



## Review Article

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### PHARMACEUTICAL REVIEW OF SNEHA KALPANA AND ITS IMPORTANCE IN AYURVEDA

Choudhary Neelam<sup>1\*</sup>, Rao V Nageshwar<sup>2</sup>

<sup>1</sup>P.G. Department of Rasashastra & Bhaishajya Kalpana, National Institute of Ayurveda, Jaipur, India

<sup>2</sup>Associate Professor, Department of Rasashastra & Bhaishajya Kalpana, National Institute of Ayurveda, Jaipur, India

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#### \*Corresponding author

Dr. Neelam Choudhary, MD (Rasa Shastra & Bhaishajya Kalpana), P.G. Department of Rasashastra & Bhaishajya Kalpana, National Institute of Ayurveda, Jaipur 302002 Rajasthan, India Email: drneelamchoudhary@rediffmail.com

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#### ABSTRACT

Sneha Kalpana is a unique contribution to Ayurvedic science and it ensures the transformation of the active therapeutic properties of the ingredients to the solvents. It is mainly of two types – Ghrita Kalpana and Taila Kalpana. Sneha Kalpana is done in the three phases. The first phase consists of Sneha Murchana, followed by second phase of Sneha Paka and finally there is third phase called Paka Siddhi. This process ensures transformation of the active therapeutic properties of the ingredients to the solvents and hence to get fat soluble, water soluble or even the chemical constituents which are soluble in various media. Here we provide a review of the Sneha Kalpana process and its property of absorbing the principles of drug and stores it for longer period without losing its property.

**Key Words:** Sneha Kalpana, Kalka Dravyas, Sneha Paka

#### INTRODUCTION

The word “Sneha Kalpana” consists of two words ‘Sneha’ and ‘Kalpana’, where Sneha means fats or fatty materials and Kalpana stands for pharmaceutical process of medicaments. Sneha Kalpana may be defined as - ‘A pharmaceutical process to prepare oleaginous medicaments from the substances like Kalka, Kwatha and Drava dravyas, in specific proportions by subjecting to a unique heating pattern and duration to fulfill certain pharmaceutical parameters, according to the need of therapeutics’. In other words Sneha Kalpana is a process where the various forms like decoction, paste, milk and perfuming substances are employed for the preparation of oleaginous medicaments (Oil and ghee). This process ensures absorption of the active therapeutic properties of the ingredients used. Sneha Kalpana, an Upkalpana of both Kashaya Kalpana and Kalka Kalpana, is the process where the active principles of the drug are absorbed into the Sneha (Ghee or Oil)<sup>1</sup>.

In Ayurveda, Sneha is used in four types<sup>2</sup>:-

- Sarpi - ghee
- Taila - oil
- Vasa - fats
- Majja - bone marrow

According to combination: - yamak Sneha, trivrit Sneha, maha Sneha

Sneha Kalpana is done in the following three phases:

- First phase - Sneha Murchana
- Second phase - Sneha Paka
- Third phase - Paka Siddhi.

#### Sneha Murchana

Murchana is the first step towards any Sneha Paka process. Earliest it has been mentioned in Chakradutt Ratanaprabha by Nishchalker but here is just a mention about Murchana but it is better explained in detail in Bhaishajya Ratnavali<sup>3</sup>. It is applicable to both Ghee and Taila.

Main aim of Sneha Murchana is to remove: -

1. Durgandha (Bad odor)
2. Amadhosha (Unrefined)
3. Ugrata (Sharpness)

After Sneha Murchana, Sneha will acquire the following qualities:-

- Good smell and color.
- Potency of Sneha is enhanced so that it can imbibe more active principles from the drug with which it is processed.
- Sneha will take up the active principles present in the Murchana dravyas also.

**Materials:** Sneha Kalpana needs the following materials –

a) Kalka dravya -

Paste of various parts of medicinal plants may be used.

b) Drava dravya -

Water, fresh juice, decoction, milk, kanji, butter milk etc.

c) Sneha dravya –

Sneha Kalpana is of two types like Taila Kalpana and Ghrita Kalpana. Accordingly oil or ghee is used as base. Among oils, Tila taila is commonly used and among ghee, Goghrita is used.

d) Gandha dravya -

To give good odor, perfuming substances like Ela, Twak, Patra, Kakkola, Karpoora, Lavanga etc. may be used, wherever necessary.

