REVIEW ARTICLE

A progressive pharmaceutical review on *Sneha Kalpana*

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ABSTRACT

Sneha Kalpana is a group of products of medicated *taila* and *ghrita*. This class of formulations is reported to treat a very wide range of diseases among patients of all age groups. *Sneha Kalpas* manufactured in *Ayurvedic* pharmaceutics are used extensively for medicinal as well as cosmetic purposes. It is one of the widely used techniques in *Ayurvedic* drug industry to achieve solubility of both fat-soluble and water-soluble extractives into the oil medium. It is the only *Kalpana* which is used through all four modes of administration of such formulations, i.e. *pana, abhyanga*, *nasaya,* and *basti.*

Key words: Ayurveda, *Kalpana, Oleaginous medicament, Sneha*

INTRODUCTION

Sneha Kalpana is one of the widely used and preferred dosage forms of *Ayurvedic* system of medicine. It is a pharmaceutical procedure which is followed to produce an oleaginous medicament from the substances such as *kalka, kwatha,* and *drava dravyas*, in specific proportions by subjecting them to a specified heating pattern and duration. By this process, one can ensure transformation of the active therapeutic properties of the ingredients to the solvents, and hence, one can recover fat-soluble as well as water-soluble chemical constituents.[1,2]

CLASSIFICATION OF *SNEHA KALPANA*

Sneha Kalpana is classified into various categories based on different parameters. Those includes as follows -

1. Based on the stage of *paka*: *Ama Paka, Mridu Paka, Madhya Paka, Khara Paka,* and *Dagdha Paka*.[2]
2. Based on the origin y*onies* (sources): *Sthavar* (plant origin) and *Jangam* (fish, quadruped animals, and birds come under this group).[3]
3. Based on the nature of media: *Ghrita Kalpa, Taila Kalpa, Vasa Kalpa,* and *Majja Kalpa*.[4]
   a. "*Goghrita* and *Tila taila*" are considered and advised as one of the best *snehas* among all the *jangama* and *sthavara sneha,* respectively.[5-7]
4. Based on the types of utility: *Pana, Anuvasana, Abhyanga, Shirobasti, Uttarbasti, Nasya, Karnapurana,* and *Dharana*.[2-4,7]

CHRONICLED APPRAISAL OF *SNEHA KALPANA*

Vedas are the source of knowledge and *Ayurveda* is a part of it. *Atharvaveda* mentioned about *pivas paka* and *taila paka*, where *visha dravyas* are used in the processing. In *Yajurveda,* also *Havi* and *Ajya* are mentioned for *Ghrita*.[8]

Samhita Period

Samhita kala is considered as the golden period for *Sneha Kalpana*. In *Brihtrayee*, *Sneha Kalpana* flourished due to its immense use for different purposes ranging from external applications to internal administration through different routes.

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- *Charaka Samhita*[9]
  Primary knowledge of *Sneha* and its properties, source of origin, types, etc., is clearly mentioned. Systematic method of preparation, types of *Snehapaka*, proportions and *Siddhilakshana* of *Sneha Kalpana,* and their uses is discussed in this *samhita*. In *CharakaVimanSthana*, 7th, separately *Sneha siddhi lakshana* is mentioned. Different *kalpas* of *Sneha Kalpana* are elaborated.
- *Sushruta Samhita*[3]
  Sneha Kalpana has been elaborately described in *Susruta Samhita. Acharya Susruta* was the first mention about *Sneha kashayas*. Specific preparations such as *Satdhauta ghrita and Sahastrapaka taila* are also highlighted in this treaty. At *Chikitsa Sthana*, *Acharya Susruta* enumerated types of *Sneha*, process of preparing *Sneha kasaya, Sneha siddhi lakshana*, types of *Sneha paka*, uses of *Sneha,* and evil effects of *Sneha*.
- *Astanga Sangrah and Astanga Hridya*[10]
  Both treatises mentioned *Sneha Kalpana* with some changes from the earlier treatises.

Kashyap Samhita[11,12]

Detailed explanation of *Sneha dravaya*, sources, classification, properties, and dose were mentioned.

Harita Samhita[13,14]

Tila taila properties and its importance are mentioned under *Taila vassa varga*. In 2nd and 4th chapter, the procedure of *taila paka* and types of *paka* with their *lakshans* are explained in detail. He also mentioned time duration for *paka* of *ghrita* and *taila* as 7 and 15 days, respectively.

