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Review Article

A RATIONAL UNDERSTANDING OF *SNEHA KALPANA*

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ABSTRACT

Sneha kalpana is an important dosage form of *Ayurveda* which is helpful in treating wide range of diseases. From the term *"Snih" dhatu* the word "*Sneha"* is derived. *Sneha* means fat or fatty material. From the root word *'Krup Samarthye',* the word *Kalpana* is originated. It denotes specific procedures which help to convert a drug into medicament eg. *Taila Kalpana* and *Ghrita Kalpana*. *Sneha kalpana* is the pharmaceutical process where the fat and water-soluble active principles are extracted from the basic ingredients into *sneha*. *Sneha* is used in all modes of drug administration procedures, including *Pana, Abhyanga, Bhojhana, Nasya, and Basti*. There are several steps involved in the preparation of *Sneha*, including *Poorva karma* (the selection of *Sneha* and other *dravya* i.e., *kalka dravya* and *drava dravya*), *pradhana karma* (*Sneha paka*), and *paschat karma* (filtering of prepared *sneha*). *Sneha kalpana* is discussed in a detailed manner in this article.

Keywords: *Sneha kalpana, Sneha paka, Sneha Sidhhi lakshana, Murchana, Avartana, kuzhambu*

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INTRODUCTION

Rasa Shastra and Bhaishajya Kalpana is a unique branch of *Ayurveda* that deals with herbal, mineral and herbo-mineral preparations, among which *Sneha Kalpana* is an important one. The sources of origin of *sneha* are *Sthavara* eg: *Taila,* and *Jangama* eg: *Vasa, Majja, Ghrita* [1]. *Ghrita, Taila, Vasa,* and *Majja* are the four types of *Sneha.* Due to its peculiar qualities, *"Ghrita"* is regarded as "the best" among them; It easily absorbs the qualities of other medications that come into contact with it. When it comes into contact with another drug or substances, it retains all of its natural properties [2]. *Ghrita Kalpana* and *Taila Kalpana* are the two basic forms of *Sneha Kalpana. Sneha Murchana, Sneha Paka*, and *Paka Siddhi* are the stages in the preparation of *sneha kalpana. Kalpana* is a method, type of modification, or strategy for preparing medicine [3].

Sneha kalpana

The aim of "*sneha Kalpana*" is to absorb the fat-soluble and water-soluble active principles from the *kalka dravya* and *kwatha dravya* in to the *sneha.*

The aims of *Sneha kalpana* are

- To make use of the therapeutic values of oil/ghee.
- To preserve the drug/drugs for a longer time.

One part of "*Kalka dravya*", four parts of "*Sneha dravya*," and sixteen parts of "*drava dravya*" are combined to make "*Sneha Kalpana*." The mixture is boiled until *'Sneha-siddhi lakshana'* are attained [4]. The essential ingredients of *Sneha kalpana* are as follows:

Kalka dravya

In case of fresh and wet drugs *kalka* is prepared by pounding in a *Khalva yantra.* For dry drugs, the fine powder of these drugs is triturated with the necessary amount of water to prepare *kalka* [5].

Sneha dravya

Sneha dravya (oil or ghee) is taken 4 times to that of *Kalka dravya* [6].

Drava dravya

Drava dravya is taken 4 times to that of *Sneha*. The *drava dravya* may be

- Water
- Natural liquids (*Gokshreera, Gomutra*),
- Liquid preparations (*Swarasa, Kashaya*).

General method of preparation

- The ratio of *kalka, sneha* and *drava dravya* is 1:4:16.
- 1 part of *Kalka*, 4 parts of *Sneha* and 16 parts of *Dravadravyaare* taken in a vessel, boiled and reduced to the quantity of *Sneha* [7].

Specific rules of *Sneha* preparation

Rule 1

The quantity of *kalka dravya* differs from the general ratio depending on the different *drava dravya* used [8].