**Ratio of Drava Dravyas**

Whenever water, milk and decoction are to be added, it should be taken four times to that of oil. If Kasaya is also present in the Sneha Paka, then milk should be added in equal quantity with Kasaya. If Sneha Paka is to be carried out with curd, equal to Sneha curd is taken and later four part water is added. When Drava dravyas are up to four, each should be taken four times to the quantity of Sneha. If the number is more than four, these should be taken equal to Sneha dravyas<sup>4,6</sup>. When no specific liquid is mentioned for the preparation of Sneha Paka, water should be taken in place of liquid<sup>5</sup>.

**Ratio of Kalka Dravyas**

In general, Sneha and Kalka should be taken in 4: 1 ratio. Ratio of Kalka drugs should be as follows, with respect to Sneha dravyas<sup>6</sup>:

**Table 1: Ratio of Kalka Dravyas**

Jala	4 : 1
kwatha	6 : 1
Ksira, Dadhi, Takra, Swarasa, Mamsa Ras	8 : 1

If Puspa kalka is to be added, it should be 1/8 of Sneha Dravyas<sup>7</sup>. (Sa. Sa. Ma. 9/11).

**Sneha Dravyas**

Sneha is obtained from two sources<sup>8</sup> –

1. Sthavara
2. Jangama

Of the Sthavara Snehas, Tila taila is considered as the best and in Jangama source, Cow's Ghee takes the supremacy.

**Classification:** Sneha Kalpana may be divided under three headings:

1. Based on the Nature of Media: Ghrita Kalpa, Taila Kalpa, Vasa Kalpa, Majja Kalpa, and according to combination: - Yamaka Sneha, Maha Sneha kalpa.

**Table 2: Number of preparation by four Sneha given in Classics**

S.No.	Text	Ghrita	Taila	Vasa	Majja	Yamaka	Maha Sneha
1	Su.Sa.	54	37	-	4	2	1
2	Ch.Sa.	203	78	-	1	1	2
3	A.H.	93	39	1	-	1	1
4	Ch.D.	191	162	1	-	1	-
5	Sh.Sa.	16	30	1	-	-	-
6	Bh. Pr.	61	114	-	-	-	-

Abbreviations: Su.Sa. – Sushruta Samhita, Ch.Sa. – Charak Samhita, A.H. – Ashtanga Hridaya, Ch.D. – Chakradutt, Sh. Sa. – Sharangdhar Samhita, Bh.Pr. - Bhava Prakash.

2. Based on the stage of Paka: Ama Paka, Mridu Paka, Madhya Paka, Khara Paka, and Dagdha Paka.

3. Based on the types of utility: Pana, Anuvasana, Abhyanga, Shirobasti, Uttarbasti, Nasya, Karnapurana and Dharana.

**General ratio for Sneha Paka of Dravyas**

If the quantity of the ingredients is not mentioned, then the Kalka, Sneha, and Drava dravya should be collected in the proportion of 1: 4: 16 respectively. The ratio of Kalka, Sneha and Drava dravya mentioned in different classics is as under<sup>9</sup>.

**Table 3: General and specific ratio of Kalka, Sneha and Drava according to different Acharyas**

Ratio	Kalka Dravya	Drava Dravya	Sneha Dravya	Reference
General	1/4th Part	4 parts	1 Part	Ch.D.
Specific	1/4th Part	4 parts water	1 Part	Sh.Sa.
	1/6th Part	4 parts kwatha	1 Part	Sh.Sa.
	1/8th Part	4 parts swarasa, Mansarasa, Dadhi, Ksheera, Takra	1 Part	Sh.Sa.
	1/4th Part	Upto four, 4 parts	1 Part	A.S.
	1/4th Part	More than four, all equal to Sneha	1 Part	Sh.Sa.

Abbreviations: Ch.D – Chakradutt, Sh.Sa. – Sharangdhar Samhita, A.S. – Ashtang Sangraha.

**Process of Sneha Paka**

Preparation of medicated oils/ghrita using following steps:-

- First the oil has to be subjected to murchana.
- In the second phase, specified amount of Kwatha or other liquids are added.
- In the third phase, the Kalka is added and subjected to moderate heat till the liquid portion evaporates.
- The kalka and the drava are mixed together, Sneha is then added boiled on mild fire and stirred well continuously so that the kalka is not allowed to adhere to the vessel. Sometimes the drava-dravyas are directed to be added one after another as the process of boiling is continued till the drava-dravyas added earlier has evaporated.
- The whole process of Paka should be carried out on a mild to moderate flame.

- After these three phases, when excess of foam appears in the oil and foam disappears in ghee along with the emergence of color, smell of medicaments, then it is considered that the preparation is complete. After this, when the oil is lukewarm, the fine powder of perfuming is added if prescribed<sup>10</sup>.

