



## CRITICAL REVIEW OF KALKA KALPANA (AN AYURVEDIC DOSAGE FORM) FROM SUSHRUTA SAMHITA

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**ABSTRACT** Kalka (Herbal Paste) is one of the potent dosage forms useful in Ayurvedic pharmacetics and therapeutics. Its description is found scattered in Ancient Ayurvedic classics. Here an attempt is made to review Kalka critically from the Ayurvedic classic Sushruta Samhita. Data research was carried out by following special criteria containing internal or external administration, diseases, wound healing, cosmetology etc. A lot of references were found regarding utility of Kalka in various procedures recommended in management of different diseases. Sushruta Samhita has introduced distinctive formulations of Kalka along with the way or mode of its applications in different diseased conditions. Present review reflects the importance of both potency and applicability of Kalka Kalpana and the classic Sushruta Samhita for its great contribution.

**KEYWORDS :** Ayurveda, Herbal Paste, Sushruta Samhita, Bhaishajya Kalpana, Shadvidha Kashaya Kalpana, Ayurvedic Pharmaceutics, Ayurvedic Formulations.

### INTRODUCTION

Ayurveda- the science of life is oldest treasure of Medical Sciences of ancient India. It has two basic objectives i.e. maintenance of health and cure of disorders. For this purpose number of Kalpanas (pharmaceutical forms) are described in accordance with disorders.

In Ayurvedic therapeutics, drug therapy is given prime importance. The Ayurvedic drug formulation as described in ayurvedic treatise Sushruta Samhita is based on what is known as "Shadvidha Kashaya" 1 concept. According to this concept there are Six basic pharmaceutical forms found in Sushruta Samhita known as 1- 'Kshira' (Medicated Milk) 2- 'Rasa' (Expressed Juice) 3-'Kalka'(Fine Herbal Paste) 4- 'Kashaya' (Decoction) 5- 'Shita' (Cold Infusion) and 6-'Chúrma' (Powdered Drugs).

Most of the classical texts such as Ashtanga Samgraha, Ashtanga Hridaya, Sharangdhara Samhita, etc have mentioned "Kalka" formulation as one of the basic formulations, which reflects wide spectrum of Kalka in Ayurvedic therapeutics in ancient times. It is also considered as having quick therapeutic action.

In ancient era, Ayurvedic medicines were being prepared by the Vaidya himself for the use of his patients and Ayurvedic pharmaceutics in ancient times dealt with small scale manufacturing. As Kalka and other Shadvidha Kashaya Kalpana are having very less shelf life, they are difficult to be manufacture and dispense on large scale and marketing them. This might have led to search for other greater efficacy secondary formulations like Asava, Arishta (Fermentative medicinal formulations), Avaleha, Vati- Guti (Tablets), etc. On other hand, the references of Kalka and other formulations are found scattered in Sushruta Samhita. Here, an attempt is carried out for collection of these references of Kalka Kalpana from Sushruta Samhita at one place so as to derive useful results from it.

### MATERIALS AND METHODS:

All the references regarding Kalka Kalpana were compiled from the original text of Sushruta Samhita in Sanskrit language by manual reading. The compiled data was divided in different groups according to their disease, internal and external use, wound healing activity and cosmetology. Nibandha Sangraha commentary by Dalhana was also referred to understand the deep and hidden meanings of some references.

### Inclusion and Exclusion:

Kalka formulations indicated as internal, external, wound healing (Vrana Chikitsa) and cosmetology were included in this review. Kalka used as a single or with combination were included. Formulations containing Kalka as an ingredient were excluded. As the data was massive, it was difficult to include in this review.

### RESULTS

#### Definition and methods of Kalka in Sushruta Samhita

Acharya Sushruta has assigned this formulation third position amongst Shadvidha Kalpana. In this formulation, whole plant is used but its

concentration is comparatively less than Swarasa. In this preparation, whole drug is reduced to fineness and no portion of the drug is discarded in this preparation.

According to Acharya Sushruta, Kalka is that which is prepared in the Pinda form by grinding in wet state 1.

Acharya Sharangdhara has given more elaborative definition of Kalka Kalpana. According to him, fresh (wet) or dry drug with water when ground on stone plate is known as Kalka 2.

#### Kalka used for External Medication

Kalka of some herbs are used for external medication. Various modes of application have been discussed in Sushruta Samhita Uttara Tantra. These include Anjana; Aaschyotana; Lepa.

Total of 52 Kalka formulations have been given in Netra Roga for external application. Fourteen of them have been enlisted in this study (Table 1).

