

PHARMACEUTICAL STANDARDIZATION OF RAJAHPRAVARTINI VATI

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ABSTRACT

Rajahpravartinivati is a Kharaleeya rasa which is extensively used in all types of streerogas. Kharaleeya rasaushadhies occupies greater portion in therapeutics comparatively to the other kalpanas. In present article an study over “*Rajahpravartinivati*” by adopting the method mentioned as per Bhaishajya Ratnavali , Streerogadhikara and also in AFI (Ayurvedic Formulary of India) approved by govt of India. Genuine raw materials were selected and test carried out as per API (Ayurvedic Pharmacopeia of India) parameters to access the genuinity of the raw materials, followed by pharmaceutical procedure was carried out. To increase the bioavailability and to avoid weight variation conversion of vati to tablet form was very advantageous so dry punching of tablets was carried out.

KEYWORDS: *Rajahpravartinivati*, Selection of materials, Shodhana, Bhavana.

INTRODUCTION

Kharaleeya rasa are the unique formulations of pharmaceuticals containing herbal, mineral and animal products. These preparations take less space for manufacturing and storing, with faster relief when administered with proper anupana and sahapana. *Rajahpravartini vati*¹ included under “Kharaleeya Rasayana”, prepared by adopting method which is described in Bhaishajya Ratnavali streerogadhikara and AFI.² In this preparation selection of the raw material and shodhana process of the individual drugs carried out followed by 3 Bhavana with kumara swarasa was given and punched into tablet form.

This preparation is specially indicated in Kashtarthava and Nashtarthava

and it has been used extensively in day to day practice. As this RPV (Rajahpravartini vati) is profoundly manufactured in large scale production, available in the market. Here an attempt has been made to prepare Rajahpravartini vati after testing genuinity of raw materials.

MATERIALS AND METHODS

Selection of Raw Material: In this Raw materials like Kasisa, Tankana, Hingu are subjected to analysis according to Standard reference API by following methods.

Selection of Hingu³:

Table Showing Tests performed for selection of Hingu

Tests performed	Sample 1	Sample 2
Fine powder of Hingu triturated with water then gives milky white color.	Positive	Positive
On burning gives yellow colored flame.	Positive	Positive
On burning gives no residue	Partially Positive	Positive
Smell is strong alliaceous irritant.	Comparatively less	Positive
When pounded smell will be strong	Partially positive	Positive
Irregular mass and hard	Positive Not much hard	Positive

Selection of Tankana⁴:

Table Showing Tests performed for selection of Tankana

Tests performed	Sample 1	Sample 2
Solubility	Completely soluble but took more time to get soluble.	Completely soluble.
Litmus paper test	Red litmus paper turned to blue	Red litmus paper turned to blue.
Flame test	Yellow flame is observed viz presence of sodium.	Yellow flame is observed viz presence of sodium.
Moistened with sulphuric acid	Green flame due to Boron	Dense Green flame due to Boron.
Reaction with hydrochloric acid	Yellow color solution on boiling dissolves completely	Yellow color solution on boiling dissolves completely.
Reaction with sulphuric acid	Slight brownish color solution on boiling dissolves completely	Colorless solution on boiling dissolves completely.

Selection of Kasisa⁵:

Table Showing Tests performed for selection of Kasisa

Tests performed	Sample 2
Solubility	Kasisa is soluble in water almost 95% soluble.
Kasisa made into coarse powder taken in a crucible then allowed to strong heat then Kasisa water with evolution of Sulphur dioxide gas gives pungent smell of burning sulphur	Passes
Kasisa and borax both are made into fine powder both taken in crucible then allowed to heat then it gives brown glassy fused mass.	Passes
Reaction with Barium chloride Barium chloride solution is prepared in the ratio 1:10, then kasisa solution is prepared in the ratio of 1:25 then	Passes

kasisa solution taken in a test tube and Barium chloride solution is added to it slowly, so it gives white precipitation.