Table 1: *Kalka dravya* and *drava dravya* ratio

Drava dravya	Quantity of *kalka*
Ambu	1/4th
Kwatha	1/6th
Swarasa	1/8th

Examples

- *Jala-Pinda taila, Jatyadi ghrita*
- *Kashaya-Bala taila, Triphala ghrita.*
- *Swarasa-Arka taila, Arjuna ghrita.*

Significance

- *Swarasa* and *Kwatha* are concentrated liquids when compared with *Ambu*. Hence, the quantity of *kalka dravya* taken in *snehapaka* with *swarasa* and *kwatha* as *drava dravy*a is less for *Ambu.*

Rule 2

In the case of *godugdha* (milk), *dadhi* (curd), *mamsarasa* (meat soup), *takra* (buttermilk) used as *drava dravya* the quantity of '*Kalka dravya'* should be 1/8th. However, for appropriate *paka* of '*Sneha'* four times of water is also added [9].

Examples

- *Godugdha-Kshirashatphala ghrita*
- *Dadhi-Kottamchukkadi taila*
- *Ajadugdha-Anu taila*
- *Mamsa rasa-Amrithaprasha ghrita*
- *Brihath Chaagalyadhi ghrita*
- *Brihath Aswagandha ghrita*
- *Takra-Grahanimihara taila*

Significance

- *Dadhi, Mamsarasa* etc are concenterated liquids when compared with *Ambu*. Hence, the quantity of *Kalka* needed for *Snehapaka* will be less for these liquids. However, to facilitate the transfer of active principles from the *drava dravya* in to the *sneha*, 4 times of water also should be added during the *snehapaka.*

Rule 3

If there are five or more "*drava dravya*," then the total quantity of each should be equal that of *Sneha* [10].

Examples

- *Neelibhringadi taila*
- *Drava dravya* are 6-*Neeli swarasa, Bhringaraja swarasa, Aja ksheera, Narikela kshira, Mahishi kshira, Go dugdha.*

Significance

- If number of *drava dravya* are 5 or more than 5 in a *sneha* preparation, then the duration of *Sneha paka* will increase if each of these *drava dravya* is taken 4 times to that of *sneha.* Therefore, each of *drava dravya* should be taken equal to that of *sneha.*

Rule 4

If *drava dravya* are not mentioned in any of the *Sneha* preparations, water is to be used as a *drava dravya.* It should be four times the quantity of *sneha* used [11].

Example

- Water as *Drava dravya* in *Pinda taila.*

Significance

- To facilitate the transfer of active principles from the *kalka dravya* in to the *sneha dravya,* water should be added (though no *drava dravya* is mentioned).

Rule 5

If only *'Kwatha dravya'* is mentioned in a *sneha* preparation, then *'Kalka'* of same drugs may also be added during the *snehapaka* [12].

Example

- *Kethakimuladi taila*

Significance

The *Kalka* of the same drugs (taken for *kwatha*) may be added during the *snehapaka* to enhance the potency of *sneha*.

Rule 6

If *'Kalka'* is not mentioned in a*'sneha kalpana'*, there *sneha* may be prepared without *kalka* [13].

Examples

- *Nirgundi taila*
- *Nirgundi patra swarasa, Tila taila.*

Significance

Swarasa alone is taken as *drava dravya* which is already a concentrated form. Therefore, there is no need to add *kalka.*

Rule 7

If *'Puspa kalka'* is present in the preparation, it should be taken in 1/8th part to that of *'sneha'* but not as per general ratio [14].

Example

- *Vasa ghrita.*

Significance

Flower being the reproductive part of the plant has high nutritive value and is more potent, hence it is taken in less quantity.

Specific time duration for *Snehapaka*

The duration of *Sneha paka* varies with the *drava dravya* taken.

