



## Research Article

### PHARMACEUTICAL STANDARDIZATION OF *KANYALOHADI VATI*

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#### ABSTRACT

*Rasa oushadies* are the potent Ayurvedic preparations mainly containing metals and minerals. These *oushadies* possess a wide range of therapeutic efficacy and are considered superior because of their qualities like small dose, quick action, palatability and longer shelf life. *Kanyalohadi Vati* is an important *Rasaoushadi* described in *Rasa Tantra Sara Va Siddha Prayoga Sangraha* indicated for the management of the diseases *Anartava*, *Kashtartava* and *Aniyamithartava*. The ingredients present in the "*Kanyalohadi vati*" are *Kaseesa Bhasma*, *Elua (Musambaram)*, *Twak*, *Ela*, *Sunthi* and *Gulkand*. The main pharmaceutical procedures involved in the preparation of *Kanyalohadi Vati* are *Shodhana*, *Bhavana*, *Marana*, *Elua nirmana*, *Gulkand nirmana*, *Churna nirmana* and preparation of *Kanyalohadi Vati*. The specific pharmaceutical blend of these contents can result in a more effective formulation. Therefore the present study has been planned to standardize the method of preparation of *Kanyalohadi Vati* according to the method explained in the classical literature.

**KEYWORDS:** *Kanyalohadi Vati*, *Shodhana*, *Bhavana*, *Marana*, *Elua nirmana*, *Gulkand nirmana*, Standardization.

#### INTRODUCTION

*Rasa Shastra* is an independent and important branch of Ayurveda developed during the medieval period. It mainly deals with the knowledge related to Alchemy and pharmaceutical processes especially concerned with the drugs of metal and mineral origin.

Metals and minerals are the integral part of Ayurvedic therapeutics and are in vogue since Vedic period. During *Samhita Kala*, their use was limited in therapeutics when compared to herbal preparations. But, after the development of *Rasa Shastra*, the frequency of use of metals and minerals in treating diseases has been increased. Before their use, they should be subjected to specialized pharmaceutical processes like *Shodhana*, *Marana*, *Amrutikarana* etc. Their use in therapeutics occupied highest place and is called as *Rasa Chikitsa*.

*Kaseesa* mentioned under *Uparasa* group possess various therapeutic properties. It is indicated in the management of several diseases like *Kandu*, *Mutrakrichra*, *Switra*, *Krimiroga*, *Pleeha roga*, *Raktavikaras* etc.<sup>[1]</sup>

*Kanyalohadi Vati* is a unique formulation described in *Rasa Tantra Sara Va Siddha Prayoga Sangraha*,<sup>[2]</sup> which contains 10 parts of *Elua*, 7 parts *Kaseesa Bhasma*, 20 parts of *Gulkand* and 5 parts each of *Twak*, *Ela* and *Sunthi*. *Shodhana*, *Bhavana*, *Marana*, *Churna nirmana* and preparation of tablets of

*Kanyalohadi Vati* are the main pharmaceutical procedures adopted in the preparation of *Kanyalohadi Vati*. In the present study an effort has been made to highlight the significance of these pharmaceutical procedures and to standardize the method of preparation of *Kanyalohadi Vati*.

#### AIM OF THE PRESENT STUDY

Pharmaceutical Standardization of various steps involved in the preparation of *Kanyalohadi vati*.

#### MATERIALS AND METHODS

##### Collection of Raw Material

*Kaseesa* was obtained from Chennai. Rose flowers, *Twak*, *Ela* and *Sunthi* were obtained from the local market, Tirupati. *Bhringaraja* and *Kumari* leaves were obtained from TTD's Sri Srinivasa Ayurveda Pharmacy, Tirupati.

##### Methods

Entire preparation of *Kanyalohadi Vati* was carried out in Department of *Rasa Shastra* and *Bhaishajya Kalpana*, TTD's S.V. Ayurvedic College and Sri Srinivasa Ayurveda Pharmacy, TTD, Tirupati.