Bhel Samhita[15]

Taila is mentioned for *mardan* and *ushnodak* as *anupana* for *Chaturvidha sneha*. In *Vimansthana* under *Rasavimanadhyay*, *taila* is referred as the vehicle of choice.

Chakradata[16]

Clinical uses of *tailas* and *ghritas* are mentioned in this text. Different media have been reported to be used in the preparation of *Sneha kalpas*.

Sharangadhara Samhita[17]

Acharya Sharangadhara has discussed details of *Sneha Kalpana* separately in *Madhyam khand* 9th chapter. This treaty deals with the method of preparation, proportions, uses, and types of *paka* and *Snehasiddhilakshana*.

Gadnigraha[18]

Acharya Sodhala devoted separate chapters for *Sneha Kalpana, Tailadhikara*s, and *Ghritadhikaras* in this treatise.

Shastra yoga[19]

The treaty owned by the Kerala *Vaidyas* also elaborated the ratios and different *Ghrita* and *Taila* preparations. 135 *Ghritas* and 96 *Tailas* are mentioned in this treaty.

Bhaishajya Ratnavali[20]

This treatise clearly described about *Snehamurchhana*. Method of preparation of *Sneha Kalpana* is also elaborated by *Acharya* Govind Das Sen.

REQUIREMENTS FOR *SNEHA KALPANA*[21,22]

Sneha Kalpana needs the following constituents:

1. *Kalka dravya*: Fine paste of medicinal plants and minerals should be taken as a *kalka dravya*.
2. *Dravadravya*: Water, *Kwatha*, *Swarasa*, *Kanji*, *Ksheer*, *Dadhi*, *Takra,* etc.
3. *Snehadravya*: Mainly different types of fat containing media such as *Taila* and *Ghee*.

CONCEPT REGARDING THE PROPORTION[3,22]

If the quantity of the ingredients is not mentioned, then the *kalka*, *sneha,* and *dravadravya* should be used in the proportion of 1:4:16, respectively. The ratio of *kalka*, *sneha,* and *dravadravya* mentioned in different classics is given in Table 1.

PROPERTIES OF *SNEHA DRAVYA*[23,24]:

The substance which possesses the properties such as *drava* (liquidity), *sukshma* (minute and capable of penetrating deep), *sara* (flow), *snigdha* (unctuous), *pichchila* (sticky), *guru* (heavy), *sheetala* (cold), *manda* (slow), and *mrudu* (smooth) is *Sneha Dravya*.

GENERAL METHOD OF PREPARATION

SnehaPaka process may be divided into three phases:

1. *SnehaMurchhana.*
2. *SnehaPaka.*
3. *Pakasiddhi.*

Snehamurchhana[24,25]

Before subjecting the drugs to *Sneha paka, Sneha* is supposed to undergo one particular procedure called as *SnehaMurchhana*. It is applied for both *Taila* and *Ghrita*. It is considered as one of the *Samskaras* of *Sneha* and helps the *Sneha* to acquire specific pharmaceutical as well as therapeutic property. In *Brihattrayee*, no reference can be traced regarding *SnehaMurchhana*. *BhaishajyaRatnavali* is the first text, which described the importance and method of *Murchhana* process. *Murchhana* alters the solubility pattern and absorbability, which is desired to get maximum medicinal properties.

Objectives of *murchhana* process

- *Amadoshaharatwa* - removal of "*Ama"* which can be correlated to the "moisture content" which can be directly related to rancidity problems.
- Removal of bad odor of crude *Taila* or *Ghrita*.
- *Sneha* will acquire the capability to receive more active principles.
- Stability of the *Sneha* is also supposed to increase.
- Impart appealing color to the *Taila*.
- May alter the solubility and absorption of the finished product.

Snehapaka[7,26]

After completion of *Tailamurchhana*, *Snehapaka* is carried out with desired drug. Specified amount of *kalka* and *dravadravyas* [Table 2] are added and subjected to moderate heating till the watery portion is completely evaporated.

There are different opinions available regarding the method and time of addition of *kalka* and *sneha* during *Snehapaka*. According to *SusrutaSamhita* and *Astangasamgraha*, *kalka* and *drava dravyas* are advised to mix in *Sneha* and processed. *Acharya* Sharangadhara did not specify the order in which the *drava*, *sneha,* and *kalka* should be mixed. According to the *Keraliyavaidyas* while preparing the *Sneha Kalpana*, first, the *kalkadravya* is mixed in *dravadravya*, then this mixture is poured in slightly heated *Sneha* and *Snehapaka* is done. This will facilitate uniform distribution of active principles in the *Sneha*.