#### Talishadi Kalka- Pittaja Abhishyanda

Acharya Sushruta has indicated this formulation in Pittaja Abhishyanda. Talisa, Ela, Gairika, Ushira and Shankha are mixed with Stanya and made into a paste in the form of Kalka. It is applied in the form of Anjana. Stanya used in this formulation makes it Balya, Bruhana, Chakshushya & Shamana. Anjana Kalpana acts on the target area directly. It helps in pacifying Pitta Dosha Prakopa and relieves Daha. Acharya Sushruta has focused on Sookshma-gamitava which forms a unique feature.

#### Rodhradi Kalka- Pittaja Abhishyanda

Acharya Sushruta has indicated this formulation in Pittaja Abhishyanda. The ingredients of this formulation namely- Lodhra, Yashti-madhu, Draksha, Sharkara, Vacha and Utpala should be soaked in Stanya. Yashtimadhu is Madhura-Madhura, Sheeta. It pacifies the aggravated Pitta due to its Madhura Rasa & Madhura Vipaka. It is Shothahara & Vedanashamaka by virtue of its action. Lodhra which is one of the ingredients in this formulation is Kashaya, Tikta Rasa, Laghu, Sheeta Veerya & Katu-Vipaka. The drugs in this formulation are having Tikta, Kaşaya- Rasa, Laghu, Rukşā- Guṇas and Katu Vipaka. Madhura Rasa and Madhura Vipaka pacify the Pitta Dosha. Kashaya Rasa shows its Shoshana, more particularly Kleda Shoshana. The drugs having Madhura Vipaka possess Rasayana, Chakshushya, Jivaniya, Balya properties. Because of its Rasayana action the substrate Dhatus, vitiated Dhatu as well as cornea are nourished, thus by improving the functional capacity of the eye, this formulation works excellent in Pittaja Abhishyanda.

#### Pataladi Kalka- Raktaja Abhishyanda

The ingredients of this formulation namely - Patala, Arjuna, Shriparni, Dhataki, Dhatri, Bilva, the two kinds of Bruhati, Vimbi-lota & Manjishtha are taken in equal parts & mixed with Madhu/Ikshu Rasa. This is applied locally to the affected area in the form of Anjana.

Anjana as per Ayurveda classics is Kapha–Pitta–Shamaka, Raktashodhaka, Chakshushya, Rasayana, Shothahara, and Vedanasthapana.

Manjishtha has Raktashodaka properties on account of Tikta & Kashaya Rasa present. This formulation is mixed with Madhu. Madhu has Sheeta Veerya and Sookshma-Srotogami i.e. enters minute channels in action. In addition to this, it is Yogavahi i.e. it enhances the effect of the drug with which it combines.

#### Kalka used in combination for Internal Medication

Sixteen combinations of Kalka were found in this review. Most of them were containing herbs having Madhura (sweet) Rasa (taste) and Teekshna in their mode of action. These have been enlisted in Table 2.

#### Kusthadi Kalka<sup>3</sup>

Kusthadi Kalka. It contains Kushtha & Langali Moola. It is a Teekshna Kalka that aids in Shodhana. It is indicated in cases of delayed Aparapatana. Aparata which has not come out, gives rise to distension of abdomen and flatulence. Hence, paste of root of Laangli and Kushtha mixed with Madhya is advised to be given orally to Sutika (in whom Aprapatana is prolonged). As it is an emergency condition, Kalka is administered. If left untreated, delayed Aprapatana might lead to Makkal Shoola owing to uterine contractions.

#### Krushnadi Kalka<sup>4</sup>

Krushnadi Kalka is indicated by Acharya Sushruta in Mudhagarbha. This is an exclusive contribution by Acharya Sushruta. Teekshna Kalka has been indicated for Shodhana.

In Mudhagarbha; Sushruta has advised to save baby first. If baby doesn't come out on its own, then mother should be saved first & baby should be removed by Shastra Karma. In course of this forceful intervention; due to Vikruti of Apana Vayu; Kleda along with Rakta stay within and fail to expel out. In this Avastha, Kalka of Pippali; Shunthi & Ajmoda is given with Sneha to mother in order to liquefy the Doshas; thereby removing Kleda and relieving the pain.

#### Karveeradi Kalka<sup>5</sup>

Karveeradi Kalka constituting Karveera & Gunja is indicated in Dushyodara for Abhyantara Shodhana. Patient of Dushyodara i.e. Sannipatodara should be treated after informing its incurability. Kalka of Karveera & Gunja is mixed with Teekshna Madhya for internal intake. This formulation liquefies the Dosha Sanghata & breaks the Srotorodha. Here all poisonous Dravyas are mixed & made into Kalka of high potency which is required in this Avastha. If this condition is left untreated, it will surely kill the patient and if treated might save the patient; though it would show some toxic effects.