##### Pharmaceutical study was carried out in five stages

- |           |  |
|-----------|--|
| Stage I   | <i>Shodana</i> and <i>Marana</i> of <i>Kaseesa</i> <sup>[3]</sup><br>( <i>Rasamrita</i> 3/158-159) |
| Stage II  | <i>Elua (Musambaram) nirmana</i> <sup>[4]</sup>  |
| Stage III | <i>Twak, Ela</i> and <i>Sunthi churna nirmana</i> <sup>[5]</sup><br>( <i>Sh.M.Kh.6/12</i> )        |

Stage IV *Gulkand nirmana*<sup>[6]</sup>

Stage V Preparation of *Kanyalohadi Vati* tablets<sup>[7]</sup>

### **Kanyalohadi Vati preparation**

Reference *Rasa Tantra Sara Va Siddha Prayoga Sangraha* Volume-1, *Gutika prakarana*

Materials *Kaseesa Bhasma* - 110g

*Elua*-250g

*Twak churna*- 100g

*Ela churna*- 100g

*Sunthi churna*- 100g

*Gulkand*- 500g

Method/ *Shodhana, Marana, Elua nirmana,*

Principle *Gulkand nirmana* and *Churna nirmana*

Apparatus Gas stove, iron ladle, steel vessel, *Khalwa yantra*, knife, cloth, *Multani mitti*, measuring jar, wide mouthed earthen pot, cow dung cakes, spoon, *Sharava*, Glass bottle, Iron vessel, sieve.

### **Kaseesa shodhana**

**Ingredients:** *Ashuddha Kaseesa* - 500g, *Bhringaraja Swarasa* - Q.S. (Quantity Sufficient)

**Procedure:** *Kaseesa* was taken in a *Khalvayantra* and made into powder.

Sufficient quantity of *Bhringarajaswarasa* was added to it and triturated till the mixture gets dried up. This procedure was repeated for 3 times. *Shuddha Kaseesa* was obtained.

**Observations:** After *Bhavana* the colour of *Kaseesa* was ash green.

### **2. Kaseesa Marana**

**Ingredients:** *Shuddha Kaseesa*- 490g, *Nimbu swarasa* -Q.S. (Quantity Sufficient).

**Procedure:** *Shuddha Kaseesa* was taken in *Khalva yantra* and sufficient quantity of *Nimbu Swarasa* was added to it and triturated well. *Chakrikas* of uniform size and shape were prepared and kept in an earthen saucer and were allowed to dry. Then it was subjected to *Sandhi bhandhana* and *Sharava samputa* was kept for drying. Then it was subjected to *Laghuputa*. After self-cooling the *Sharava Samputa* was taken out and opened. The material was collected and ground. Again this procedure was repeated for five times.

**Observations:** Red coloured *Kaseesa bhasma* was obtained after 6<sup>th</sup> *Putra*. Maximum temperature attained during the *Putra* was 668°C. Gradual reduction in the weight of *Kaseesa* has been noticed in the whole process.

### **3. Elua (Musambaram) preparation**

**Ingredients:** *Ghritakumari Swarasa*

**Procedure:** Fresh *Kumari* leaves were collected and its outer skin was peeled off. Pulp was taken and subjected for grinding in mixer grinder. Grinded pulp

was filtered through a cloth to obtain *Kumari Swarasa*. *Kumari swarasa* was taken in an iron vessel and heated over moderate flame. It was heated continuously by stirring until it turned into semisolid consistency. Then it was transferred into a tray and exposed to sun-light till it gets completely dried and preserved.

**Observations:** Greenish black coloured *Elua* was obtained.

### **4. Twak, Ela and Sunthi churna nirmana**

**Ingredients:** *Twak*- 100g, *Ela*- 100g and *Sunthi*-100g.

**Procedure:** Dried *Twak*, *Ela* and *Sunthi* were thoroughly checked for any external impurities, worms and insects. Later they were taken in *Khalwa yantra* and pounded separately. The pounded material was sieved through a cloth to obtain very fine powder

**Observations:** *Twak churna* obtained was light brown in colour.

*Ela churna* obtained was white in colour.

*Sunthi churna* obtained was cream white in colour.

### **5. Gulkand nirmana**

**Ingredients:** Rose petals -250g, Sugar - 500g.

**Procedure:** Fresh Rose flowers were taken; washed with water and dried. Petals were separated. A glass jar with a lid was taken. A layer of rose petals was spread evenly in the dry glass jar. A layer of the sugar was then spread over the rose petals. A layer of rose petals was again spread over the sugar layer. This process was done till the glass jar was completely filled with rose petals and sugar. The jar was closed with a lid and kept under sunlight for 6-7 hours daily for one month. The contents were stirred regularly using a clean spoon.