Snehapana siddhi lakshana[27]

- Stoppage of bubbling sounds (*Sneha*).
- Disappearance of bubbles in *ghrita* and appearance of bubbles in *taila.*
- Appearance of clarity in *taila.*
- *Kalka* does not adhere to the fingers.
- *Kalka* attains perfect wick shape when rolled between thumb and index.
- *Kalka*is neither very hard nor very soft.

The preparation of *sneha* is mainly divided into three stages *(paka)*[28]

- *Mridupaka*
- *Madhyampaka*
- *Kharapaka*

AcharyaVagbhatt and *Acharya Sharangadhara* have mentioned two more stages proceeding and succeeding to above three stages, respectively. The *Amapaka* and *Dagdhpaka* are not suitable for therapeutic uses. *AcharyaHarita* mentioned one more stage of *Snehapaka* by the name of *Viseshapaka* which succeeds *Kharapaka*. The characters of various *Snehapakas* and their therapeutic uses are given in Tables 3 and 4.

PRECAUTIONS FOR THE *SNEHA KALPANA*[2,7,21]

There is an essential attention required during *Snehapaka* process. Lack of care may lead to poor quality of end product, loss during manufacturing, or early rancidity of the *Sneha*. Precautions that must be taken while manufacturing *Sneha kalpa* for obtaining a good quality standard finished product are further classified into different stages.

1. Before the process
   - The *Sneha* must be pure, clear, and without slurry.
   - The *Sneha* should be taken after performing *Murcchanasamskara*.
   - The raw material used must comply with its identity, purity, and strength.

Table 1: General and specific ratio of *kalka, dravadravya*, and *sneha dravya*

Ratio	*Kalka Dravya* (Part)	*Drava Dravya* (Part)	*Sneha Dravya* (Part)	Reference
General	1/4th	4	1	*Chakradatta*
Specific	1/4th	4(Water)	1	*Sharangadhara samhita*
	1/6th	4 (*Kwatha*)	1	*Sharangadhara samhita*
	1/8th	4 (*Swarasa, Mansarasa, Dadhi, Ksheera, Takra*)	1	*Sharangadhara samhita*
	1/4th	Up to 4	1	*Sharangadhara samhita*
	1/4th	More than four, all equal to Sneha	1	*Sharangadhara samhita*

- *Tailapatra* should be wide-mouthed and of suitable size. Size of *Snehapatra* depends on the batch quantity and nature.

2. During the process
   - *Madhyamagni* should be maintained throughout the process.
   - The mixture should be stirred in the initial stage for facilitation of homogenous mixing and stirring in a later stage to avoid sticking of *kalka* to the vessel resulting in carbonization.
   - Care should be taken to determine the proper stage of *Snehapaka*.
   - If *SaindhavaLavana* and *KsharaDravya* have to be added to *Sneha,* it has to be added to *Siddha Sneha Kalpa*and then filtered.
   - If *Sarkara* is mentioned in the formula, then it should be added to the final product after complete cooling.
3. After the process
   - To obtain maximum yield, the finished *Sneha* should be filtered in hot condition itself.
   - If *Sugandhadravya* has to be added, then it should be added gently and carefully when the *Sneha* is in a lukewarm condition.
   - If *Sarjarasa*, *Madhu,* and *Wax* have to be added, then it should be added after *Sneha* is filtered in the vessel in which the *Sneha* is to be filtrated.
   - The containers utilized for storage or packing should be free from moisture.

Table 2: Duration of *Snehapaka* in different liquid media[29,30]

Liquid Media	Time duration (days)
Mamsa, Vasa, Vrihi, dhanya	1
Dugdha	2
Swarasa	3
Kwatha, Arnala, Takra	5
Valli, Mula	12

DOSE[2]

Acharya Sharangadhara has mentioned a common dose for medicated *Sneha* for internal use as one *tola* (12 g).

MODERN APPROACH TO *SNEHA KALPANA*

In the modern era, various dosage form utilized by the customer can be devolve as novel drug delivery system (NDDS) for the *sneha kalpana*. Semisolid preparations intended for application to the skin with or without energy. They may be oleaginous or entirely free from oleaginous substances or may be emulsion of fatty/wax. Ointments are composed of fluid hydrocarbons embedded in a matrix of high melting solid hydrocarbons or the preparations in which the medicinal agent dispersed in a fatty base.[31,32] Creams are the semisolid preparations consist of two phases in which one is aqueous or the other is oily/fatty base.[32] Gels are the semisolid preparations in which the high degree of physical cross-linking occurs between the liquid phases constrained with a three-dimensional polymer matrix.[32] Liposomes are the spherical vehicle consists of phospholipids in an aqueous environment. The amphiphilic phospholipids molecules form a cloned bilayer sphere to shield the hydrophobic group