Shodhana of Raw Materials: In this the Raw materials like Kasisa, Tankana and Hingu were subjected to Shodhana according to classical reference by following methods.

- a) Shodhana of Kasisa by Bhavana with Bhringarajaswarasa in Khalvayantra.
- b) Shodhana of Tankana by Bharjana method.
- c) Shodhana of Hingu by GoghritthaBharjana.

Tanakana shodhana⁶ 500gm of Ashodhita Tankana was taken in clean Khalva Yantra and powdered well. The powdered Tankana was divided into 10 batches of 50 gram each for convenience. Each time divided part of Tankana was taken in stainless steel pan and bharjana with stainless steel spoon. Frying continued till they become light and puffed by evaporation of water content. Shodhita Tankana was collected and stored in clean dry glass bottle.

Shodhana of Hingu⁷: 325gm of Ashodhita Hingu was taken in clean Khalva Yantra and pounded well to make it small pieces. The powdered Hingu was divided into 4 batches of 81 gram each for convenience. Pour Q.S (Quantity Sufficient) goghrittha in stainless steel pan after ghritha becomes hot Each time divided part of Hingu was poured in stainless steel pan which contains goghrittha and fried over mandagni with continuous frying in stainless steel spoon. Frying continued till they become light, puffed and crispy. Shodhita Hingu was collected and

powdered well, stored in clean dry glass bottle.

Kasisa Shodhana⁸: Bhringaraja Patra (*Ecliptaalba*) was ground in Grinder and Swarasa was obtained by squeezing through cotton cloth.

- Ashodhita Kasisa was taken in a clean khalvayantra and mardana done to achieve fine powder.
- Fine powder of Ashodhita Kasisa was taken to which required quantity of Bhringaraja Swarasa was added and bhavana was carried out.
- Bhavana was given for three times, the Bhringaraja Swarasa was added after complete drying of previous bhavana.
- Each Bhavana took 6 to 7 hrs.
- Swarasa used for each batch viz, 100ml, 80ml, 80ml respectively.

Preparation of Mosabbar^{9,10}: Fresh kumari (*Aloe vera*) leaves were collected and divided into 4 batches for convenience. divided like 6Kg, 4Kg, 6Kg and 8Kg then wash cleanly with water then remove upper and lower outer layer of leaf only pulp was taken out, cut into small cubes then pour into a lohapatra (Iron vessel) and mandagni should be given until it attain Avalehasiddhi lakshana. Once it attain avalehalakshana taken out from lohapatra and spread over a tray and then allowed to sunlight for drying.

Preparation of Rajahpravartini vati^{1,2}:

Ingredients	Quantity	Chemical formula/Botanical Name
Shodhita Tankana	270g	Na ₂ B ₄ O ₇ 10H ₂ O

ShodhitaKasisa	270g	FeSo ₄ 7H ₂ O
ShodhitaHingu	270g	<i>Ferula northex</i>
Mosabbar	270g	<i>Aloe vera</i> leaf pulp (Solidified form)
Kumariswarasa	Q.S	<i>Aloe vera</i>

- Kumari (*Aloe vera*) is scrapped to obtain the swarasa.
- ShodhitaKasisa, ShodhitaTankana, ShodhitaHingu and Mosabbar were taken in a clean khalvayantra and mardanawas carried out until homogeneous mixture.
- Then required quantity of KumariSwarasa was added and bhavana continued.
- Bhavana was given for three times, the KumariSwarasa was added after complete drying of previous bhavana.
- Mixture of RPV (Rajahpravartinivati) divided into 3 batches for convenience.
- In First Bhavanaswarasa used was 285ml, 200ml, 190ml respectively.
- In second Bhavanaswarasa used was 300ml, 300ml, 280ml respectively.
- In third Bhavanaswarasa used was 320ml, 280ml, 250ml respectively.
- Each Bhavana took 3 to 4 days to get dry.
- Dry punching of tablet was done.

