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## A review on *Chaturvidha Rasayana*

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### ABSTRACT

The *Rasashastra* literally means the "Science of Mercury". It is a specialized branch of *Ayurveda* mainly dealing with materials which are known as '*Rasa Dravyas*'. Generally, these *Dravyas* are classified into four different classes named - *Rasa*, *Dhaatu*, *Ratna* and *Visha*. The class of '*Rasa*' is predominantly possessing *Rasaayana*. *Rasa Kalpas* popular because of lesser dosage and quickness in action. *Rasaoushdhis* are mercurial compound. Specific qualities of *Rasaoushdhi* are the various substances are used in formulation they are converted into micro size. Due to metal, mineral presence in formulations they are more efficacious and quick acting in small dose. *Rasaoushdhi* show their therapeutic and *Rasayana* efficacy. Shelf life of *Rasaoushdhi* is more. *Rasaoushdhi* when used internally in accurate dosage and regime have proved effective in curing many diseases condition and help to promoting life and health. *Rasaoushdhis* also improve immunity and prevent onset of disease.

**Key words:** *Ayurveda*, *Rasashastra*, *Rasadravya*, *Chaturvidha Rasayana*.

### INTRODUCTION

The *Rasashastra* literally means the "Science of Mercury". It is a specialized branch of *Ayurveda* mainly dealing with materials which are known as '*Rasa dravyas*'. Generally, these *Dravyas* are classified into four different classes named- *Rasa*, *Dhaatu*, *Ratna* and *Visha*. The class of '*Rasa*' is predominantly possessing *Rasaayana*. Use of metals for their use in therapeutic formulations is very well described by '*Charaka*' with

reference to preparation of '*Lohaadi Rasaayana*' and by '*Susruta*' with reference preparation to '*Ayaskruti*'. *Ayurveda* has been divided into 8 branches by our *Acharyas* and *Rasayanas* is one of them. According to *Acharya Sharangdhar* and *Gopal Krishana Bhatt*, *Rasayana* is medicine which increase *Ojas*, cures diseases and delays ageing. In post *Samhita* period new class of drug form known as *Bhasma* came into existence in the science of '*Ayurvedic Pharmaceuticals*', with of two new techniques. '*Shodhana*' and '*Maarana*'. '*Rasaousadhis*' although classified in two distinct classes. 1. Mercurials and 2. Non-mercurials. Use of *Parada* in therapeutics was started as a bio-enhancer *Rasayana* word formed by union of two words *Rasa* (nutrition) and *Ayana* (circulation and promotion). *Nagaarjuna*, is considered the first to have used mercury and is believed to be one of creator treatment by metal and mineral used in appropriate form. The pharmaceutical literature of *Rasashastra* the word *Rasayana* has been used in two senses. First for rejuvenation while describing properties of a substance. On the other hand, this word is used for

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*Chaturvidha Rasayana* or *Rasayana* word used for whole group of medicine having mercury or another mineral in them. All *Rasa Kalpas* contain *Parad* and *Gandhak*. For ex, Cinnabar as a compound has been used in traditional medicines for thousands of years as an ingredient in various medicine. Such these traditional medicines are still in use today.

“*Alpamatroprayogitvad Aruchedaprasangatah*

*Kshipramarogyadyitvad Ausadhebyo Adiko Rasaha*”

*Rasa Kalpas* popular because of lesser dosage and quickness in action. *Rasaoushdhis* are mercurial compound. *Parad* most important substance in *Rasa Shastra*. *Rasaoushadhi* prepared from *Sudha Parad*, *Hingulotha Parad*. To increase the quality of *Parad* it is processed with different substances.

Specific qualities of *Rasaoushadhi* are the various substances are used in formulation they are converted in to micro size. Due to metal, mineral presence in formulations they are more efficacious and quick acting in small dose. *Rasaoushdhi* show their therapeutic and *Rasayana* efficacy. Shelf life of *Rasaoushdhi* is more. But here *Rasaoushdhi* are prepared after proper purification procedure. The substances are subjected to different standard procedures.

