च (Su. Sū. 18/6)	Thick paste; warm or cool; not allowed to dry	Vāta-kapha imbalance; Śoṭha; Vraṇa śodhana
Ālepa	मध्यमोऽत्रालेपः तत्र रक्तपित्तप्रसादकृदालेपः (Su. Sū. 18/6)	Medium consistency; Rakta-Pitta prasādana	Avidagdha Śoṭha; Marma Sthānagata Vyādhi ; Guhya-roga

Table -2 According Āchārya Śārṅgadharma, based on action, particularly in the context of *Mukhalepa*. describes three types lepa -

Type of Mukhalepa	Action	Example Preparation
Doṣaghna	Reduces aggravated Doṣas and acts as an anti-inflammatory agent	Daśāṅga Lepa, Jadamayādi Lepa, Nāgarādi Lepa
Viśaghna	Acts as an antidote for bites, stings, and toxic conditions reduce local inflammation and promote healing.	Vilvādi Yoga and betel leaf juice
Varṇya	Enhances complexion and improves skin tone	Raktacandana, Mañjiṣṭhā, Lodhra, Kuṣṭha, Maśūra Haridrā

Table -3 Acharya vaghbhata divided Lepa according to their functional role in wound management.

Stage	Type of Lepa	Therapeutic Action
Acute	Śoṭha	Snaihika
		Provides unctuousness and

(Inflammatory phase)		applied in vatavikara
	Nirvāpaṇa	Cooling effect, reduces burning and inflammation, applied in pittaja vikar, vishvikara, Agnidagdha ,Ksharadagdha etc
	Prasādana	Soothing and calming effect on tissues
	Stambhana	Arrests discharge or bleeding
	Vilāyana	Ushnavirya Dravya are used in lepa and applied in Apakvashotha, Kaphmedhavi layana ,Granthishotha
Progressive Wound Management	Pācana	Promotes suppuration and maturation of wound use of ushnavirya and ruksha Dravya used in Pachyamanashotaja Vrana
	Pīdana	Facilitates drainage of accumulated material, use of ruksha and pichhila Dravya applied for vrana shotha
	Śodhana	Cleanses and purifies the wound
	Ropaṇa	Promotes healing and tissue regeneration

	Savarṇikaraṇa	Restores normal skin colour and complexion
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Method of Preparation

The general method of preparation of *lepa* is, if the dravya is ārdra (wet), it should be pounded directly on a śilā (motor) to make a Kalka. If the dravya is śuṣka, first make it into Cūrṇa then mix with a suitable Drava Dravya such as Svarasa (fresh juice), Kvātha (decoction), Ghṛta (ghee) etc, to prepare the Kalka (paste).

Pharmaceutically, it's a subtype of *Kalka Kalpana*, where *Kalka* can be used both internally and externally, but *Lepa* is only for external application on skin.[13]

Ideal Consistency of Lepa

Acharyas have particularly specified the consistency of *lepa* for its optimal Therapeutic Action. In Charaka Samhita, Acharya Charaka defined the proper consistency of *Lepa* as *nātisnigdho na rūkṣaśca na piṇḍo na dravaḥ samaḥ* it should neither excessively unctuous nor dry, neither too thick nor too liquid. Such an appropriate consistency Facilitates perfect adhesion, absorption, and therapeutic action. [14]

Quantity of Sneha Dravya

Acharya Suśruta prescribes doṣa-specific proportions of *Sneha* in the preparation of *Lepa*. For *Vātaja* disorders, *Sneha* is added in one-fourth (¼) proportion; for *Pittaja* conditions, one-sixth (1/6); and for *Kaphaja* disorders, one-eighth (1/8). This gradation ensures an appropriate balance between

Snigdha and *Rūkṣa* qualities according to the predominance of doṣa, thereby facilitating optimal absorption and enhancing therapeutic efficacy. [15]

Thickness Guidelines

Table -4 Based on different acharya variation in the thickness of *lepa*

Acharya	Thickness Specification
Ācārya Charaka	1/3 of thumb width (tribhāgāṅguṣṭhamātraḥ)
Ācārya Suśruta	Equivalent to fresh buffalo skin (~2.8–3.2 mm) महिषार्द्रचमा
Āchārya Śārṅgadhara Doṣaghna Lepa	¼ aṅgula
Viśaghna Lepa	⅓ aṅgula
Varṇya Lepa	½ aṅgula