RESULTS

Table showing weight of ingredients before and after shodhana

Ingredients	Quantity taken	Obtained
AshuddhaKasisa	400g	412g
AshuddhaTankana	500g	271g
AshuddhaHingu	325g	315g
Mosabbar	24kg	307g
Rajahpravartinivati final product	1020g	1008g

Rajahpravartinivati ingredients taken: 1020g; Rajahpravartinivati obtained: 1008g

DISCUSSION

Rajas – Menstrual discharge

Pravartana – Going on, Beginning, Commencement, Stimulating, Urging, Initiating,

Vati – A pill, Bolus

A pill which initiates or stimulates the menstruation is called “*RajahpravartiniVati*”. Ingredients are easily available and vati preparation is also easy.

For Tankanashodhana, bharjana method was adopted. Chemically Tankana is Pyroborate Na₂B₄O₇10H₂O. Heating procedure causes the evaporation of water molecules present in it and reduce to 5 H₂O. Tankana puffs and becomes light. For Kasisashodhana, bhavana method was adopted. Because bhavana method helps better in reducing the particle size of Kasisa than other methods. In bhavananegligible loss of the drug was observed. Hingushodhana was done by frying it with cow’s ghee. Hingu is very Ushna, Teekshna, in nature having strong pungent odour, so after shodhana its pungent odour was reduced. While doing Bhavana for ‘*Rajahpravartinivati*’ it becomes sticky and took more time to get dry and because of stickiness and there was a loss of 12g was

observed. Because of stickiness of mosabbar dry punching of tablet was carried out without adding any excipients.

CONCLUSION

“Rajahpravartinivati” is a Herbo-mineral classical, KhalviRasayana. There are only 2 references of “Rajahpravartini vati” available and few formulations having same ingredients but formulation name is different, in the present study, Bhaishajya ratnavali, streeroga adhikara reference was followed. It is being used in kashtarthava and nashtarthava.

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<p>Flame test of Hingu</p>	
<p>Litmus paper test for Tankana</p>	
<p>Testing of Kasisa</p>	 <p>Brown glassy fused mass</p>

<p>Raw Tanka</p>  <p>A pile of white, irregularly shaped, translucent pieces of Tanka (Shilajit) on a white surface. A small white card with the handwritten text "RAW TANKANA" is placed above the pile.</p>	<p>Shodhita Tanka</p>  <p>A pile of white, granular, purified Tanka powder in a dark-colored bowl.</p>
<p>Raw Hingu</p>  <p>A pile of yellowish, irregularly shaped pieces of Hingu (Zingiber officinale) on a white surface. A small white card with the handwritten text "RAW HINGU" is placed above the pile.</p>	<p>After Bharjana</p>  <p>A pile of light brown, irregularly shaped pieces of Hingu after the Bharjana (roasting) process.</p>
<p>Raw Kasisa</p>  <p>A pile of bright green, finely chopped pieces of Kasisa (Celastrus scandens) on a white surface.</p>	<p>Bhringarajaswarasa Bhavana</p>  <p>A hand pouring a dark liquid (Bhringarajaswarasa) into a metal tray containing a light-colored paste.</p>
<p>Kumari Pulp</p>  <p>A large metal pot filled with a light-colored, pulpy substance (Kumari Pulp) on a traditional wood-burning stove.</p>	<p>Mosabbar Kept for drying</p>  <p>A dark, irregularly shaped mass of Mosabbar (Mushrooms) kept for drying.</p>

<p>Ingredients of RPV</p>  <p>A metal tray containing several pieces of the ingredients used in the formulation of RPV, including Tanka, Hingu, and Kasisa.</p>	<p>Adding Kumari Swarasa</p>  <p>A hand pouring a yellowish liquid (Kumari Swarasa) into a metal tray containing a white powder.</p>	<p>RPV Tablets</p>  <p>A hand holding a large quantity of small, round, dark-colored tablets.</p>
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