

## AVALEHA KALPANA: SEMI SOLID AYURVEDIC FORMULATION

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**Corresponding author:***Adi Dev Bharti: adisops@gmail.com***Article Info:****Received: 27-11-2022****Revised: 05-01-2023****Accepted: 04-02-2023****ABSTRACT**

Rasa shastra and Bhaishajya Kalpana in Ayurvedic medicine relate to compositions made from materials of plant, animal, mineral, and metallic origin. The most popular supplementary dose type is an Avaleha Kalpana (medicament semisolid concoction), which is made by boiling the prescription medication using jaggery, sugar, or sugar candies (decoction). Sushrut, Vaghbhat, and Acharya Charak are all employed as a rejuvenator. Simply because of its effortless dosing, consumer acceptability, and prolonged shelf life, it is growing more and more renowned every day. Drug administration via the oral transmucosal pathway has always demonstrated tremendous potential for both regional and localization. Avaleha form could be contrasted to British Pharmacopoeia confection or electuaries conserves. Confection form is the method of blending insoluble granules into a paste with sugars, syrup, and honey in order to deliver significant amounts of them into a delectable form. The notion of Avaleha Kalpana (medicated semisolid preparation) was examined in this study using sources such as Ayurvedic literary works, periodicals, The Ayurvedic Formulary of India, The Ayurvedic Pharmacopeia of India, and others.

**Keywords:** Avaleha Kalpana, Semi solid, Jaggery, Prakshepa Dravya, Vishesha Prakshepa.**1. INTRODUCTION**

Ayurvedic pharmaceutics' Avaleha, often referred to as Leha, is a semi-solid dose form intended for internal use. This kind of preparation goes by the term of rasakriya. It is prepared by heating it along with fluids including prescription medicine decoction or juices after adding jaggery, sugar, or sugar candy. You could use an additive in addition to it. The medical semisolid formulation described as Avaleha Kalpana does have the possibility to be categorised as a neutraceutical due to its use in preventive care, therapeutic approaches, and for healthy individuals to maintain their health [1,2]. This mixture is referred to as Avaleha since it is intended to be licked. People of all ages frequently utilise the medication known as Avaleha Kalpana. The numerous types of avaleha and the best ways to employ them to cure different ailments are covered in the Ayurvedic Samhita. Avaleha Kalpana has been detailed in the Charaka Samhita, Vaghbata Samhita, Sharangdhara Samhita, etc. More challenging to work with than the Avaleha Kalpana are the Churnas, Asava, and Arishta Kalpana. Avaleha Kalpana is also simple to make. Upakalpana of Kwatha Kalpana is Avaleha Kalpana.

The solid product which is created by removing the water from an aqueous phase (Swarasa, Kwath, Hima, and Phanta) is known as avaleha or leha, and the process that creates it is known as rasakriya, as per Acharya Sharangdhara. In particular, Bhaishajya Kalpana, which addresses the formation of pharmaceuticals, is split into two different formulation categories: main formulations and secondary formulations. Swarasa (expressed juice), Kalka (paste), Kwatha (decoction), Hima (cold infusion), and Phanta are the names of the five main preparations (Hot infusion). The Secondary formulations include, among other things, medications like Avaleha Kalpana (Medicated Semisolid Preparation), Asavarista Kalpana (Medicated Fermentative Preparation), Sneha Kalpana (Medicated Fatty Preparation), and Ksheerapaka Kalpana (Medicated Milk Preparation). Due to the fact that they are created by mixing one or more core formulations with additional ingredients, these are known as secondary preparations [2,3].

The word "Avaleha" is derived from the expression "lih-aswadane." Foods which fall under the general category of "Leha" are Peya, Leha, Bhakṣya, and Chavya. Leha is one of them and is eaten by licking because it tastes good. The metabolic process and absorption of avaleha start in the tongue since there is enough amount of sweetening ingredients such glucose, fructose, and others. Avaleha can be regarded as an Upakalpana of Kwatha because Acharya Sharangadhara gave great focus to Kwath throughout his teachings [3]. Due to its great nutritional content and compatibility with a balanced diet, avaleha is quickly becoming relevant in today's era.

