



PHARMACEUTICAL PREPARATION OF PAMANTHAKA TAILA WITH NARIKELA GHRITA

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ABSTRACT

Bhaishajya kalpana is the science which deals with process of preparation of single or compound formulations. Different dosages are introduced to get better therapeutic efficacy to increase palatability, potency and shelf life. *Snehakalpana* in Ayurvedic pharmaceuticals is so peculiar because of its property of absorbing the principles of drug and stores it for longer periods without losing its own property. *Pamantaka taila* is one of the unique formulations with minimum ingredients mentioned in book of Ayurveda yoga sangraha for skin disorders. *Pamantaka taila*, prepared using *Keraajya*, is an effective medicine in many types of skin diseases where itching is a main symptom. *Keraajya* is prepared from coconut milk. The preparation of *Keraajya* is a strenuous and time-consuming process and its yield is also very less. In clinical practice prescribing *tailas* depends upon various symptoms of the patient. There comes the need of analysis of pharmacological properties, method of preparation, characteristics, probable mode of action and recent works on scabies which can increase its scope for further studies.

KEYWORDS: Keraajya, Pamantaka tailam, Pama.

INTRODUCTION:

The judicial processing or the Samskaras done to the drugs will render them fit for therapeutic administration and make them more potent. The knowledge of conversion of a raw material into a desirable medicine or dosage form is known as *Bhaishajya Kalpana*.

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 the certain pharmaceutical parameters according to the need of the therapeutics^[1].

This unique process of preparation gives wide scope for solubility of active principles in the form of *kalka*, *churna* etc in *Sneha*, *takra*, *kanji* and *ksheera*. Four types of *snehas* are described in Ayurvedic literature, these are *ghrita*, *taila*, *vasa* and *majja*^[2]. *Tailas* are preparations in which oil is boiled with prescribed *Kashaya* and *kalka* drugs according to the formula i.e., if *kalka* is one part, *Sneha* should be four times more and *drava dravyas* should be sixteen parts^[3].

METHODOLOGY:

The *Pamantaka taila* is prepared by using *Keraajya*. Very few references are available for *Narikela Ghrita* in Ayurveda. Method of preparation of *Narikela ghrita* is mentioned in Nighantu Adarsa. In 'kriyakaumudi', a text book on *Agadathantra*, *Narikela ghrita* is indicated for *dhara* in *sarpadamshita*^[8]. Extract milk from coconut. Keep the milk in an earthen pot for one night in open air. In morning time, churn it and separate butter. Heat that butter to obtain *Narikela Ghrita*.

Table No. 1: Ingredients of Pamantaka taila^[4]

| Sl. No. | Name of the Drug | Botanical Name | Properties | Rogagnathas |
|---------|-------------------------|---------------------------------|---|---|
| 1 | Brahmi ^[5] | Bacopa monnieri (Linn.) Pennel. | Rasa- Katu, Thikta, Kashaya Guna - Laghu, Ruksha Virya - Usna Vipaka - Katu | Agni deepana, rakta sodhaka, raktapitta, santapam, krimi, kushta, kandu, garam |
| 2 | Kaidarya ^[6] | Murraya koenigii Linn. | Rasa- Thikta. Kashaya Guna - Laghu, Ruksha Virya - Usna Vipaka - Katu | Agni deepana, rakta sodhaka, raktapitta, krimi, kushta, kandu, garam |
| 3 | Keraajya ^[7] | Cocos nucifera L. | Rasa - Madhura Guna - Guru, Snigdha Virya - Sita Vipaka - Madhura | Keshya, pitta anilahara, hridya, kandu, kotha |

Narikela Ghrita

Ingredients: Narikela - 15 numbers (4.200kg grated coconut obtained)

Apparatus used: Vessel, gas stove, cloth, spoons, Khaja(churner)

Procedure:

15Narikela were cut and grated. Total 4200 gram of grated coconut obtained. *Narikela ksheera* extracted by pressing the grated coconut with little quantity of water. Obtained *Ksheera* was transferred into a mud pot. Mouth of pot was tied with a cloth and kept in open air for one night. Next morning it became a sour thick fluid just like *Dadhi*. *Dadhi* was churned with a churner by adding water little by little. Thick cream appeared at the surface of fluid was separated carefully by a spoon. Total 1.850 gram of cream obtained. Obtained Navaneetha was transferred to a thick steel vessel and started to heat under *Mandagni*. It continued till whole *Ghrita* was separated from Navaneetha. This *Ghrita* was filtered through a clean cloth. The obtained *Narikela ghrita* was measured using volumetric flask.