Table 2: Showing specific time duration for '*Snehapaka*' [15]

Drava dravya	Time required
Mamsarasa	1 d
Milk	2 d
Swarasa	3 d
Takra, Dadhi, Kanji, Gomutra	5 d
Roots, Creepers, Climbers	12 d

Significance

- *Mamsa rasa* easily get foetid and impart a bad odour within a day or two.
- *Dugdha* also gets spoiled within a day or two.
- *Swarasa* may take longer time period to give out active solute principles to the oleaginous media so the time period of *snehapaka* for 3 d is prescribed.
- 5 d are prescribed when liquid media used for *Snehapaka* are *Kanji, Takra, Dadhi* and *Gomutra* as their nature to impart chemical constituents may take a longer time.
- *Valli* and *Mula* are dried and hard substances; these may take as much as 12 d to give out their therapeutically potent principles to the oleaginous media.

General dosage and adjuvants

One *pala* (48g) is the general dosage of '*Sneha Kalpana'* administered along with suitable adjuvants like warm water, honey, sugar, medicinal powders, decoctions etc.

Pharmaceutical aspect of *Sneha kalpana*

It includes *Murchana* of *sneha* and *snehapaka.*

Sneha murchana

Sneha Murchana is one particular procedure which is done on *sneha* before subjecting the drugs to *Snehapaka.* It is applied for both *Taila* and *Ghrita.* There are no references regarding *Sneha Murchana* in *Brihattrayee.* The importance and method of *Murchana* process is described for the first time in *Bhaishajya Ratnavali* [16].

Taila murcchana

Ingredients of *Taila murcchana* are taken in the following ratio.

- *Tila taila* taken as one part.
- $1/64^{th}$ part each of the following drugs such as *Manjista, Haridra, Hrivera, Lodhra, Musta, Nalika, Triphala, Suchipushpa mula rasa, Vataankura*.
- The quantity of *Jala* is equal to the quantity of *taila* [17].

Procedure

- *Tila taila* is heated till it is free from froth. *Kalka* is added to it.
- Water is also added and the mixture is boiled on moderate heat till the *tailapaka* remains.
- It is filtered, stored and used for further pharmaceutical use.

Ghrita murcchana

Ingredients and quantity of drugs taken for *ghrita murcchana* are 1 *pala* each of *Pathya, Dhatri, Vibhitaki, Jaladha, Rajani, Matulunga swarasa.* 1 *prastha* each of *Ajya* (ghee) and *Jala* is to be taken [18].

Procedure

- The ghee is taken in a vessel and heated over mild fire. *Kalka* is added to it.
- Water is also added and is boiled until all *sneha siddhi lakshana* appear and only the *ghrita* part remains.

Significance of *sneha murcchana*

- *Amadoshaharati*-removal of "*Ama*" which can be correlated to the "moisture content" and directly related to rancidity problems.
- *Durgandham vinihanthi*-Removal of bad odour of crude *Taila* or *Ghrita.*
- *Sneha* will acquire the capability to receive more active principles, the Stability of the *Sneha* will increase, *Murchana* will give good odour and colour to the *sneha.* It may also alter the solubility and absorption of the finished product [19].
- The research works signify that the *murcchana samskara* of a ghee/oil decreases the Acid value and increases saponification value. The reduced acid value indicates less percentage of free fatty acids or in other words stable nature of fatty acids. A medicated ghee/oil preparation containing low molecular weight fatty acids get absorbed fast.

Hence, it is clear that by *murcchana samskara* the oil/ghee preparations are made more stable and quickly absorbable into the system [20].

Mridupaka

- The "*kalka*" in this *paka* will be extremely soft to the touch and will have very little moisture remaining in it. It is possible to prepare soft *varti.*

Madhyamapaka

- The '*kalka*' will be devoid of moisture. Perfect *varti* can be prepared.

Kharapaka

- In this *paka,* the '*kalka*' is devoid of moisture content and hard to touch.

Amapaka

- *Amapaka sneha* will be *guru* in nature and devoid of any potency. It should not be used for therapeutic purposes as it will cause *agnimandya*.