#### Chandanadi Kalka<sup>6</sup>

Acharya Sushruta has described formulations taking into account Dosha-Dushya Avastha. Teekshna Kalkas have been indicated where Shodhana is needed. Similarly, a Saumya (Pitta-Shamaka) Chandanadi Kalka has been indicated in Rakta-Pitta. Kalka of Chandana, Madhuka and Rodhra has been indicated to be consumed internally for 3 days in patient of Raktapitta and also in Nasagata Raktapitta.

It is Pittashamaka; Stambhaka & Raktaprasadaka.

#### Kalka in Vrana Chikitsa

Acharya Sushruta has given the prime position to "Wound, i.e. Vrana". He has described all types of wounds and their complete management. He has mentioned sixty measures for the management of wound. Kalka application is one of them.

Kalka Kalpana is indicated in healing up a Vrana situated in a muscular part from which all putrid flesh has been removed or sloughed off and which exhibits a clear cavity.

#### TILA KALKA<sup>7</sup>

An application of the paste of Tila mixed with Madhu and Nimba - leaves leads to the purification of Vrana; whereas an application of the same paste (i.e. Sesamum, Madhu and leaves of Nimba), mixed with Ghrita tends to heal up the ulcer.

This paste tends to allay the deranged Vayu through its Madhura Rasa, Snigdha and Ushna Guna; subdues the deranged Pitta through its Kashaya, Madhura & Tikta Rasa and proves beneficial even in the case of the deranged Kapha through its Ushna, Kashaya and Tikta Rasa. An application of the Tila Kalka mixed with the drugs of Shodhana & Ropana gana tends to purify and heal up an ulcer. (Table 3)

Tila Kalka is Yogavahi. It aids in Shodhana, Ropana and Shodhana-Ropana. When Tila is mixed with Nimba Patra and Madhu, it aids in Vrana Shodhana (devoid of dushyas) whereas when same paste i.e. Tila; Nimba Patra & Madhu is mixed with Ghrita, it aids in Vrana Ropana (healing). Kalka Kalpana in Cosmetology

#### Pandukarana

Owing to the defective or faulty healing, Vrana attains black color. The natural and healthy colour (Pandu) of the surrounding skin should be imparted to this black patch. Acharya Sushruta has given a Kalka formulation to restore the natural skin color. This is being discussed here.

The fruit of the Rohini (Haritaki) should be immersed in Aja Ksheera for seven nights and afterwards made into a fine paste with the same Ksheera. This should be applied to the skin. This measure is called Pandukarana (imparting a yellow or natural skin-colour to the blackened patch) 8.

#### Romasanjanana

It refers to causing hair re-growth. Acharya Sushruta has given 2 Kalka formulations for Romasanjanana. These are being discussed here.

#### Hashtidantadi Kalka<sup>9</sup>

Ash of Hashtidanta (elephant's tusk) and Rasanjana is to be mixed with Aja Ksheera and applied on affected area. This helps in regrowth of hair even on the palms.

#### Kasisadi Kalka<sup>10</sup>

Kasisa and tender [Karanja leaves are made into a paste](#) with Kapiththa Swarasa. This is applied on the affected area. This helps in appearance of hair in that region.

#### DISCUSSION

Shadvidha Kashaya Kalpana comprises 'Kshira' (Medicated Milk), 'Rasa' (Expressed Juice), 'Kalka' (Fine Herbal Paste), 'Kashaya' (Decoction), 'Shita' (Cold Infusion) and 'Churna' (Powdered Drugs). The potentiality of the medicines of the preceding category is greater than the succeeding ones. Kalka is more potent than Kashaya Kalpana. As Kalka is a pure herbal extract, it contains chemical constituents in natural form. There is a least chance of alteration of chemical properties of Kalka because very less physical process is involved in its preparation. That may be the reason for the high pharmaceutical and therapeutic potency of Kalka as compared to Kwatha. Various properties, pharmacological actions and indications of combinations of herbal drugs are compiled in many Ayurvedic databases of raw drugs; maximum of which can be expected in Kalka dosage form of respective drugs.