The above said one is general method of Sneha Paka. If there is special mention regarding the quantity of each dravya, the preparation should be done accordingly.

#### Paka Siddhi lakshana

Paka Siddhi lakshana is the third phase where desired quality of ghrita may be obtained.

The preparation of Sneha is mainly divided into 3 stages<sup>11, 12, 13, 14</sup> -

Stage I- Mrdu Paka (Manda Paka)

Stage II - Madhyama Paka (Cchikkana Paka)

Stage III - Khara Paka (Khara Cchikkana Paka)

Harita adds one more stage of Sneha, Visesa Paka – which succeeds Khara Paka (H. S. 4/4/1). Vagbhata (A. H. Kal. 21) and Sarangadhara (Sa. Sa. M 9/14) mentioned two more stages preceding and succeeding to above 3 stages respectively. i.e. Ama and Dagdha Paka, which are not suitable for therapeutic uses. Vagbhata has named Mrdu Paka, Madhyam Paka and Khara Paka with Manda Paka, Cchikkana Paka and Khara Cchikkana Paka respectively.

**Table 4: Observations in each stage of Paka.**

S. No.	Stage of Paka	Kalka	Taila
1	Ama Paka	- Water content persists (++) - Produce crackling sound on putting to the fire. - Very soft in consistency	- Water content persists (++) -Heterogeneous media of water and oil. - Crackling sound when put on fire
2	Mrdu or Manda Paka	- Sticky on touch - Traces of water (+) - Crackling sound on putting to the fire	- Traces of water (+) - Crackling sound on putting to fire
3	Madhyama or Cchikkana Paka	- Not sticky - Free of water contents - Can be made into varti when rolled between fingers - No crackling sound when put on fire	- Free from water contents. - No crackling sound when put on fire. - Froth appearance (Oil) or Froth subsidence (Ghee) - Good color - Good odor - Desired taste of drugs.
4	Khara or Cchikkana Paka	- Paste is hard - Rough - Blackened - Water free and looks dry	- Color may change - Odor may change
5	Dagdha Paka	- Burnt kalka - Rough, dry, black often charred - Burnt smell	- Essential contents of oil partially lost. - Loss of color. - Loss of odor - Loss of taste

#### Duration of Paka

Sneha Paka should not be completed within a day. Longer the duration of preparation of Sneha, more of the absorption of fat soluble constituents of the ingredients takes place. Duration of Paka depends upon the nature of the liquids added to the Sneha<sup>15</sup>.

**Table 5: Liquid media and duration of Sneha Paka.**

No.	Liquid Media	Days
1	Mamsa Rasa, Vrihi dhanya	1 day
2	Dugdha	2 days
3	Swarasa	3 days
4	Kwatha, Aranala, Takra	5 days
5	Valli, Mula	12 days

#### Precautions for Sneha Kalpana

There is a necessity of utmost care and caution during the preparation of Sneha Kalpana. The improper care may lead into poor quality of end products, loss during manufacturing or early rancidity of the oils. So, following precautions are to be taken:

##### a) Before processing

1. Good quality of oil should be taken which is devoid of impurities.
2. Fresh oil should be selected (Old Ghee in case of Ghrita Paka)

3. The necessary ingredients of good quality should be kept ready.

##### b) During the process

1. The taila Paka should be carried in Mandagni; the intensity of the fire is maintained constant.
2. The mixture is stirred constantly and carefully to ensure that the Kalka does not stick to the bottom of the vessel resulting into carbonization.
3. Care should be taken to determine the proper stages of Sneha Paka.

**c) After Sneha Paka process**

1. After getting the Sneha Pakasiddhi laksanas, the whole contents are gently filtered through a clean cloth; delay will lead into loss of oil, as the Kalka drugs absorb the oil contents.
2. The perfuming drugs should be added gently with constant stirring when the oil is luke-warm.
3. Whenever Lavana and Ksaras are used in the preparation, they are added to the Sneha and then strained.

4. If Sarkara (Sugar) is mentioned in Sneha Paka, it is added to the final product, when it is cooled.
5. The containers should be free from moisture.

**Preservation**

Snehas are preserved in glass, polythene or aluminum containers.