The words Leha, Prasha, Khanda, Lehya, Rasakriya, Ghana, and Modaka are a few that may be used interchangeably with Avaleha. The quantity of sugar syrup viscosity determines how well these phrases are termed. Leha can be consumed by licking, whereas Prasha, Khanda, and Modaka must be chewed.

## 2.SIGNIFICANCE

- a. Compared to the Panchavidha Kashaya Kalpana, the Avaleha Kalpana seems to have a longer shelf-life duration, which also indicates that it is more stable.
- b. Due to the presence of sweetening chemicals, it is more palatable, and as a result, both children and adults will have no trouble consuming it.
- c. Certain traditional medications, such as Asava and Arista, cannot be used for an extended period of time because of their Tikshna and Laghu properties; however, using Avaleha for an extended period of time does not have any negative effects on the body.
- d. Madhura Dravya and Sneha Dravya are both included in Avaleha Kalpana; the two ingredients act together to extend the product's shelf life and avoid spoilage.
- e. Avaleha Kalpana has applications such as Vajikaran and Rasayana, and it can be employed both when an individual is feeling well and when they are sick. Several Acharyas have advised their sufferers to use Chayavanprashavaleha, Branha Rasayana, and other medicines that have been found to get some apoptotic properties [3, 4].

## 3.HISTORY

Avaleha Kalpana dates back to the Vedic period and has been practised for a very long time. Avaleha Kalpana is found in the Vedic period as "Haviprasha Kalapana". The Avaleha Kalpana can be found in a number of different sthanas in the Charak Samhita, such as follows: Sutra Sthana - Snehavicharana, Sharira Sthana - Shishuprashan Vidhi, Chikitsa Sthana - Rasayana and Vyadhi Pratighata Chikitsa, Kalpa Sthana - 60 yogas are mentioned, Use of avaleha in panchakarma is discussed in Siddhi Sthana. The Avaleha Kalpana is described in the Sushruta Samhita in a variety of Sthanans, including the Sutra Sthana, the Sharira Sthana, the Chikitsa Sthana, the Kalpa Sthana, and the Uttar Sthana. Astanga Hridya describes Avaleha Kalpana in a few of its Stahanas. These Stahanas are Sutra Sthana, Sharira Sthana, Kalpa Sthana, Chikitsa Sthana, and Uttartantra. In Astanga Hridaya, Avaleha Kalpana has also been mentioned for several disorders as kapharoga, Garbha Vyapat, Rakta-Pitta, Tridoshaja Kasa, Swasa, Hikka, Arsha etc. The process of preparing Avaleha in conjunction with Siddhi Lakshana has been described. Avaleha kalpana has been detailed in Madhyama Khanda and Uttar Khanda of Sharangadhara Samhita [4,5,6].

The comprehensive explanation of Avaleha Kalpana, known as Madhyama khanda, includes its explanation, the technique of its manufacture, the instruction for its use, the recommended dosage, as well as instructions for its protection and storage. According to Acharya Sharangadhara, the signs of Avaleha are things like Swasa, Kasa, Hikka, Urograha, Jwara, and Rakta-pitta, among other things. According to Uttar Khanda, the use of Avaleha has been recommended for a variety of conditions, including Netravikara, Timira, Arsha, Akshidaha, and Raktabhishyanda, amongst others [5,6]. In the Bhava Prakasha and the Purva khanda, there is an explanation of the formulation procedure as well as exams to ensure its flawlessness. Uttar khanda has several of the conditions for which Avaleha is recommended as a treatment.

## 4.CLASSIFICATION

It is separated into four categories according to the degree of its uniformity namely Phanita, Rasakriya, Avaleha, and Ghana. They are categorised according to the percentage of solid and liquid each one possesses. The viscosity of each of these increases as you move down the list. These examples of solidity and fluidity mostly demonstrate the following points: Viscosity, the content of sugary compounds, and the proportion of solid substances are three important measurements. Both Rasakriya and Ghana are highly concentrated forms that can be made by distilling aqueous solutions. On the other side, Avaleha, Khanda, and Modaka are all concentrated versions of sweet compounds that are found in aqueous solutions. There are two distinct varieties of avaleha, each of which is distinguished by the manner in which it is prepared [6,7].

