

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* pharmaceuticals 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 the utility of *Kalka* in various procedures recommended for the 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. The present review reflects the

importance of both the potency and applicability of *Kalka Kalpana* and the classic *Sushruta Samhita* for their great contribution.

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

INTRODUCTION

Ayurveda- the science of life is the 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) is described following disorders. In *Ayurvedic* therapeutics, drug therapy is given prime importance. The *Ayurvedic* drug formulation as described in the *Ayurvedic* treatise *Sushruta Samhita* is based on what is known as the “*Shadvidha Kashaya*”^[1] concept. According to this concept, there are six basic

pharmaceutical forms found in Sushruta Samhita known as 1- '*Kshíra*' (Medicated Milk) 2- '*Rasa*' (Expressed Juice) 3- '*Kalka*' (Fine Herbal Paste) 4- '*Kashaya*' (Decoction) 5- '*Shita*' (Cold Infusion) and 6- '*Chúrna*' (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 the wide spectrum of *Kalka* in *Ayurvedic* therapeutics in ancient times. It is also considered as having quick therapeutic action. In the ancient era, *Ayurvedic* medicines were prepared by the *Vaidya* himself for the use of his patients and *Ayurvedic* pharmaceuticals 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 manufacture and dispense on large scale and marketing them. This might have led to a search for other greater efficacy secondary formulations like *Asava*, *Arishta* (Fermentative medicinal formulations), *Avaleha*, *Vati- Guti* (Tablets), etc. On other hand, the references to *Kalka* and other formulations are found scattered in *Sushruta Samhita*. Here, an attempt is carried out to the collection of these references of *Kalka Kalpana* from *Sushruta Samhita* in one place 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 the Sanskrit language by manual reading. The compiled data were divided into different groups according to their disease, internal and external use, wound healing activity and cosmetology. *Nibandha Sangraha's* commentary by *Dalhana* also referred to understanding the deep and hidden meanings of some references.

Inclusion and Exclusion

Kalka formulations indicated as internal, external, wound healing (*Vrana Chikitsa*) and cosmetology was included in this review. *Kalka* used as a single or with a combination was 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, the whole plant is used but its concentration is comparatively less than *Swarasa*. In this preparation, the 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 a wet state.^[1]

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

***Kalka* used for external medication**

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

A total of 52 *Kalka* formulations have been given in *Netra Roga* for external application.

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* under 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 *Tikta*, *Kaṣaya- Rasa*, *Laghu*, *Rukṣa- 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*, and *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 excellently 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*. *Kalka* (Herbal Paste) is one of the potent dosage forms useful in *Ayurvedic* pharmaceuticals 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 the utility of *Kalka* in various procedures recommended for the 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. The present review reflects the importance of both the potency and applicability of *Kalka Kalpana* and the classic *Sushruta Samhita* for their great contribution.

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 with 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.

***Kusthadi kalka*^[3]**

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

Krushnadi kalka^[4]

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 saving the baby first. If the baby doesn't come out on its own, then the 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 the mother to liquefy the *Doshas*; thereby removing *Kleda* and relieving the pain.

Karveeradi kalka^[5]

Karveeradi Kalka constituting *Karveera* & *Gunja* is indicated in *Dushyodara* for *Abhyantara Shodhana*. Patients of *Dushyodara* i.e. *Sannipatodara* should be treated after informing of its incurability. *Kalka* of *Karveera* & *Gunja* is mixed with *Teekshna* *Madhya* for internal intake. This formulation liquates 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^[6]

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 patients 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 the 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^[7]

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., Sesame, *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 an ulcer. *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 the 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 healing, *Vrana* attains black colour. 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 colour. 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.

Hastidantyadi kalka^[9]

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

Kasisadi kalka^[10]

Kasisa and tender *Karanja* leaves are made into a paste with *Kapittha Swarasa*. This is applied to the affected area. This helps in the appearance of hair in that region.

DISCUSSION

Shadvidha Kashaya Kalpana comprises '*Kshíra*' (Medicated Milk), '*Rasa*' (Expressed Juice), '*Kalka*' (Fine Herbal Paste), '*Kashaya*' (Decoction), '*Shita*' (Cold Infusion) and '*Chúrna*' (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 its natural form. There is the least chance of alteration of the chemical properties of *Kalka* because the 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; the maximum of which can be expected in the *Kalka* dosage form of respective drugs.

CONCLUSION

By reviewing *Sushruta Samhita*, a large number of references regarding the pharmaceutical and therapeutic aspects of *Kalka* are observed. *Kalka* is used in multiple approaches like internal, and external; with combination, in therapeutic procedures like *Vrana Chikitsa*, etc. It is indicated in the management of different diseased conditions. This review emphasizes the 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 a new arena in the invention of many biologically active organic molecules.

REFERENCES

1. Vd. Jadhavji Trikamji Acharya, *Sushruta Samhita Nibandasangraha commentary of Dalhanacharya, Chikitsa Sthana Adhyaya* by Chaukhamba Surbharti Prakashana, Varanasi, 2003: 44: 91.
2. Sharangadhara Samhita of Sharangadhara, Madhyam Khanda; Adhyaya, Varanasi: Chaukhamba Surbharati Prakashan, 5: 1 – 1.
3. Vd. Jadhavji Trikamji Acharya, *Sushruta Samhita Nibandasangraha commentary of Dalhanacharya, Sharira Sthana Adhyaya*. edited by Chaukhamba Surbharti Prakashana, Varanasi, 2003; 10: 21.

4. Vd. Jadhavji Trikamji Acharya Sushruta Samhita Nibandasangraha commentary of Dalhanacharya, Chikitsa Sthana Adhyaya, Chaukhamba Surbharti Prakashana, Varanasi, 2003; 15: 20 – 21.
5. Vd. Jadhavji Trikamji Acharya Sushruta Samhita Nibandasangraha commentary of Dalhanacharya, Chikitsa Sthana Adhyaya, Chaukhamba Surbharti Prakashana, Varanasi, 2003; 14: 8.
6. Vd. Jadhavji Trikamji Acharya Sushruta Samhita Nibandasangraha commentary of Dalhanacharya, Uttaratanttra Adhyaya, Chaukhamba Surbharti Prakashana, Varanasi, 2003; 45: 26.
7. Vd. Jadhavji Trikamji Acharya Sushruta Samhita Nibandasangraha commentary of Dalhanacharya, Chikitsa Sthana Adhyaya, Chaukhamba Surbharti Prakashana, Varanasi, 2003; 1: 65.
8. Vd. Jadhavji Trikamji Acharya Sushruta Samhita Nibandasangraha commentary of Dalhanacharya, Chikitsa Sthana Adhyaya Chaukhamba Surbharti Prakashana, Varanasi, 2003; 1: 95.
9. Vd. Jadhavji Trikamji Acharya Sushruta Samhita Nibandasangraha commentary of Dalhanacharya, Chikitsa Sthana Adhyaya Chaukhamba Surbharti Prakashana, Varanasi, 2003; 2: 101.
10. Vd. Jadhavji Trikamji Acharya Sushruta Samhita Nibandasangraha commentary of Dalhanacharya, Chikitsa Sthana Adhyaya Chaukhamba Surbharti Prakashana, Varanasi, 2003; 2: 101.