

UNIQUE WAY OF PREPARATION OF RASA KARPURA

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ABSTRACT

Ayurveda can be considered as a panacea to the mankind. This science has a holistic approach in treating various ailments. Rasashastra is an integral part of this Ayurvedic therapeutics, which shoulders the responsibility to architecture numerous formulations. This discipline primarily focus on one of the most powerful drug i.e. Mercury. The customized form of processed mercury along with other drugs and uniquely designed instruments gets the form of therapeutic molecule. This article is based on one of such distinctive instrument called Abhinava Valuka Yantra which was specially designed in the preparation of 'Rasa Karpura'. While preparing this formulation even though ingredients, their proportion, preparation of intermediate product etc steps remains the same, the uniqueness lies in the preparation of final product, prepared using this exclusive instrument instate of traditional valukayantra. Continuous research in architecting new advanced gadgets for designing new formulations will undoubtedly give new vista to Rasashastra.

KEYWORDS: Abhinava Valuka Yantra, Rasa Karpura

INTRODUCTION

In the present era not only Indian community but people across the globe count on Ayurveda as one of the most promising line of treatment in the medical fraternity. This science was one of the most developed sciences in ancient time in treating various diseases. Ayurveda comprises of treasure of numerous medicines in the form of herbal/mineral/metallic origin drugs, Herbo-mineral form, Herbo-metallic structure etc which are possessing dynamic pharmacotherapeutic potentials. Rasashastra and Bhaishajya Kalpana practically teach the ways to design therapeutic formulae. One of such formulary we find is Rasa Karpura¹. There are more than 40 references of Rasa karpura preparation mentioned in various

classics, where we find use of different permutations and combinations of ingredients, usage of various instruments or heating gadgets etc to design this preparation.

The formulations prepared from Parada can be classified under 4 broad classifications called Chaturvidha Rasayana which includes:

- Khalaviya Rasayana
- Parpati Rasayana
- Kupipakwa Rasayana
- Pottali Rasayana

Amongst these murchanas, Kupipakwa Rasayana preparations are bit challenging to prepare since:

- These medicines are formulated using unique combinations of various ingredients.

→ There is a need to design special instruments to prepare these medicines e.g. heating gadgets etc.

→ Processing involves long duration of conventional intense heating methods.

→ Drugs as well as other prerequisites involve high expenditure.

→ During processing if proper stages miss, then one can lose whole medicine.

This kalpana includes many preparations like

- Rasasindura
- Makardwaja
- Mallasindura
- Rasakarpura
- Rasapushpaetc.

When we look at the utility of Kupipakwa Rasayans, these preparations have strong Chemical bonding (even at sub atomic levels), possess very high therapeutic potency, shows quick action, are easy for administration and therapeutically required in minimal dose. In the present study the


Selection of Raw Drugs

All raw drugs were judiciously procured from authentic source by following stringent classical grahya – agrahya lakshanas⁴.

textual reference of Rasa Tarangini² is taken regarding formulation of Rasa Karpura, the ingredients, their proportion, even the preparation of intermediate product remains same but slight modification is done regarding instrument and the final product is prepared in a special designed instrument called Abhinava Valuka Yantra.

MATERIAL AND METHODS

The main ingredient in Rasa karpura is Shuddha Parada, hence Double distilled and 99.9% chemically pure Parada (Mercury-Hg) was procured from market and then processed for samanya shodhana³. This samanya shodhita Parada was mixed with Vimalikruta Gandhakamla (Conc. Sulphuric acid / H₂SO₄) in porcelain dish and then heated on mild flame till it converts in powder form. This powder was triturated with saindhava lavana and further placed in Abhinava Valuka yantra and heat was applied to get Rasa Karpura.

	
<p align="center">Samanya Shodhita Parada</p>	<p align="center">Conc. Sulphuric Acid</p>

Shodhana of Parada (Purification / Detoxification)

The raw drug Ashodhita Parada was treated with samanya shodhana procedure. This samanya shodhita parada was further used to prepare Rasa Karpura.