1. The kwath (decoction) or swaras (juice) of the medications are mixed with sugar or guda (jaggery), and then the mixture is continually heated until paka siddhi lakshana, which means up until thick lehya form. After this, prakshepa dravyas are added, such as vasavaleha.
2. After mixing sugar or guda (jaggery) with water, a syrupy mass is made by boiling the mixture until it reaches the point where it produces extensions that resemble threads when pressed and pulled between the thumb and the

index finger. After that, the principal medications are put into the syrupy mass, and then the mixture is heated till it reaches paka siddhi lakshana. Finally, prakshepa dravyas like Chyavanprashavaleha are put in [7].

## 5. PREPARATION OF AVALEHA FORMULATION

### 5.1 Ingredients

1. Asneha Pradhana, Drava Dravya (liquid vehicles) (aqueous media) Avaleha is most usually made with two liquids: kwatha, a decoction, and swaras, a juice. However, cow milk and urine are also occasionally used. Milk, cane juice, grain decoction (Yusha), panchamula decoction, vasa, and similar concoctions are examples of effective vehicles, according to Acharya Sharangadhara. In addition to preserving leha and giving it a softer texture, ghrita and taila are used as preservatives, along with Sneha Pradhana (fatty media). The precise Sneha Dravya and Sneha Dravya mixture used in the production of Avaleha are determined by the doshas associated with each ailment [7,8].

2. Madhura Dravya (Sweetening Agents): Avaleha Kalpana is made using a variety of sweeteners. These sweetening ingredients give Avaleha its distinctive qualities. Whether in the form of mono- or disaccharides, sugar has the potential to chemically interact with water, preventing organisms from accessing the water. This process allows the preparation to be kept for a very long time. They taste better due to being sweeter, which contributes to the medication being more tolerable. They naturally contain carbohydrates, making them a source of fast energy. Because the components are selected based on how the doshas are balanced, each Avaleha uses a unique combination of madhura dravyas. Here are some illustrations of madhura dravya for each of the doshas - Vata dosha is cured by jaggery (guda), Pitta by sugar or sugar candy (sharkara) and Kapha with honey (madhu) [9, 10].

In the event that the quantities of any of the dravyas are not given, the following ratios should be used for producing avaleha: Any drava dravya (liquid) should be divided into four parts, sita (sugar) four parts, guda (jaggery) two parts, and churna (powder) one part.

3. Aushada dravyas: Powdered medications, which are high in volatile components and enhance the flavour of avaleha, are used.

4. Prakshapa Dravya (condiments): The name "Prakshepa" was created by prefixing the dhatu "Kshepita Prerne" with "Pra." Prakshepa dravyas play a specific function in the Avaleha Kalpana method since they serve as deepana, pachana, ruchikara, rasayana, etc., enhance Avaleha's therapeutic efficacy and properties, and increase the herb's absorption in human bodies. There are two distinct types of Prakshepa Dravyas: Samanya Prakshepa and Vishesha Prakshepa.

(i) Samanya Prakshepa: Common cures, also known as Kashthaushadhi, are referred to as Samanya Prakshepa (herbal pharmaceuticals). Avaleha has these Kashthaushadhi for a variety of reasons. Deepana and pachana dravya are the roles played by Sunthi, Maricha, and Pippali, respectively. Despite the Avaleha's inclusion of guda, or sugar, similar to that of madhura dravya, and ghee, similar to that of sneha dravya, these ingredients help the body digest it more easily. Amalaki and Haritaki, among other medications, have the Rasayana quality, which is why they strengthen the body. Some medications, like Kasturi, Twak, Ela, Patra, and Nagkesar, among others, have a potent odour, which is why it acts as a Ruchikara.

(ii) Vishesha Prakshepa: These are the infrequently used medications, such as honey and metallic preparations (Rasaushadhi). When talking about those metals, Bhaskas, such as the Lauha Bhaska in Vidangavaleha and others, come into action. When adding honey, wait until the avaleha has completely cooled since as the temperature reaches 70 °C, honey begins to break down. Although the Charaka Samhita cautions that honey can be exceedingly deadly if combined with ghrita in an equal amount or if consumed in a hot climate, humans find honey to be quite useful [8,9].