Direction of Application

Acharya Sushruta advises specific direction for *lepa* to be applied "*Tatra pratilomam ālimpet*", it must be applied against the direction of hair growth (*Prathiloma*), this ensures drug adhere firmly, it penetrates through *romakupa* and reach the *swedhavaha srothas* for deeper absorption and effective therapeutic action.[16]

Time and Precaution

Time of application of *lepa* as a significant impact Acharya sushruth clearly advises “*Na cha lepam rātro prayuñjīta*” Night application is avoided except in specific conditions like *Apakva Shotha*, *Rakta* or *Shleshma Shotha*, poisonous bites, or pus-filled wounds, Daytime application is appropriate as it ensure proper heat dissipation and active *Srotas*, preventing Dosha aggravation. [17]

Removal and Prohibitions

According to *Sushruta Samhita*, Ācārya Suśruta provides clear guidelines regarding the proper use of *Lepa*. He states, “*Na cha śuśyamāṇam upekṣeta*,” indicating that a *Lepa* should not be allowed to dry completely and must be removed as it begins to dry, since complete desiccation reduces its therapeutic efficacy and may cause *Rūkṣatā* (roughness) of the skin. Further, the instruction “*Na cha pūryuṣitam lepam*” emphasizes that stale or previously used *Lepa* should never be reused, as it loses potency and may lead to *uṣhma*, *vedanā*, and *dāha*.

Similarly, “*Uparyupari lepam na kadācit...*” cautions against applying a fresh layer over an existing one, as such layering can trap heat and moisture, resulting in *dāha* (burning), *śotha* (inflammation), and swelling. Moreover, the application of a cold, fully dried *Lepa* may produce adverse effects such as *kleda*, *śūla*, and *vīsarpa*. [18]

LEPA ACROSS THE CLASSICAL SAMHITĀS- Table -5

Text	Key Features	Total Lepa
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		Kalpas
Charaka Saṃhitā	Lepa classified by dravya source (Jāṅgama, Pārthiva, Audbhida); aragvadiya adhyaya of charaka sutrasthana 3 rd chapter lists 32 Cūrṇa-Pradeha; Chikitsasthana describes 83 Pralepa/Ālepa	~115
Suśruta Saṃhitā	Ālepa as primary Upakrama; Śaṣṭi Upakrama classification; Kṛṣṇakarma, Pāṇḍukarma, Roma-sañjanana uses	~105
Aṣṭāṅga Hṛdayam	R̥tucaryā-based Mukhalepa; wide disease coverage including Jvara, Rājyakṣmā, Arśa	~50
Aṣṭāṅga Saṅgraha	Expanded disease coverage; systematic listing	~87
Śārṅgadhara Saṃhitā	Dedicated Lepa chapter; mineral	~91

	and marine ingredients; specialised Lepas (Kītaghna, Yoni-saṅkocaka, Stanavṛddhikāra)	
Sahasrayoga	Term 'Kulambu'; cosmetic and therapeutic Lepas scattered across Prakaraṇas; Rasnādi Cūrṇa, Elādi Taila for regional use	Multiple

DISCUSSION

Role of Twak (Skin) in Bahirparimarjana Chikitsa

Twak (skin) is the primary interface for all *Bahirparimarjana* therapies. Acharya Charaka states that *Vata* governs touch and resides in the *Twak*, making it exquisitely responsive to external stimuli: [19] Sparśane'bhyadhiko vāyuh, sparśanam ca tvagāsritam.”

Critically, Acharya Sushruta (Sutrasthana 21/10) identifies *Bhrajaka Pitta* as the functional entity that metabolizes substances applied externally: Tatra tu tvaci pittam tasmin bhrājako'gnir iti sañjñā | so'bhyaṅga-pariṣeka-avagāha-lepanādīnām kriyā-dravyāṇām paktā.”

This classical description aligns with modern understanding of cutaneous enzymes particularly Cytochrome P450 enzymes present in keratinocytes, Langerhans cells, fibroblasts, and sebaceous glands which metabolize topically applied drugs, activate or inactivate them locally, and significantly influence drug efficacy and skin irritation. [20]

Mode of Action of Lepa Chikitsa

In the Dhamani Vyakarana Adhyaya, Acharya Sushruta describes the Tiryakgami Dhamanis channels that branch into hundreds and thousands, forming a network connected to the Romakupas. These channels carry Sveda (sweat) and circulate Rasa inside and outside the body. Through these openings, the Veerya of Abhyanga, Parisheka, Avagaha, and Lepa is absorbed through the skin.