Table 3: Characters of various *Snehapakas* (*Paka sidhhi lakshana*)

Stages of paka	*Kalka*	*Sneha*
Amapaka	Water content (+), cracking sound	Water content (+), cracking sound
Mridupaka	Sticky, traces of water (+), cracking sound	Traces of water (+), cracking sound
Madhyampaka	Non-sticky, free from water content, no cracking sound, *varti* can be made.	Water content (-), cracking sound (-), froth appearance (*taila*), subsidization of froth (*ghrita*), desired color, odor, and taste.
Kharapaka	*Kalka* become hard, rough, darkened, water-free, and dry	Color, odor, and taste may change.
Dagdhapaka	Rough, dry, and black often charred burnt.	Essential contents of *Sneha* particularly loss of color, odor, and taste.

Table 4: Therapeutic uses of *Snehapaka*

Paka	Ch. Sa.	Su. Sa.	A. Hr.	Sha. Sa. and B. R.
Ama	Not mentioned	No therapeutic use	No therapeutic use	No therapeutic use
Mridu	*Nasya*	*Pana*	*Nasya, Pana*	*Nasya*
Madhya	*Basti, Pana*	*Nasya, Abhyang*	*Pana, Basti*	*All Purposes*
Khara	*Abhyanga*	*Basti, Nasya*	*Abhyanga*	*Abhyanga*
Dagdha	Not mentioned	Not mentioned	No therapeutic use	No therapeutic use

Ch. Sa.: *Charak Samhita*, Su. Sa.: *Sushruta Samhita*, A. Hr.: *Astang Hrydyam*, Sha. Sa.: *Sharangdhar Samhita*, B. R.: *BhaishajyaRatnavali*

from aqueous.[33] Ethosomes are the nanovesicles consist of phospholipids and containing a high count of ethanol (20–45%).[34] Phytosomes may be defined as the bioactive component bounds by a lipid or a complex of natural ingredient and phospholipids.[35]

DISCUSSION AND CONCLUSION

Sneha Kalpana is an effective and potent *Kalpana* which may contain water as well as fat-soluble active principles. *Sneha Kalpana* has different therapeutic uses described systematically in Ayurvedic classical literature. *Sneha kalpas* are advised for both *bahya* and *abhyantar prayoga*. *Taila* and *Ghrita* also have specific benefit of nutrition and preserve the drug for longer time. Acaryas have fixed the duration of *Snehapaka* because *mamsa rasa, vasa, vrihi,* and *dhanya* are easily get fetid and impart bad odor within a day due to biodegradation. *Dugdha* also gets spoiled within a day or two. *Swarasa* as such is a thicker media when compared to above two liquid media, and due to daily *paka* process, it may not decayed and it may take longer time period to give out solute active principles to the oleaginous media so the time period of *Snehapaka* 3 days prescribed. 5 days are prescribed when liquid media used for *Snehapaka* are *Kwatha*, *Aranala,* or *Takra*, and their nature to impart chemical constituents may take a longer time. *Valli* (climbers) and *Mula* (roots) are dried and hard substances, these may take as much as 12 days of longer period to give out their therapeutically potent principles to the oleaginous media. Thus, we find a good rationality behind such an approach of our *Acaryas*, with respect to manufacturing time period. Modern sciences are indicating the unique methodology of general, sustain, and control pattern of drug delivery at target which is possible with dosage forms of Sneha Kalpana. Various new technologies are developed where both the aqueous and oily phases are used collectively. There are many research studies performed by scholar where the dosage forms development of *Ayurvedi*c medicated oil in the form of ointment, cream, gel, etc. All the *Sneha kalpas* exhibit better preservation and quality and enhance therapeutic effect with better customer satisfaction as well as compliances. The conversion and dosage form development of various *Sneha kalpas* also helps to resolve the problems associated with handling, packaging, etc. NDDS and transdermal drug delivery system provide a new platform for the development of various medicated preparations mentioned in *Ayurvedic* classical literature. Liposomes, ethosomes, phytosomes, invasomes, and microemulsion are some of the new techniques which consist of liposomal material and having both lipid and water soluble properties as same as the *Sneha kalpa*. This review is aimed at compiling some basic information which may further assist in strengthening the knowledge of academician and researcher those who are intersected in such dosage forms.

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