Preparation was carried out in 5 steps





1. Preparation of Basic Material
2. Preparation of Intermediate product
3. Design Abhinava Valuka Yantra
4. Preparation of Rasa Karpura
5. Collection of Prepared medicine

Step 1

Preparation of Basic Material:

To prepare basic material, Shodhita Parada (50gms) and Concentrated Sulphuric Acid (75ml) were taken as raw drugs. Sulphuric Acid was measured carefully and slowly poured in porcelain dish containing 50gm of Mercury. One glass rod was kept in the

porcelain dish for stirring. This mixture was then placed on Gas stove and heated on mild flame. The mixture in porcelain dish was stirred continuously with a glass rod throughout the procedure. Initially fumes started coming out then further mixture started boiling and slowly converted in smooth white powder having weight 75gms.

Ingredients	
	
Shodhita Parada	Conc. Sulphuric Acid
Instruments	
	
Porcelain Dish	Glass Rod

OBSERVATIONS WHILE HEATING (Hg&Conc.H₂SO₄)

S N	Time	Observations
1	After 10 minutes	White fumes started coming out
2	After 20minutes	Mixture turned into light brown colour
3	After 30minutes	Mixture started boiling
4	After 45minutes	Fumes increased and were irritating in nature
5	After 1 hour	Mixture attained white paste like consistency
6	After 1hr 30 minutes	The paste form slowly started converting into powder form
7	After 2hours	Fumes completely stopped and mixture turned into white, smooth and shiny powder which appeared similar to talcum powder.

			
Shodhita Hg (50gms) & Conc. H ₂ SO ₄ (75ml)	Mrudu Agni started	White fumes appeared	Mixture started boiling & turned into light brown colour
			
Fumes were dense and were irritating in nature			Mixture attained white paste like consistency
			
The paste form slowly started converting into powder form			
			
Basic Material HgSO ₄ (white, smooth and shiny powder which appeared similar to talcum powder)			

Step 2

Preparation of Intermediate product

Portion of basic material prepared in step 1 i.e. Mercuric Sulphate- HgSO₄ (35gm) was mixed and triturated thoroughly with equal

quantity of Saindhava Lavana/ Rock salt NaCl (35gm) till it forms homogeneous mixture. It took approximately 30min to form uniform mixture.



HgSO₄ (35gm) was triturated with NaCl (35gm) till it forms homogeneous mixture

The prepared mixture was placed in Abhinava Valuka Yantra.

Step 3

Design of Abhinava Valuka Yantra

Instate of following traditional method of preparation of Rasa Karpura by classical Valukayantra, a special yantra was designed called Abhinava Valuka Yantra. To design this yantra following materials are required

- Glass funnel
- Mud sharava
- Kadhahi (Iron Cauldron)
- Valuka (Sand)
- Multanimitti
- cloth

To design Abhinava Valuka Yantra, first keep this above mentioned triturate mixture in the middle of Mruttika Sharava. Then

glass funnel was placed over it in inverted position. To avoid loss of medicine during preparation process, the sandhi bandhana was done at the junction of sharava and inverted glass funnel, with the help of wet multani mruttika and strip of cloth. This was allowed to dry. Very fine and dry Sand (valuka) was taken in one sufficient big loha kadhahi and specially designed sharava with inverted funnel was placed in the centre over it. This is the design of Abhinava Valuka Yantra. The beauty of this yantra is that it is economical, uncomplicated, practical oriented and gives clear visibility during Rasa Karpura formation.









Sharava



Multani Mitti



Glass Funnel

		
Centrally placed Mixture	Inverted glass funnel over mixture	Sandhibandhana
		
Loha Kadhahi containing Sand	Place sharava in the centre of loha kadhahi	Properly arranged Abhinava Valuka Yantra

Step 4

Preparation of Rasa Karpura

In step 3 we structured Abhinava Valuka Yantra which was placed along with the

lohakadhahi on gas burner and kramagni was given. Following observations were noted.