Dagdhapaka

- *Dagdhapaka sneha* is unfit for therapeutic use and causes *daha.*

Table 3: Types of *Snehapaka* [21]

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.
Madhyamapaka	Non-sticky, free from water content, *varti* can be made no cracking sound.	Water content (-), Cracking sound (-), Froth appearance (*taila*), Subsidization of Froth (*ghrita)*, desired colour, odour and taste.
Kharapaka	*Kalka* become hard, rough, darkened, water-free, and dry.	Colour, odour and taste may change.
Dagdhapaka	Rough, dry, and black often charred burnt.	Essential contents of *Sneha* particularly loss of colour, odour and taste.

Utility of various *Snehapaka* according to *Acharya Charaka*

- *Ama, Dagdhapaka*-Discarded/Not recommended for therapeutic use.
- *Mridupaka–Nasya*
- *Madhyamapaka-Pana, Basti*
- *Kharapaka–Abhyanga* [22]

Significance of *snehapaka*

- In our classics *Mandagni* is said to be maintained throughout the process. The duration of *Paka* period depends on the nature of the *kalka dravya* used, the nature of *drava dravya* and the concentration of *drava dravya,* which will facilitate the extraction of maximum active principles from the drug into the *sneha*. *Phenodgama* in case of oil and *phenashanti* in the case of *ghee* are mentioned as *sidddhi lakshana*. Oil which contains unsaturated fatty acids upon hydrogenation produces excessive foam. On completion of *Paka,* it undergoes conversion from unsaturated fatty acids to saturated fatty acids [23].

- The reason behind the appearance of froth in oils and its disappearance in *ghrita* while preparing *Sneha kalpana* lies in the structural difference between both oil and *ghrita* and further reaction which goes on in them after *agni samskara* [24]. Both *Phenodgama* and *Phenashanti* are physical phenomenon of surface tension. *Kharapaka* is good for external applications because it is totally devoid of moisture content. Hence it is easily absorbed through the epidermal cells.

Sneha siddhi lakshana

Confirmative tests for completion of *snehapaka*:

- When *Sneha kalka* is rolled between the thumb and index finger, it forms the "Perfect wick shape".
- No sound is produced if a part of *kalka* is put into the fire, indicating the 'loss of moisture' in it.
- When the preparation is finished, foam appears in the *"tailapaka"* and disappears in the *"ghrita paka."*
- Desired colour, odour and taste of the ingredients become marked when *paka* is completed [25].

Precautions for *Sneha kalpana*

During the preparation of *Sneha Kalpana,* utmost care and caution is needed. Inadequate maintenance will result in poor quality of finished goods, manufacturing losses, or early rancidity. Hence, the following safety measures must be performed.

Before processing

Good quality of all the ingredients should be kept ready.

During the process

The *tailapaka* should be carried in *Mandagni;* the intensity of the fire is

maintained constant. In the initial stage, the mixture should be stirred for the facilitation of homogeneous mixing and stirring in later stages to avoid sticking of *kalka* to the vessel resulting in carbonization. Proper care should be taken to determine the stages of *Snehapaka.*

After *Snehapaka* process

- To obtain the highest yield, the entire contents are carefully filtered through a clean cloth after obtaining the *Sneha paka siddhi lakshana.*
- When the oil is lukewarm, the *sugandha dravya* should be slowly added with constant stirring [26].

Packing: *Sneha* are packed in air-tight containers.

***Gandhapaka* (*Patra paka*)**

Sneha is flavoured by certain selected '*gandha dravya'* is known as *Gandhapaka.* The 'fine *kalka'* of such drugs are placed in the vessel into which the warm prepared *Sneha* is filtered. The *Sneha* is later filtered once more and packaged into suitable containers after cooling..

Gandhapaka dravya

Gandha paka dravya includes *Samanga, Kunduru, Nakha, Karpura, Kankola, Turuska, Nalika, Sprikka, Jatikosa, Kumkuma, Tvak, Kasturi*. These should be used after completion of *snehapaka* in order to have an aromatic smell [27].

Avartana

Repetition, doing something repeatedly, or stirring or churning something are all definitions of the term *avartana.* Therefore, it is the process of continuously adding properties. This potentiates the final product; to achieve the maximum benefit of the drug. *Sneha* which is subjected for repeated processing *(paka*) along with *kalka dravya* and *drava dravya* is called *Avartita Sneha*.