Based on their procedure in *Rasashastra* we will get few *Rasayanas*,

- a) *Kharaliya Rasayana*
- b) *Parpati Rasayana*
- c) *Pottali Rasayana*
- d) *Kupipakwa Rasayana*

### KHARALIYA RASAYANA

*Parad* and *Gandhak* and / or herbs or minerals / metals ingredients are ground together in a mortar *Khalva* to produce a finely powdered drug. as per the terminology of *Ayurved*, the formulation is known and classified as ‘*Kharaliya Rasayan*’.

*Kharaliya Rasayana* got importance the mercury and other ingredient of the formulation are grinded in mortar known as *Khalva* hence termed as *Kharaliya*

*Rasayana*. The speciality of *Kharaliya Rasayana* lies in binding different varieties of drug in to single molecular form and minimizing dose and more effective in action. *Khalvi Rasa – Kajjali* contains mercury & Sulphur / herbs / mineral / metal ingredients are ground together in a mortar to produce a finely powdered drug. Rubbing between surfaces of mortar and pestle i.e., surface phenomena, some heat is produced so, there may be possibility of occurrence of chemical reaction in between materials and media. New and desired qualities may be produced by such reaction. In the *Rasashastra* mentioned the procedures to *Rasa Kalpas* used *Khalvi Rasayana* in control the unsteadiness of mercury. *Kajjali* is key ingredient. Main role of *Kajjali* as a *Rasayana* drug. *Kajjali* is prepared from 1 part purified *Parad* and 1 part purified *Gandhak*.

### Procedure

- Collection of raw material (*Rasadravya*, *Vanoushadhi*, *Bhavana Dravya*)
- *Kajjali Nirmana*
- Mixing of all ingredient
- *Bhavana*
- Ready to use in form of *Vati*, *Guti*, etc.

### Khalva Yantra

*Khalva Yantra* which includes both mortar & pestle, is used for triturating / pounding different types of herbal & mineral drugs. It is an instrument made up of good quality of stone in different shapes & size useful for trituration used for grinding, powdering & mixing medicine.

### Benefit of Bhavana

*Bhavana* is *Samskara* in which *Churna* of metal and mineral are subjected to *Mardana* with the specified liquid until the liquid get dries up

- Increase therapeutic efficacy
- Make *Rasaoushadhi* non toxic
- To enhance drug palatability
- Particle size reduction
- *Purva Karma* of *Marana*

- Reduction hardness

*Rasavarga Dravya* undergoes repeated *Samsakras*, which bring about change in the characteristic and make them therapeutic effective.

#### Significance

- Prolonged shelf life of formulation
- Increase therapeutic efficacy
- Decrease dosage
- Decrease duration of treatment

*Kharliya Rasayan* is the main foundation for most of the *Rasaoushadis*. *Kajjali* plays an important role in this, it has *Ushna Guna* and *Katu Vipaka* which acts as *Yogavahi* and *Tridoshghana*.

**Examples:** *Kajjali*, *Tribhuvankirti* *Rasa*, *Aarogyavardhinivati*

#### PARPATI RASAYANA

*Parad* and *Gandhak* are ground with specified metal *Bhasma* or without metal *Bhasma*, to prepare a homogeneous black coloured fine powder known as '*Kajjali*'. The powdered '*Kajjali*' is then subjected to heating in an iron pan to obtain a molten mass. The molten mass is then immediately poured and spread evenly on a flat soft surface of a banana leaf, which is usually kept over soft surfaced platform prepared from fresh wet cow dung or mud. Fresh cow dung or mud is selected for to provide smooth and even platform for the leaf placed on it and to provide free flow and even spread of the melted *Kajjali* on the surface of the leaf. The poured *Kajjali* mass is then immediately covered with another banana leaf and is hand pressed. The covered banana leaf is then removed to find a thin flat sheet of the material is like *Papad* which is termed as '*Parpati*'.

*Acharya Nagarjuna* has written *Rasendra Mangal* in 8<sup>th</sup> century related to explanation of *Parpati Kalpana*. In 11<sup>th</sup> century *Chakrapani* explained *Parpati* in *Chakradatta*. In 19<sup>th</sup> century *Acharya Govinda Das Sen* explain *Parpati* in *Bhaishajya Ratnavali*. *Parpati* is the *Sanskrit* word denote a thin flake like preparation. Has

shape of thin *Papad*. *Parpat*, *Parpatika*, *Parpati*, *Pota Bandha* are the synonyms of *Parpati*.