**Observations:** Dark pink colour *Gulkand* was obtained.

### **6. Mixing of Kaseesa Bhasma with component drugs of Kanyalohadi Vati**

**Ingredients:** *Kaseesa Bhasma*- 110g, *Elua* -250g, *Twak churna*- 100g, *Ela churna*- 100g, *Sunthi churna* - 100g and *Gulkand*- 500 g.

**Procedure:** All the ingredients were added one by one in a *Khalwa yantra* and mixed well till a homogenous mixture was obtained.

### **7. Preparation of Kanyalohadi Vati**

**Ingredients:** Homogenous mixture of *Kanyalohadi Vati*- 1,150g.

**Procedure:** 500mg pills of *Kanyalohadi Vati* of uniform size and shape were made manually and preserved in absolute sterile and moisture free glass containers.

## Result

Table 2: Showing the changes in weight of various practicals in the preparation of *Kanyalohadi Vati*

Name of the practical	Initial weight (g)	Final weight (g)	Loss in weight (g)
<i>Kaseesa Shodhana</i>	500	490	10
<i>Kaseesa Marana</i>	490	120	370
<i>Twak churna Nirmana</i>	500	480	20
<i>Ela Churna Nirmana</i>	500	400	100
<i>Sunthi churna Nirmana</i>	500	480	20
<i>Elua Nirmana</i>	1000ml	30	970
<i>Gulkand Nirmana</i>	Rose petals- 250 Sugar- 500	600	150
<i>Kanyalohadi vati Nirmana</i>	Homogenous mixture - 1,160	1,150	10

Table 3: Showing the Heating pattern of *Laghu Puta*

Time (in minutes)	Temperature (in Degree Celsius)
0 min	29 °C
30 min	104 °C
60 min	668 °C
90 min	511 °C
120 min	259 °C
150 min	144 °C
180 min	96 °C
210 min	69 °C
240 min	44 °C
270 min	26 °C
275 min	26 °C

Table 4: Showing the Results of *Kaseesa marana*

Putra	Weightt of Shodita kaseesa (gm)	Nimbu swarasa (ml)	Weight of Chakrika (gm)	Weight of Chakrika after Putra (gm)	Colour	Hardness
1	490.0	250	530	180.8	Blackish red	Soft
2	180.8	120	203	154.2	Blackish red	Soft
3	154.2	120	176.6	140.2	Blackish red	Soft
4	140.2	100	163.0	129.0	Brownish Red	Soft
5	129.0	100	132.4	120.6	Red	Soft
6	120.6	100	119.5	111.2	Red	Soft

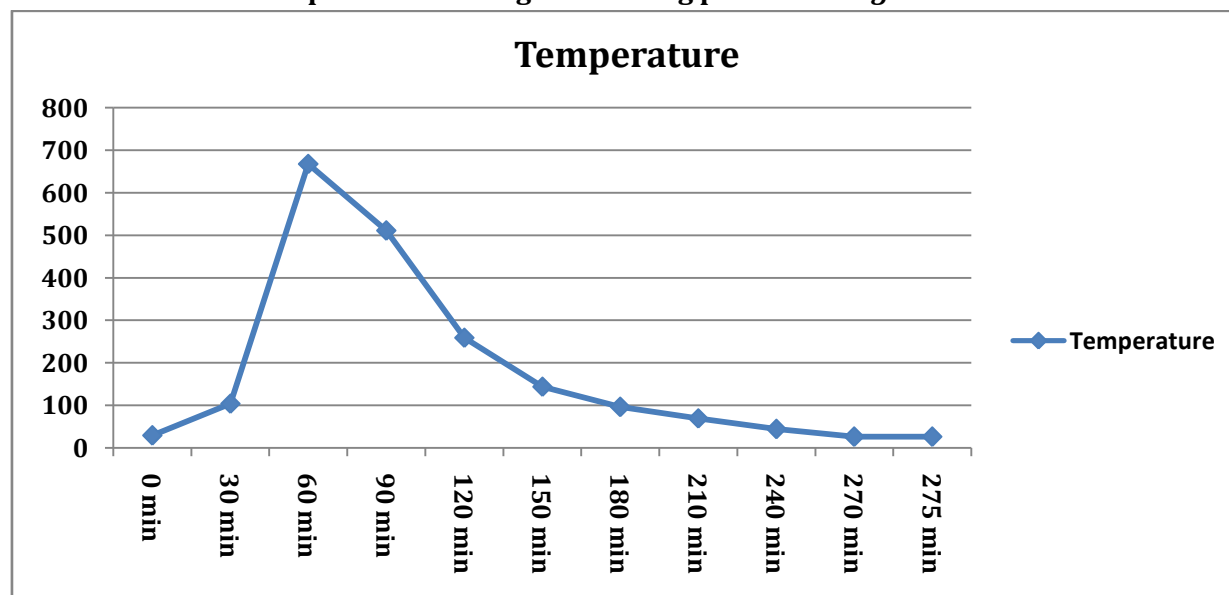
Graph No.1 Showing the Heating pattern of *Laghu Puta*