Table No. 2: Observations

| | |
|------------------------------|--|
| Grating of coconut | <ul style="list-style-type: none"> Whitish oily coconut meat (kernel) with pleasant smell. |
| Extracting the coconut milk. | <ul style="list-style-type: none"> 1st milk was thick white fluid. 2nd milk was thin compared to 1st milk. 3rd milk was thinner almost watery consistency. |
| Extraction of Navaneetha | <ul style="list-style-type: none"> Thick layer of cream was floating on the surface of fluid before churning. When churned, frothy cream appeared at the surface of fluid. It was easy to extract the butter when <i>Dadhi</i> was kept in fridge for some time or by adding cold water. After separating Navaneetha, remaining fluid was thin sour in smell and taste resembling toddy. |
| Preparation of Ghrita. | <ul style="list-style-type: none"> Color of cream changed to off white after 15 minutes of heating. After 45 minutes it became a thick mass with slight brownish color and bubbles started to appear. After 1 hour it became thicker and was found difficulty for stirring. Color changed to brown after 1 hr. 30 minutes and Ghrita started separating from the mass. After 1 hr. 35 minutes the mass started to disperse into small particles and more Ghrita started to separate. When the Ghrita became devoid of water content, fire was put off; <i>Kalka</i> was soft light brown in color. |
| Narikela ghrita | <ul style="list-style-type: none"> Clear whitish yellow oily fluid with sweet coconut aroma. Taste resembled Ghrita. When swallowed completely, there was no oily coating over the tongue. Vessels were easily washed even without applying soap because of the absence of oily coating. |

Pamantaka taila preparation

General ratio of *Sneha dravya*, *kalka* and *drava dravya* are 1:4:16

Table No. 3: Ingredients of Pamanthaka taila

| | | |
|--------------|------------------|--------------------|
| Kalka | Brahmi, kaidarya | 192gm(1 anjali) |
| Sneha dravya | Keraajya | 768ml (1 prastha) |
| Drava dravya | Jala | 3072ml (4 prastha) |

Apparatus used: Vessel, gas stove, cloth, spoons, container.

Procedure:

All the drugs were washed properly pounded well in *Khalwayantra* to make into *Kalka*. A bolus of *Kalka* was prepared by making it into fine paste by adding water. *Keraajya* was taken in a stainless steel vessel, heated on mild fire to which four times of water and *Kalka Dravya* was added. The heating was continued on mildfire with continuous stirring for homogenous mixing. The heating process was continued till the *Taila* becomes moisture free and *siddhiLakshanas* were attained. After attaining all the *SiddhiLakshanas* the heating was discontinued and *Taila* was filtered through clean cloth. It was allowed for self-cooling and covered with a plate to prevent any contamination. Then it was stored in an air tight container and labeled.

Confirmatory tests done^[10]:

1. *VartiPareeksha*- *Kalka* when rolled between fingers attained *Varti* form, which was soft, blackish colour.
2. *AgniPareeksha*- No crackling sound when put into fire.

Observations during various stages of *Taila* preparation is as shown in the table below.

Table No. 4: Showing various stages of *Tailapaka*

| Various stages of <i>TailaPaka</i> | Observations |
|------------------------------------|--|
| <i>Keraajya</i> kept on mild fire | yellowish white colour |
| Kalka added to <i>Keraajya</i> | While adding Kalka fine bubbles appeared with peculiar sound |
| Started to boil after adding jala | Kalka sink to the bottom of the vessel |
| <i>MruduPaka</i> | Colour- greenish, Kalka become slight sticky in consistency, with more amount of moisture content and produces crackling sound when kept on fire. |
| <i>MadhyamaPaka</i> | Bubbles started to appear Kalka became dark and started to stick to the bottom of vessel and was soft in consistency <i>Vartipareeksha</i> - Kalka can be made into soft <i>varti</i> <i>Agnipareeksha</i> - No sound |

Table No. 5: Showing observations of organoleptic characters of pamantaka *Taila* prepared from *keraajya*

| Characters | Observation |
|----------------|----------------------------|
| 1) Colour | Dark green |
| 2) Smell | Having smell of kaidarya |
| 3) Consistency | Liquid, Oily |
| 4) Appearance | Oily |
| 5) Taste | Slight thikta kashaya rasa |

Precautions:

Continuous stirring was carried out to protect the burning of *Kalka* especially in last stage. When froath appears in the *Taila*, the temperature was maintained to avoid spilling of *Taila*.