**Therapeutic uses of each stage of Paka****Table 6: Effect of Paka on Therapeutics<sup>16,17</sup>**

S.No.	Name of Pakas	Charak Samhita	Sushruta Samhita	Ashtanga Hridaya	Sharangdhar Samhita	Harita Samhita
1	Ama	-	-	-	-	-
2	Mridu or Manda	Nasya	Oral	Nasya	Nasya	Not mentioned
3	Madhya or Chikkana	Oral and enemata	Nasya and Massage	Oral and enemata	Both external and internal	Internal and enemata
4	Khara or Khara Chikkana	Massage	Enemata otic drops	Massage	Massage	Massage
5	Dagdha	-	-	-	No therapeutic Use	-
6	Vishoshi	-	-	-	Not mentioned	Mentioned and No therapeutic Use

All Acharyas have mentioned to use Mrdu Paka taila in Nasya Karma (Ca. Ka. 12/104, As.Hr.Kal 16/19, Sa. Sa. M. 9/17) But, Sushruta recommends it for internal administration (Su. Ci. 31/16).

Madhyama Paka is considered worth for both external as well as internal administration purposes. But, Sushruta school of thought advice it for Nasya and Abhyanga. KharaPaka, according to Caraka and other scholars, is used for external application; where as Sushruta recommends this for Basti and Karnapurana. In this regard, Caraka's school of thought is found more practically applicable.

**DISCUSSION****Rationality for the duration of Paka**

By the above said classical approach it looks that our Acaryas have intelligently fixed the days for the processing of Sneha. The fresh juices or boiled rice or rice water are such substances which easily get fetid and imparts bad odor within a day because of bio-degradation as well as early decaying. Probably this might have given a good clue to our Acaryas to get finish the oil preparation at the earliest i.e. within a day. Secondly, these are the most dilute ones when compared to other liquid media. Acaryas advocate to complete oil preparation in two days when the liquid media is of milk. As the milk is also a dilute one and simultaneously, get spoiled with in a day or two, Acaryas would have felt to complete the process with in two days. Swarasa as such is a thicker media when compared to above two liquids. Along with that as the Paka continues daily it may not decayed easily. Also, it may take little longer time period to give out solute active principles to the oleaginous media. This might have caused the scholars to consider the process of time period of 3 days for Swarasa. Five days are the prescribed time period for the Sneha Paka, wherever the media used is Kwatha, Aranala or

Takra. Though these are the dilute media, probably their nature to impart chemical constituents may take a longer time period of 5 days. Also, we may believe that longer the period of time of Taila Paka, the more therapeutically potent constituents can be achieved in our formulations. It appears true that as the climbers and roots are the solid, often 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.

**Rationality on Effect of Paka on Therapeutics**

Rationality we can find out here is that Mrdu Paka taila which contain even a little amount of water may act as 'Saumya' and it may not produce irritation to nasal mucosa. Secondly, it may allow only required quantity of oil to absorb in the mucosal membrane of the nose.

Though it may appear vague, the role of water-oil emulsion in the submucosal absorption cannot be excluded, unless and until researches in this regard are carried out. As the studies reveal that active chemical constituents are in its optimum in Madhyama Paka, it is evident that this may help to achieve the desired effect, if administered orally. Simultaneously, chances of reduction in appetite (in Mrdu Paka) or burning sensation in stomach (in Khara Paka) are less possible if Madhyama Paka taila is administered. KharaPaka taila, as it is absolutely free of moisture, quickly absorbed from the skin surface. It was also found true that sesamin and sesamol contents go to its peak in KharaPaka of Tila taila which ultimately provides a better anti oxidative property, which is desired during external application. It is quite natural that Ama Paka, may not give any therapeutic effect as it contain much water content and also having less medicinal properties. Dagdha Paka may not be beneficial for either external or internal purposes as

it possesses least chemical constituents and the chance of producing burning sensation in the stomach is high if administered orally.

### Patra Paka

Patra Paka is the process by which the Sneha is flavored or augmented by certain soluble or mixable substances. The powders of the drugs are placed in the vessel into which fairly warm Sneha is filtered<sup>18</sup>.

### Surya Paka/ Aditya Paka

This is the procedure where the Sneha is prepared by heating and warming through sunlight. In this process no heating is involved.

This is employed in case where Sneha is to be prepared from drug which contain volatile components and heat sensitive principles. The aim of designing this process is to extract fat soluble active principles in low and controlled temperature. e.g.:- kushtharakshas taila, Aditya taila.<sup>18</sup>

### CONCLUSION

From the Review, it can be concluded that Sneha Kalpana is a very effective process and has various advantages. It is used to extract the fat soluble active principles from the raw material, enhance and absorption of drugs, when used topically in fat media. It also has extra benefits of specific Taila /Ghee (Nutritive) which is used to preserve the drug for longer time as it increases the bioavailability of drugs due to its Sukshma, Vyavayee Gunas. Finally, Sneha Kalpas are the only dosage form which can be used both internally as well as externally.

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