Figure 1:



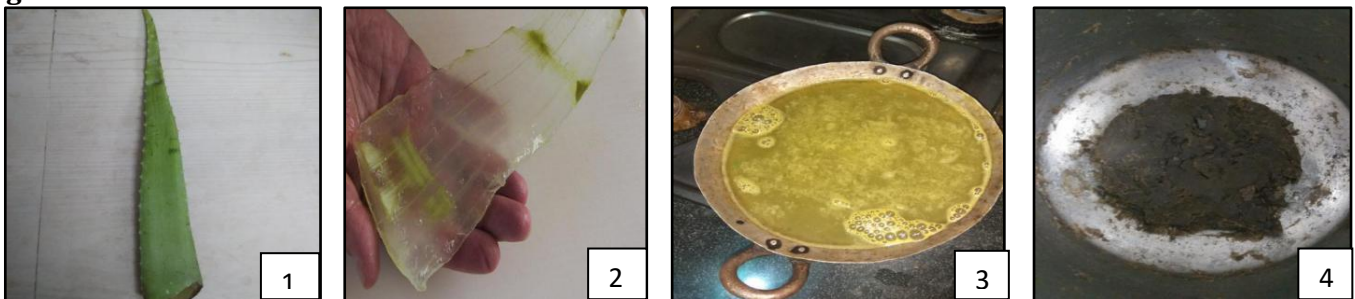
1- Ashuddha Kaseesa; 2- Bhavana with Bhringaraja Swarasa; 3- Shuddha Kaseesa; 4- Bhavana with Nimbu Swarasa; 5- Cakrika Nirmana; 6- Sarava Samputikarana; 7- Laghu puta; 8- Kaseesa bhasma

Figure 2:



1. Twak; 2. Twak churna; 3. Ela; 4. Ela churna; 5. Sunthi; 6. Sunthi churna

Figure 3:



1. Kumari leaves; 2. Extracted pulp of Kumari; 3. Boiling of Kumari Swarasa; 4. Elua (Musambaram)

Figure 4:





1. Rose petals; 2. Sugar; 3. Alternate spreading of Rose petals and Sugar; 4. Filled glass jar; 5. Exposing to Sunlight; 6. Gulkand; 7. Homogenous Mixture of *Kanyalohadi Vati*; 8. Tablets of *Kanyalohadi Vati*

## DISCUSSION

The pharmaceutical procedures adopted in this study are *Shodhana*, *Marana* and *Churna nirmana*. *Shodhana* is done for *Kaseesa*.

### *Kaseesa Sodhana*

*Shodhana* is done to convert materials into suitable form for further procedures, to remove visible and invisible impurities, to reduce the toxicity and to enhance the therapeutic properties.<sup>[8]</sup>

The purification of *Kaseesa* was done according to *Rasamrita* i.e., *Bhavana* with *Bhringaraja swarasa*.

### Reason to select *Bhringaraja* as *Bhavana dravya*

The reason to select *Bhringaraja* as *Bhavana dravya* is that it has properties like *Vata kapha hara*, *Agni Vardhaka*, *Deepana*, *Vibandhahara*.<sup>[9]</sup> To obtain these qualities in *Kaseesa*, *Bhringaraja swarasa bhavana* is considered as the best.