OBSERVATIONS DURING PREPARATION OF RASA KARPURA

S N	Time	Observations
1	After 30 minutes	Water droplets started accumulating inside the funnel
2	After 1hr	water vapours started escaping out from the funnel
3	After 1hr 30mins	evaporation stopped, then Cork was fixed at the mouth of the funnel and kept on Teekshnagni
4	After 2 hrs	Inner portion of funnel started turning into whitish, small needle like projections.
5	Teekshanagni was given for 1more hour	The inner portion of glass funnel got covered with needle like projections

It was seen that needle like projections covered total inner surface of funnel hence heating was then stopped and kept for swangashitata (self-cooling) for 1hr.

		
Placement on Agni	Water droplets inside funnel	Corking of Glass Funnel
		
Spike form collection of Rasa Karpura inside Glass funnel		

Step 5

Collection of Final Product

After swangashitata, sandhibandhan was removed carefully and glass funnel was taken out from sharava. Here we can appreciate collection at two places:

→ 1st - Final product Rasa karpura was collected from inner surface of funnel which was looking like needle like crystals having bright white shining colour.

→ 2nd - White coloured amorphous powder was present on the top of sharava which can be labelled as Residue.

	
Careful scraping of Sandhibandhana & Collection of Rasa Karpura(HgCl ₂)	



Needle like crystals of Rasa karpura from inner surface of funnel



Residue - White coloured amorphous powder from top of sharava (Na_2SO_4)

To avoid contamination with the help of glass rod Rasa Karpura was collected carefully by scraping method. The total

weight of Rasa Karpura was 17.5gms. Further it was stored in air-tight glass container.



Final product Rasa Karpura

Rasa Karpura (17.5gms)

Residue (42gms)

DISCUSSION

Rasakarpura is one of the Saagni, Nirgandha murchana of Parada which is prepared by KupipakwaRasayan preparation method using Shuddha Parada, Conc.Sulphuric acid and SaindhavLavana. Here in state of classical Valukayatra, Abhinav Valuka

Yantra is used which makes this preparation simple, cost effective, easy to demonstrate and with good yield. One should be very careful while heating Parada with Conc. Sulphuric acid since during this procedure extensive fumes are seen which are toxic in nature and if inhaled with long exposure can

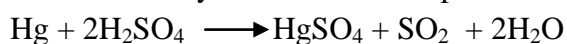
cause eye irritation, redness, burning sensation, breathlessness, throat irritation etc. Rasakarpura is enlisted as poisonous substance under the Ayurvedic and Unani system of medicine in Schedule E1 of Drug and Cosmetic Act 1940 and Rule 1945. Total 77 formulations were found in various classical texts, in which Rasakarpura is one of the ingredients.

Probable reaction

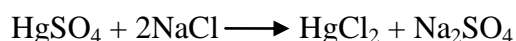
The probable chemical reaction in the preparation of *Rasa karpura*

* *Parada* (Mercury) is the chief ingredient of Rasakarpura.

* *Gandhakamla*, the concentrated Sulphuric acid when heated with mercury; it will convert mercury into Mercuric sulphate



* In second reaction, Chloride content of *Saindhava Lavana* (Sodium chloride) react with the sulphate form of mercury and forms chloride compound of mercury i.e. Mercuric chloride.



This mercuric chloride is *Rasa Karpura*.

This *Rasa Karpura* is highly toxic because of its solubility and due to so called high toxicity, it is one of the neglected preparations in pharmaceutical industry. But in real sense, if processed properly and administered in therapeutic dosage (1/64 to 1/32 Ratti), this *Rasa Karpura* is highly effective against *Krimi* and *Twachagata rogas*. South Indian states like Andhra Pradesh and Tamilnadu use *Rasakarpura* is popular as a home remedy for many infectious diseases. It is administered

judiciously by following proper *matra*, *kala* and *anupana*. If we consider all these points one can say physicians can use *Rasa Karpura* in their day to day clinical practice.

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