Method of preparation

The general procedures of *Sneha Kalpana* are followed to obtain *Sneha. Kalka* and *Drava dravya* are added for the second *Avarthy* and *Sneha paka* is done. Number of such repetitions would determine the number of *Avartana.* Variation in consistency, colour and odour of the product may be observed after each *Avartana.* Examples of *Avartayukta Sneha Kalpana* are as follows:

- *Satapaka-Sahasrapaka Bala taila*
- *Satapaka Yastimadhu taila*
- *Sahasrapaka taila*
- *Satapaki trivrit taila*
- *Ksheerabala taila* 101 [28]

Advantages and disadvantages of *Avartita sneha*

Advantages of *avartita sneha* are:

- The reduced dosage.
- Quick action.
- Good clinical efficacy.
- Easy drug administration.
- Easy packing and marketing.

Disadvantages of *avartita sneha* are

- Higher cost.
- Long time for preparation.
- More fuel.
- More manual labour [29].

Kuzhambu

Kuzhambu is a traditional preparation in Kerala, and is a special and evolved form of *Sneha Kalpana*. It is an oily preparation like *Taila Kalpana*, but here base of this *Kalpana* consists of *Tila taila, Eranda taila,* and *ghrita* in specific proportions. It is exclusively used for external applications and prepared by the permutation and combination of *mahasneha.*

Kuzhambu is a combination of three *sneha dravya*. In the *Ayurveda* classics there is no direct reference to *Kuzhambu. Kuzhambu Kalpana* is more *Vatahara* action than the *Taila.* By doing this procedure Viscosity of the *Sneha* will increase. There will be no change in the ingredients but only in the *Sneha dravya*. The rate of absorption is higher than the use of single *sneha* and it is highly effective. Even though *Kuzhambu* is used mainly for *Vata-vyadhi*, it also possesses *tridoshahara* property. It acts as a *Pushtikara* and *Bala vardhaka*.

Examples of *kuzhambu*

- *Kottamchukkadi kuzhambu*

Sneha dravya-Eranda taila, Tila taila, Goghrita

- *Dhanwantharam kuzhambu*

Sneha dravya–Eranda taila, Tila taila, Goghrita [30]

Significance of *Avartana* and *Kuzhambu*

- *Avartana* results in molecular changes makes them more complex leads to increased penetration at the tissue levels. *Avartita* medicines are highly beneficial in neurological diseases, rheumatological diseases etc. where maximum penetration of medicines occurs results in curing the disease [28].
- *Kuzhambu* has high therapeutic potential when compared to single *taila* preparations, because of its thicker consistency, heat retaining capacity and lubricating nature. During its application it helps in increasing blood circulation and rate of absorption and penetration of drugs and thus has greater therapeutic value [30].

Sneha kalpana* with *rasa dravya

- *Kushtarakshasa taila* is a *yoga* in *kustaroga chikitsa*. The ingredients are *Shuddha Parada, Shuddha Gandhaka, Sindhura, Haratala, Tamra, Manashila* [31].
- *Kasisadi ghrita*–The ingredients are *Kasisa, Manashila, Haratala, Gandhaka, Sindhura, Kampillaka* [32].
- *Vranarakshasa taila* is a *yoga* in *Vrana sotha chikitsa*. The ingredients are *Shuddha Parada, Gandhaka, Haratala, Manashila, Tamra bhasma* [33].

CONCLUSION

Sneha kalpana is a unique dosage form of *Ayurveda* in which both lipid and water-soluble active principles are extracted. It is a very frequently used liquid dosage form and administered through all the routes of our body. *Avartita sneha* helps to prepare a potent oleaginous formulation of desired potency. Each 3 drugs in *Kuzhambu* have its own role in the combination. It has greater application in therapeutics specially as external application. Hence, *Sneha kalpana* is the most important dosage form which yields major therapeutic effects. It has greater application in therapeutics specially as external application.

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CONFLICT OF INTERESTS

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