Trikatu and other herbal treatments known as Kashthaushadhi are used often as medications. Rasaushadhi, commonly referred to as metallic medicines like bhasma, are among the more uncommon types of cures [11, 12].

### 5.2 Equipments:

1. A wide-mouthed vase composed of stainless steel or another metal with a tin interior.
2. A sturdy spatula for combining the materials while cooking
3. A thin fabric or strainer.
4. In Ayurvedic pharmacies, these kinds of medications are prepared on a big scale using high - pressure steam jacketed tanks for heating, electrically operated mixing equipment or electric blender for blending, mechanically operated sifters for sifting, and duplex filters for filtering.

### 5.3 Method of preparation

The medications mentioned in the formulation, a broad stainless steel container, a coarse sieve, and a sturdy spatula for combining the medication while preparations are the instruments needed to make Avaleha. Extremely steamed jacketed containers are employed for warming, electrically powered mixing equipment is utilised for mixing, and mechanized sifters are employed for sifting in companies for mass production [8, 9].

#### 5.4 Process of preparation

The sweetening ingredients, such as Guda, Sarkara, and Khanda, are combined and cooked over a low flame in a cleaned stainless steel container before the Kashaya or Swarasa is ready. To get rid of the physical contaminants found in the sweetening ingredient, the mixture should be strained through a dry double-layered filter. The filtrate is once more heated and decreased to a thicker thread-like consistency over low heat. Just prior to achieving the Paka lakshana, ghee or oils are poured to the recipe. After achieving Paka lakshana, the container is removed out of the heat, and a fine powder of therapeutic medications (Prakshepa churna) is introduced little by little and thoroughly agitated to create a uniform mixture. The mixture is then allowed to cool. After cooling, honey is poured, and the finished item is packaged and maintained in drying, airtight, broad mouth inert vessels [9].

Different avaleha uses different methods which are as follows:

Manibadra Gulam avaleha is prepared by - Anagnisidham (without heat) - by combining all the medications while Chyavanaprasha avaleha uses - Amalaki made into a paste and fried in ghee and oil, after removing the seeds. Agastya Rasayana is prepared by Hareetaki paste fried ghee and oil and Kushmanda Avaleha and Soorana Avaleha is based on Small pieces of crushed Kushmanda after taking Swarasa, fried in ghee until it becomes a golden brown colour.

Chyavanaprasha avaleha utilises Amalaki formed into a paste and fried in ghee and oil, after removing the seeds, whereas Manibadra Gulam avaleha employs Anagnisidham (without heat) - by combining all the medicines. Kushmanda Avaleha and Soorana Avaleha are made from small pieces of crushed Kushmanda that have been given Swarasa and are then fried in ghee until they turn a golden-brown colour. Agastya Rasayana is made from Hareetaki paste that has been fried in ghee and oil [9,10].

#### 5.5 Important measures during preparation:

For the making of Swarasa, fresh raw components should be employed. Wet ingredients must be incorporated into the dry ingredients in a proportion of two to one. Kashaya ingredients must be put as coarsely ground powders. Potable water should also be utilised. Ghee and oil of guaranteed quality should be utilised, and medicines used as Prakshepa should be coarsely crushed. Among the primary process, stage safety precautions are 1. Ensure that the flame remains hot during the operation. 2. The container should not have a lid on it while making Kashaya. 3. The pulp must be deep-fried till it turns dark - brown and is completely dehydrated. 4. At Tantupaka step fried pulp should be added. 5. Appropriate blending should be done to guarantee that the Prakshepa churna is spread equally through out mixture. Safety precautions at the post-processing step include Honey shouldn't be used until the mixture has cooled. The product packaging must be nontoxic, spotless, and have a broad opening [11,12].