### *Kaseesa Marana*

Metallic drugs should always be reduced to *Bhasma* form for internal use. *Marana* makes *Shodhita dravyas* adaptable, absorbable and assailable for the body. During this procedure, various physico-chemical changes take place gradually and after repeated processing metals change into such forms that are suitable for internal administration.<sup>[10]</sup>

### Role of *Nimbu swarasa bhavana*

*Acharya Charaka* has described *Bhavana* as one of the *Samskaras*.<sup>[11]</sup> It is described that during preparation of any medicine, *Bhavana* with *Swarasa* of specific *Dravya* enhances the *Bala* (potency) of *Aushadhi dravya*. Wet trituration (*Bhavana* with *Nimbu Swarasa*) facilitates particle size reduction and homogenization leading to modification of properties (*Gunantatradhana*) of the end product. *Bhavana* helps in increasing the therapeutic efficacy by

converting the *Bhavya dravyas* into smaller particles and adding the trace elements in *Bhasma* and converting a metal into a Herbo-metallic compound.<sup>[12]</sup>

In fact, grinding with lemon juice makes *Kaseesa* more absorbable in the body, as ferrous sulphate becomes ferrous citrate after this process and iron in ferrous form absorbs faster in the presence of citric acid. The administration of ferrous sulphate in crude form is in vogue in allopathic system of medicine for iron-deficiencies.

After attaining *Subhavita lakshanas*, *Chakrikas* were prepared of uniform size and shape to facilitate uniform distribution of heat during the *Putapaka*. These *Chakrikas* were dried properly, subjected to *Sharava samputikarana*, and then subjected to *Laghu puta*.

*Puta* is the heating system and heating schedule which indicates the quantum of heat required by the *Rasadi dravyas* for their conversion into suitable form (*Bhasma*).<sup>[13]</sup>

Neither less nor excess heat is desired i.e. the desired quantum of heat is needed to be applied for making it converted to desired form suitable for internal use.<sup>[14]</sup> According to classics *Agni* mentioned for *Marana* of *Kaseesa* is *Laghu Puta*. The maximum temperature recorded during *Puta* was 668°C. After that, gradual fall in temperature was noted.

The colour and consistency of *Bhavit* *Kaseesa chakrikas* were blackish grey in colour. *Kaseesa* turned from blackish grey to blackish brown, dark brown, and then to red (*Sindhura*) by the end of 6<sup>th</sup> *Puta*. Finally red coloured *Kaseesa bhasma* was obtained after the 6<sup>th</sup> *Puta*.

The material turned to soft powder without any lusture after complete process, which indicates



that the temperature was sufficient for the formation of the desired compound.

*Varitaratwa, Slakshnatva and Rekhapurnatwa for Kaseesa Bhasma* were checked after every *Putra*. *Kaseesa Marana* was done till all the *Bhasma lakshanas* were obtained.

**Elua nirmana-** *Kumari swarasa* was taken in an iron vessel and heated over moderate flame until it gets turned into semisolid consistency.

**Gulkand nirmana-** *Gulkand* was prepared by using Rose petals and Sugar in a glass jar and exposed to sun light.

#### **Churna nirmana of herbal drugs**

*Elua, Twak, Ela and Sunthi* were made into fine powder according to the reference mentioned in *Sarangadhara Samhitha*.

#### **Preparation of homogenous mixture of all component drugs**

In a *Khalva yantra Kaseesa Bhasma* and all other herbal drug *Churnas* were mixed in the ratio as mentioned in reference *Sloka*. *Gulkand* was added to it and triturated till it gets *Vati* consistency.

#### **Preparation of Kanyalohadi vati**

Pills of uniform size and weight were prepared and dried. They are preserved in absolute sterile and moisture free glass containers.

#### **CONCLUSION**

- *Kanyalohadi Vati* is one of the *Kharaliya Rasayana* in which *Kaseesa bhasma, Elua (Musambaram), Gulkand, Twak, Ela and Sunthi churna* are the main ingredients.
- The combination of all these drugs synergistically acts together to pacify the symptoms of *Kashtartava*. All the ingredients of *Kanyalohadi vati* are having *Sulahara, Vibandhahara* and *Vatanulomaka* properties.
- Pharmaceutical standardization is the first step towards standardization of any drug. So it should be done with utmost accuracy. This leads to reproducibility of drug and production of safe and efficacious drug.

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