The mechanism of drug penetration in Lepa Chikitsa can be summarized as follows:

1. Application of Lepa with mild frictional rubbing (Pratilomam) generates gentle heat, opening the Romakupas and enhancing pilosebaceous uptake.
2. Heat dilates superficial capillaries, facilitating local drug absorption.
3. A portion of absorbed drug enters minor veins to reach systemic circulation.
4. Bhrajaka Pitta in Tvak performs Paka (biotransformation) of the applied drug.
5. Samana and Vyana Vayu support distribution; Sleshaka Kapha maintains smoothness and stability.

At the tissue level, Rasa and Rakta Dhatus nourish the Romakupas through Tiryak Dhamanis, aiding deeper absorption. [21]

Lepa and Transdermal Drug Delivery System (TDDS)

The classical mechanism of Lepa absorption closely parallels the modern Transdermal Drug Delivery System (TDDS). In TDDS, drugs permeate through the stratum corneum, diffuse through the viable epidermis and dermis, enter dermal capillaries, and achieve systemic bioavailability.

Both systems share the same fundamental route: topical application → skin penetration → local action → systemic distribution. Key advantages common to both include: bypassing first-pass hepatic metabolism, enhanced bioavailability, sustained drug release, and direct access to target tissues. [22]

Lepa Kalpana in Contemporary Therapeutics

The evolution of *Lepa Kalpanā* into contemporary Ayurvedic pharmaceutical formulations exemplifies the practical realization of Ācārya Vāgbhaṭa's principle of “*Bahukalpam Bahugunam Sampannam Yogyam Auśadham*”,

Table -6 Analysis of chaturguna of dravya with modern parameters

Quality	Meaning	Modern Realization
Bahukalpam	Multiple dosage forms possible	Creams, gels, ointments, face packs, nano-Lepas, sheet masks
Bahagunam	Many inherent qualities	Multi-functional efficacy: anti-inflammatory, complexion-enhancing, wound healing, hair growth
Sampannam	Grown in good soil; of proper species; processed correctly	Standardization, quality control, GMP compliance; Drugs & Cosmetics Act (1940) validation
Yogyam	Suitable per Desha-Kala-Dosha-Dushya-Roga-Rogi	Eco-adapted packaging; time-efficient for modern urban lifestyle; targeted

		formulations
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Advantages	Limitations
Localized action at the affected site with minimal systemic side effects	May stain skin or clothing
Easy to prepare from commonly available herbal ingredients	Potential for unpleasant odour
Can be combined with both Shamana and Shodhana therapies	Risk of skin sensitivity and allergic reactions (Type I hypersensitivity)
Bypasses hepatic first-pass metabolism enhanced local bioavailability	Lack of sterility if prepared improperly
Direct cosmeceutical and dermatological applications	Inappropriate consistency reduces effectiveness
Low cost; accessible to patients across socioeconomic levels	Short traditional shelf life (24 hours) without modern processing
Versatile applicable in acute, sub-acute, and chronic conditions	Requires skilled application to ensure correct thickness, direction, and timing

Pharmacovigilance Considerations

Although *Lepa Kalpanā* is generally safe, adverse reactions may occur. A case reported Type I hypersensitivity reaction following *Daśāṅga Lepa* application, presenting with erythema, pruritus, and papular eruptions. This highlights the need for prior *Prakṛti* and allergy assessment, patch testing in susceptible individuals, cautious use in patients with dermatitis, and proper documentation and reporting of adverse drug reactions. Janthli et al. (2015)

CONCLUSION

Bahirparimarjana Cikitsā, particularly *Lepa Kalpanā*, represents a well-established and clinically significant external therapeutic modality in Ayurveda. Classical treatises such as the *Charaka Samhita*, *Sushruta Samhita*, and *Ashtanga Hridayam* provide a comprehensive and systematic framework encompassing its pharmacological basis, pharmaceutical preparation, method of application, and therapeutic indications. The conceptual parallels between classical mechanisms of drug absorption via *Tiryakgāmī Dhamanīs*, *Romakūpas*, and *Bhrājaka Pitta* and modern transdermal drug delivery systems offer a compelling scientific rationale for its continued relevance. Furthermore, the principle of “*Bahukalpam Bahuguṇam Sampannam Yogyam Auśadham*” underscores the adaptability of Ayurvedic formulations in contemporary practice.

Thus, *Lepa Kalpanā* stands as a crucial interface between traditional wisdom and modern

Table 7-Advantages of lepa and Limitation

therapeutics, warranting rigorous standardization, pharmacological validation, and evidence-based integration into dermatology, wound care, and cosmeceutical sciences.

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