*Parpati Kalpana* is one of the method describe among the 25 other *Parad Bandha* method. Heat application is performed; therefor heat energy may enhance its therapeutic efficacy. Application of *Gomay*, which comes from alimentary canal of the cow so may have enzymatic activity. *Ghee* useful in treating indigestion so may have synergetic effect along with *Parpati*.

#### Preparation of Parpati Kalpana

- *Samanya* or *Vishesh Shodhana*
- Homogenous mixture of the ingredient and *Kajjali* is prepared
- Mixture is taken in ghee smeared iron pan over *Mandangani*
- Transfer melted mixture on *Kadali Patra* which placed over *Gomaya*
- Cover with another *Kadali Patra* and *Gomaya* and press it.
- Allow to cool and flakes of *Parpati* taken out.

#### Parpati Paka

3 *Paka* have been mentioned *Mridu*, *Madhyama*, *Khara*. In these *Mridu* and *Madhyama Paka* is best to use in therapeutically.

#### Paka Kalia Pariksha

1. *Mridu Paka* - melted *Kajjali* attains *Chandrika Varna*
2. *Madhyama Paka* - melted *Kajjali* attain tail consistency
3. *Khara paka* - melted *Kajjali* attains *Rakta Varna*.

#### Paka Pachyata Pariksha

1. *Mridu Paka* - soft smooth, black, bend on breaking, shining less
2. *Madhyama Paka* - black, shining, while bricking cut sound occurred.
3. *Khara Paka* - blackish brown, burnt pieces powder like structure.

### Prayoga of Parpati Kalpana

- *Samanya Prayoga* : 1-2 Ratti
- *Vardhaman Prayoga* : according to *Rasa Tarangini* starting with 2 Ratti increased gradually up to 10 Ratti.

### Significance

- Prolonged shelf life of formulation
- Increase therapeutic efficacy
- Decrease dosage

**Example:** *Rasa Parpati, Panchamritaparpati, Swarnaparpati*

### POTTALI RASAYANA

The '*Kajjali*', prepared with prescribed ingredients is wrapped in a silk cloth to prepare a bundle termed as '*Pottali*'.

*Shudha Gandhak* of required quantity is taken in a stainless steel wide mouthed pan. The pan is kept on fire and the *Gandhak* is allowed to melt. The molten sulphur serves the purpose of *Gandhak* bath for the '*Pottali*'. *Pottali* is immersed in the *Gandhak*, which is subjected to intensive heating. The powder of '*Kajjali*' bundled in cloth gets hardened by this intensive heating and gets converted into a hardened ball is known as '*Pottali Rasa*'.

*Pottali Rasa* is most instantly acting drug formulation among all and is usually prescribed in medical emergencies.

*Pottali Kalpana* first described by *Nityanath Siddha* in 13<sup>th</sup> century AD, in the book *Rasaratnakar*. *Sharangdhar* also mentioned formulation of these *Pottali Kalpana* in the *Sharangdhar Samhita*. *Ras prakash sudhakar* book author *Yashodhar* also mentioned about *Vajra Pottali*. In the classics like *Yog Ratnakar, Sidhabheshajya Manimala, Rasayansar* mentioned about *Pottali Kalpanas*. *Pottali* defined as to collect scattered material to compact and comprehensive size. *Pottali* is very important form of mercurial preparation.

Different method of preparation of *Pottali Kalpana* like *Bhavana Vidhi, Putapaka Vidhi, Pottali Paka Vidhi*. *Pottali* preparations are not done by particular

method, some prepared by trituration, while some are prepared by boiling liquefied sulphur, some are processed through incineration

### Bhavana method

*Bhavana* method in this method, the all ingredients are triturated with a liquid media in a *Khalva Yantra* and made into a pill or stored in fine powder form. This method of preparation is exactly similar to other *Khalvi Rasayanas*, that is only trituration without any *Agni*. Example : *Hamsa Pottali, Gandhakadi Pottali Rasa*.