Table No. 6: Showing result obtained in pamantaka *taila* prepared from *keraajya*

| | |
|--|--------|
| 1) Initial quantity of <i>keraajya</i> | 768 ml |
| 2) Quantity of pamantaka <i>taila</i> obtained (L) | 650 ml |
| 3) Initial quantity of <i>Kalka</i> (g) | 192g |
| 4) Obtained quantity of <i>Kalka</i> (g) | 125g |
| 5) Loss of <i>keraajya</i> (ml) | 118 ml |
| 6) Loss of <i>Taila</i> (%) | 15.36% |



Brahmi

Kaidarya



Keraajya

Fig. No. 1: Images of the Ingredients used in pamantakataila



Fig No. 2: Stages of Preparation of *Keraajya*



Fig. No. 3: Stages of Preparation of pamantakataila

DISCUSSION:

Sneha kalpanas are the only dosage form which can be administered conveniently both internally as well as externally as per the need and the severity of diseases. As *sneha kalpana* is prepared by using *Kalka*, *Kwatha* and *Sneha*, it extracts all the water and fat soluble active ingredients to it and increases its shelf-life.

Changes during the paka and status of kalka:

Colour of the *taila* gradually changes during the *paka*. Both the sample 1 and 2 took 3 hours to complete the preparation as we used water as *drava dravya* in the same ratio both samples. *Phenodgama* in *taila* was observed during the *paka lakshana* and *kalka pareeksha* was done to evaluate the moisture content as a *Siddhi lakshana*.

The changes in the duration of the preparation of the *taila* indicate the different chemical changes occurring during the transferring of the properties from *drava medium* into the *taila medium*. The aqueous medium in the preparation of *taila* facilitates the imbibition's of the water soluble extracts into the oil medium.

Temperature: The intensity of *agni* for preparation of *taila* was found to be maintained at 90-95°C by using *mandagni* for both the samples. This is because the boiling point of water being 100° c and coconut oil being 171°C. Here the temperature is maintained below it. By this the reaction between the water molecule and the fat molecule occurs in a consistent manner over a specific duration of time. This temperature facilitates easy evaporation of the water molecule remaining water soluble extractives which is slowly imbibed into the oil medium by loosening the bondage in between the fat molecule. Hence *mandagni* could have been explained in books of Ayurveda for preparation of *sneha kalpana*. Also *gumasanchaya* in the *sneha* with longer duration take place as explained in books of Ayurveda.

Difficulty found in preparing *kerajya*:

1. The preparation of *Keraajya* is a strenuous and time consuming process and its yield is also very less.
2. It is very costly.
3. Extraction of coconut milk was performed by taking its 1st 2nd and 3rd milk (*ksheera*)
4. The step that taken for *ksheera* was transferred into a mud pot and kept it undisturbed for one night.
5. Extracting of *navaneetha* – need to be commenced in the early morning other wise the yield getting will be very less.
6. During the churning process we need to add cold water little by little to get *navaneetha*.
7. At the final stage of preparation of *ghritha* the vessel should be thick and heat in *mandaagni* and careful observation and proper stirring should be done or else there will be a chances of spilling.

Probable mode of action:-

Brahmi, *Kaidarya* and *kerajya* are having *kandughna* and *kushtaghna* action*.

In *utklesha avastha* of *kapha* and *kandu*, skin infections like atopic dermatitis etc, *Pamanthaka taila* is effective.

CONCLUSION:

The process of pharmaceutical preparation of *pamanthaka taila* with *kerajya* is very much strenuous as well as costly in case of large-scale production. So by considering this fact, there is a scope for pharmaceutical preparation of *pamanthaka taila* with coconut oil and further studies should be carried out to prove the efficacy of the same in *kapha* related skin diseases.

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