#### CONCLUSION

By reviewing Sushruta Samhita, a large number of references regarding pharmaceutical and therapeutic aspects of Kalka are observed. Kalka is used in multiple approaches like internal, external; with combination, in therapeutic procedures like Vrana Chikitsa, etc. It is indicated in the management of different diseased conditions. This review emphasizes an importance of Kalka in Ayurvedic pharmaceuticals and therapeutics. This potent dosage form should be evaluated pharmaceutically, analytically, pharmacologically and clinically to establish its safety and efficacy on scientific bases and to open new arena in invention of many biologically active organic molecules.

**Table 1: Kalka for External Medication Su.U= Sushruta Samhita Uttara Tantra**

S.No	Name of Kalka	Drugs	External Use	Disease	Reference
1.	Talishadi	Talisha, Ela, Gairika, Usheera, Shankha, Stanya	Anjana	Pittaja Abhishyanda	Su.U.10/8
2.	Rodhradi	Rodhra, Draksha, Sharkara, Yashtimadhu, Vacha, Utapala	Anjana	Pittaja Abhishyanda	Su.U./10
3.	Fenadi	Samudrafena, Stanya, Makshika	Anjana	Pittaja Abhishyanda	Su.U./10
4.	Yashtimadhukadi	Yashtimadhu, Rodhra, Draksha, Sharkara, Utpala, Stanya	Anjana	Pittaja Abhishyanda	Su.U./10
5.	Trayushandi	Trayushna, Triphala, Haridra, Vidanga, Jala	Anjana	Kaphaja Abhishyanda	Su.U.11/7

6.	Jaatyadi	Jaati pushpa, Karanja, Shobhanjana Beej	Anjana	Kaphaja Abhishyanda	Su.U. 1/8
7.	Shigrufaladi	Shigru fala, Karanja Fala, Bruhati	Anjana	Kaphaja Abhishyanda	Su.U. 1/8
8.	Rasanjanadi	Rasanjana, Saindhava, Chandana, Manashila, Haritala, Lashuna	Anjana	Kaphaja Abhishyanda	Su.U. 1/9
9.	Nilotpaladi	Nilotpala, Usheera, Kantakari Kaliyaka, Yashtimadhu, Musta, Rodhra, Padmaka, Shatdhaut Ghrita	Lepa	Raktaja Abhishyanda	Su.U. 12/7
10.	Pataladi	Patala, Arjuna, Shriparni, Dhataki, Dhatri, Bruhati, Manjishtha, Madhu, Iskhurasa	Anjana	Raktaja Abhishyanda	Su.U. 12/1-12
11.	Nepalajadi	Nepalaja, Maricha, Shankha, Rasanjana, Sindhu, Guda, Makshika	Anjana	Kukunaka	Su.U. 19/13
12.	Murvadi	Moorva, Madhuka, Amra	Anjana	Kukunaka	Su.U. 19/13
13.	Krushnaysadi	Krushnayasa, Ghrita, Ksheera, Madhu, Antardhooma Dagdha	Anjana	Kukunaka	Su.U. 19/14
14.	Vyoshadi	Vyosha, Palandu, Madhuka, Saindhava, Laksha, Gairika	Anjana	Kukunaka	Su.U. 19/15

Table 2: Kalka for Internal Medication

S.No	Name of Kalka	Drugs	Disease	Reference
1.	Kushthadi Kalka	Root of Kushtha and Langali Anupana- Madhya	Delayed Aprapatana	Su.Sha. 10/57
2.	Krushnadi Kalka	Krushna, Shunthi, Ela, Hingu, Bharagi Ajmoda, Vacha, Ativisha	Mudhagarbha	Su.Chi. 15/20-21
3.	Karveeradi Kalka	Karveera, Gunja Anupana- Teekshna Madhya	Udara-roga	Su.Chi. 14/8
4.	Matulungadi Kalka	Matulunga, Madhu, Saindhava	Pittaja Jvara	Su.U. 39/185
5.	Dadimadi Kalka	Dadima, Draksha, Kharjura, Sharkara	Pittaja Jvara	Su.U. 39/185
6.	Abhyadi Kalka	Abhya, Pippali	Atisaara with Pain	Su.U. 40/33
7.	Hastidanti Kalka	Hastidanti, Pippali	Atisaara with Aama & Shoola	Su.U. 40/52
8.	Utapaladi Kalka	Utpala, Sharkara, Lodhra, Samanga, Yashti-madhu and Tila – mix with Madhu, give with Aja Ksheera	Raktatisaara	Su.U. 40/122
9.	Tiladi Kalka	Krushna Tila, Yashti-madhu Samanga, Utpala - mix with Madhu, give with Aja Ksheera	Raktatisaara	Su.U. 40/122
10.	Tiladi Kalka	Tila, Mocha-rasa, Lodhra, Yashti-madhu and Utpala – mix with Madhu, give with Aja Ksheera	Raktatisaara	Su.U. 40/123
11.	Kacchuradi Kalka	Kacchura, Tila Kalka – mix with madhu, give with Aja Ksheera	Raktatisaara	Su.U. 40/124
12.	Pathadi Kalka	Patha, Ajamoda, Kutaja-seeds, Shunthi and Magadhika taken in equal parts + Lukewarm Jala	Pravahika with Shoola	Su.U. 40/153
13.	Matulungadi Kalka	Matulunga mula & Pushpa-make into paste and give with Tandulodaka	Raktapitta	Su.U. 45/36
14.	Pippalyadi Kalka	Pippali, danti made into paste, give with koshwati(kadvi taroi)	Visuchika	Su.U. 46/17