### Putapaka (Musha) Method

This is method in which ingredients for preparing *Pottali* are triturated with fresh juices or prescribed liquid media etc. and subjected to *Putapaka* to get the final product, usually obtained in the form of *Bhasma*. In *Rasayoga Sagara* mentioned, *Divya Jala* as *Bhavana Dravya* to make the *Pottali*. Type of *Putapaka* different from *Kukkuta Puta* to *Gaja Puta* and time required from 1 *Yama* (3 hrs) to three days, depending on the nature of substance used as ingredients. Example: *Rasa Pottali, Mriganka Pottali*.

### Procedure

- *Purva Karma*
- *Pradhana Karma*
- *Paschyat Karma*

### Purva Karma

- Identification and collection of raw material
- *Shodhan* of raw material
- Preparation of *Kajjali*
- Arrangement of *Valuka Yantra*
- Collect cloth, thread, mud pot, firing apparatus
- Preparation of *Pottali*

### Pradhan Karma

- *Paaka* of *Rasaoushadi* upto *Siddhi Lakshana*

### Paschyat Karma

- *Pottali* removed after *Swangashita*



- *Gandhak* scrapped out which adhered to that *Pottali*
- Remove silk cloth

#### Examination of final product

Metallic sound, hard, lustre, colour.

#### Significance

- Easy to administer
- Lifesaving remedy
- Long shelf life
- Easy to handle

#### Mode of administration

*Pottali* are having *Gutikakar* should rubbed over stone by applying *Ghrita* or *Madhu* and paste is administered orally. *Hiranya Garbha Pottali* administered in the form of *Pradhamana Nasya*.

#### Pathya and Apathya

In text *Rasakamdhenu*, author mentioned the *Pathya*, *Apathya* Ahara- Vihar and also mentioned

treatment if any complication occurs during *pottali* administration

Example: *Hemagarbhapottali*, *Rasagarbhapottali*

#### KUPIPAKWA RASAYANA

*Kupipakwa Rasayana* is composed of 4 words *Kupi*, *Pakwa*, *Rasa* and *Ayana*. *Kupipakwa Rasayana* also known as *Sindhoo Kalpana*. A product from *Parad* and *Gandhak*, etc. is prepared in glass bottle by applying heat.

*Kupipakwa Rasayana Kalpana* is important among other *Kalpana* because of having properties

- It requires minimum dose.
- Potency of these drugs remains as it is for longer period.
- Easy for administration and preservation.
- When mixed with other drugs it reduces the dose of other drugs.

- Due to its augmenting effects, due to quicker action chemical bonding present in *Kupipakwa Rasayana* is stronger respectively.

#### History

In 9<sup>th</sup> century AD *Rasa Hridaya Tantra* first time mentioned *Gandhak Jarana*, further developed as *Kupipakwa Rasayana*. Information of *Rasasindhur* available in *Rasaprakash Sudhakar* in 13<sup>th</sup> century.

#### Types

1. Ingredients - *Sagandha*, *Nirgandha*
2. Manufacturing - *Antardhoom* (cork applied in beginning and vapours not allowed to come out. *Bahirdhoom* (cork applied after burning of sulphur)
3. Place of finished product - *Kantastha* finished product deposit at neck, *Talastha* - finished product deposited at bottom of *Kupi*, *Ubhayastha* - finished product obtained from both the sides.

#### Procedure

The whole procedure can be divided under the three headings

- a) *Poorva Karma*
- b) *Pradhana Karma*
- c) *Pashchat Karma*

#### Poorva Karma

Appropriate equipment - *Kupi*, *Kapad Mitti*, *Valuka Yantra*, *Brashtri*, Fuel, Different *Shalaka*, Copper coin, Torch, Thermometer, Electric blowers.