##### 5.5.1 Addition of Prakshepa Dravya

According to the Ayurvedic formulary of India, the fine powder of Prakshepa Dravya must be added in tiny quantities and mixed repeatedly to make a smooth paste. After Paka Siddhi Lakshana, add powdered Prakshepa Dravya and heat briefly. If a composition contains extra powdered medications, add them gradually while warming at mandagni. If powder medications are little, combine them after withdrawing the container from the fire. After removing the container from the fire, crushed Prakshepa dravya is combined. Most Prakshepa Dravya medications contain volatile oil that evaporates at high temperatures.

1. Purva Karma: fresh drug must be used for Leha preparation from Swarasa. To make Leha from Kwath, utilise dry medicine powder (Yavakutta Churna). Sometimes Leha is produced from Dravya Kalka, as in Vyaghri Haritaki Avaleha and Chyavanprashavaleha.
2. Pradhana Karma: This Kwath or swarasa is heated with mild to moderate heat and regular stirring. Paka Siddhi Lakshana stops heating.
3. Pashchat Karma: After Paka Siddhi Lakshana obtained, Prakshepa Dravya are poured to Leha by stirring. After cooling leha, it must be placed in broad mouth jar that is clean and sealed. To store Avaleha, use glass or food-grade plastic containers and identify them with the manufacturing date, name, dose, etc. After obtaining these Lakshanas, get the avaleha. These really are Avaleha preparatory test. Scholars divide Lakshanas into two groups [11,12].

##### 5.5.2 Paka lakshnas

Asannapaka- All of those are signals the paka is almost done. Avaleha adheres to the stirrer in Darvi Pralepatvam. Tantunatvam means Avaleha should be a thread-like rod. Apsumajjanam shows Avaleha poured in water should not spread. Not soluble in water. Sthiratvam denotes Avaleha must stay stable when shake and Patite Na Shiryatvam means It won't spread when dropped. Paka Siddhi- Paka is complete and heat must be turned off. Also, Pidite mudra gives finger prints when pushed. Sukha marda: Avaleha should be supple when brushed between fingertips. Sukha sparsha means softness. Gandha Vama Rasobhava means good smell, colour, and taste [12,13].

## 6. STORAGE, PACKAGING AND LABELLING INSTRUCTIONS

### 6.1 Storage condition

Avaleha must be stored in wide-mouth glass or porcelain. It does not react with metal or plastic containers. The Avaleha lasts one year.

### 6.2 Dose

Dose is 6 to 12 g Avaleha used for Rasayana, thus its dose must not coincide with the diet. Avaleha dose varies by ailment, Prakriti, body strength, age, etc.

### 6.3 Administration and time

Avaleha can be given with milk, sugarcane juice, yusha, panchamula kashaya, vasa kwath. Avaleha may also be consumed with other liquids. Avaleha's administration time (kala) depends on the ailment or dosha. Avaleha must be given at night in Kaphasthangata Urdhvajatrugata Roga since kapha rises at night and aggravates symptoms. Nighttime Avaleha reduces Kapha and its effects. Adhobhaga roga give avaleha prior eating [14-16].

## 7. AVALEHA AND CONFECTIONS

Avaleha is like candy or B.P. electuaries. . They turn insoluble particles into appetising pastes with sugar, syrup, or honey. Confections or electuaries were once a common way to provide treatments, but they've been replaced by preparations containing active plant ingredients separated from inert cells and other unpleasant stuff.

Confections are indeed an old way to administer medicine, but few are popular. They're a smooth paste flavoured with a sugary or mucilaginous liquids. Conerves, jams, and electuaries administer medications similarly.

(1) By boiling sugar solution.

(2) Using honey or sugar.

Semisolid Avaleha candy is challenging to dose accurately. Mishandled food might lead to microbial development. It's bulkier than tablets, capsules, etc. [16-18].

## 8. CONCLUSION

Avaleha Kalpana is the oldest Kalpana. Its simple administration and palatability are gaining popularity. Due to its therapeutic and nutritional characteristics, it falls under Ayurvedic nutraceuticals. It's not a functional food or supplement. Combining medical medications with jaggery, sugar, honey, ghee, oil, milk, etc. fulfils Nutraceutical demands. Avaleha contains proteins, carbohydrate, minerals, vitamins, lipids, and medicinally active compounds.

## FUNDING

Nil

## CONFLICT OF INTEREST

None

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