15.	Pippalyadi Kalka	Pippali, Shunthi made into paste – give with lukewarm water	Visuchika	Su.U. 46/17
16.	Abhyadi Kalka	Paste of Abhaya, Amalaka and Aksha (Vibhitaka), mixed with Lavana	Mutraghata	Su.U. 58/37

Su.Sha = Sushruta Samhita Sharira Sthana

Su.U = Sushruta Samhita Uttara Tantra

Su.Chi = Sushruta Samhita Chikitsa Sthana

TABLE 3: TILA KALKA

S.No	Name of Kalka	Drugs	Disease	Reference
1.	Tiladi Kalka	Tila, Madhu	Vrana	Su.Chi. 1/65
2.	Tiladi Kalka	Tila, Nimba Patra, Madhu	Vrana	Su.Chi. 1/67
3.	Tiladi Kalka	Tila, Nimba Patra, Madhu, Sarpi	Vrana	Su.Chi. 1/68

Su.Chi = Sushruta Samhita Chikitsa Sthana

## REFERENCES:

- Vd. Jadhavji Trikamji Acharya, Sushruta Samhita Nibandasangraha commentary of Dalhanacharya, Chikitsa Sthana Adhyaya 44 - Verse 90 edited by Chaukhamba Surbharti Prakashana, Varanasi, reprint 2003.
- Sharangadhara Samhita of Sharangadhara, Madhyam Khanda; Adhyaya 5 - Verse 1. 1st edition, Varanasi: Chaukhamba Surbharti Prakashan
- Vd. Jadhavji Trikamji Acharya, Sushruta Samhita Nibandasangraha commentary of Dalhanacharya, Sharira Sthana Adhyaya 10 - Verse 21. edited by Chaukhamba Surbharti Prakashana, Varanasi, reprint 2003,
- Vd. Jadhavji Trikamji Acharya Sushruta Samhita Nibandasangraha commentary of Dalhanacharya, Chikitsa Sthana Adhyaya 15 - Verse 20-21. edited by, Chaukhamba Surbharti Prakashana, Varanasi, reprint 2003.
- Vd. Jadhavji Trikamji Acharya Sushruta Samhita Nibandasangraha commentary of Dalhanacharya, Chikitsa Sthana Adhyaya 14 - Verse 8. edited by, Chaukhamba Surbharti Prakashana, Varanasi, reprint 2003.
- Vd. Jadhavji Trikamji Acharya Sushruta Samhita Nibandasangraha commentary of Dalhanacharya, Uttarantra Adhyaya 45 - Verse 26 edited by, Chaukhamba Surbharti Prakashana, Varanasi, reprint 2003.
- Vd. Jadhavji Trikamji Acharya Sushruta Samhita Nibandasangraha commentary of Dalhanacharya, Chikitsa Sthana Adhyaya 1 - Verse 65. edited by, Chaukhamba Surbharti Prakashana, Varanasi, reprint 2003.
- Vd. Jadhavji Trikamji Acharya Sushruta Samhita Nibandasangraha commentary of Dalhanacharya, Chikitsa Sthana Adhyaya 1 - Verse 95, edited by Chaukhamba Surbharti Prakashana, Varanasi, reprint 2003.
- Vd. Jadhavji Trikamji Acharya Sushruta Samhita Nibandasangraha commentary of Dalhanacharya, Chikitsa Sthana Adhyaya 2 - Verse 101, edited by Chaukhamba Surbharti Prakashana, Varanasi, reprint 2003.
- Vd. Jadhavji Trikamji Acharya Sushruta Samhita Nibandasangraha commentary of Dalhanacharya, Chikitsa Sthana Adhyaya 2 - Verse 101, edited by Chaukhamba Surbharti Prakashana, Varanasi, reprint 2003.