- Purification of ingredients
- Preparation of *Kajjali*
- *Bhavana*
- *Kupibharana*

**Pradhana Karma:** The following points included

- Temperature measurement
- Heating pattern
- *Shalaka Sanchalana*
- Observation of furnace, fumes and flames

- *Mukha Murdana*
- *Swanga Sheetakarana*

**Paschat Karma:** Following measures comes under this karma

- *Kupi Uddharana* - Removal of *Kupi*
- *Kupi bhedana* - Breaking of *Kupi*
- *Pramanya* - Evidence of genuineness

#### Classification of *Kupi Pakwa* preparation

1. *Sagandha* - *Gandhaka* is used Ex. *Makaradhwaja* and *Rasa Sindhura*.
2. *Nirgandha* - *Gandhaka* is absent. Ex *Rasa Manikya* and *Vyadhiharana Rasa*

#### Based on manufacturing method

1. *Antardhuma* - Fumes appear in the beginning. Example: *Sila Sindhura* and *Rasa Manikya*
2. *Bahirdhuma* - When *Gandhaka* is totally burn then fumes appear. Example: *Sila Sindhura* and *Rasa Manikya*. *Rasa Sindhura* and *Makaradhwaja*.

#### Based on accumulation of desired product

1. *Galastha* - The product is obtained from the neck of bottle. Ex. *Makaradhwaja*, *Rasa Sindura*.
2. *Talastha* - The product is obtained from the bottom of bottle. Ex. *Sameerapannaga Rasa*, *Swarna Vanga*.
3. *Ubhayastha* - The product is obtained from both neck and bottom of bottle. Ex. *Hinguliya Manikya Rasa*, *Sameerapannaga Rasa*.

#### DISCUSSION

*Rasaoushdhi* when used internally in accurate dosage and regime have proved effective in curing many diseases condition and help to promoting life and health. *Rasaoushadhis* are also improve immunity and prevent onset of disease. The interaction between metal or mineral and herbs during manufacturing the formulation may be increase or decrease pharmacology or toxicology effect.

Large number of potent formulations in *Rasashastra* which known as *Rasayana*. Number of formulations in *Rasayanadhikar* there are so many chapter that work

principally as *Rasayana* with proper diet and adjuvant followed during treatment.

#### *Kharaliya Rasayan*

During fraction between surfaces of mortar and pestle i.e., surface phenomena, heat is Generated so there may be possibility of occurrence of chemical reaction in between substance and media. New and desired qualities may be produced by such reaction. Physical changes occur like.

- Reduction in hardness: By continuous grinding the hard substance become soft.
- Particle size reduction: By continuous and repeated rubbing action helps in reduction of particle size. In this way it directly affects the rate of absorption.
- Binding agent: liquid media acts as a binding agent.

In the current situation, there is a need to develop new formulations along with the specific modification in the older formulation to gain wider acceptance

#### *Pottali rasayana*

*Pottali Rasayana* is a specified pharmaceutical technique. This *Kalpana* has been developed for help in potentiating and stabilizing the bonding between the content and obtaining high therapeutic efficacy. In *Pottali Rasayan*, the ingredients are made into a compact state for easy administration, transportation and preservation. But now a days its practical usage is very less. *Pottali Kalpana* has four different methods of preparations are *Bhavana* method, *Putra Paka* method, *Varatika Purana* method and *Gandhaka Drava Paka*. But each method of preparation differs in shape, consistency and form, but these all methods are included in *Pottali Kalpanas* for drug's efficacy after complete processing. The ancient literature like *Yogaratanakara*, *Rasamrutha* have explained details related to *Pottali Paka* in *Gandhaka Drava* method.

#### *Parpati Rasayana*

The ingredients of every *Parpati Kalpana*, Mercury and Sulphur are the primary ingredients. *Parpati Rasayana* are the most popular among the processing's of *Parad* and are widely used. These preparations are

therapeutically effective mineral or Metallic formulations; including both *Sagandha* and *Nirgandha Parada Yukta Yogas*. The *Parpati Rasayanas* are highly therapeutic value, more potent, less toxic and cost-effective medicines.

#### **Kupipakwa Rasayana**

In *Rasa Shastra* when *Kupipakwa Rasayan* is compared with other formulations, due to its quicker action on minimum dose this is best among other. Pattern of Heating and preparation of *Kajjali* are most important to get maximal yield and increase effectiveness of preparation without any adverse effects or Side effects. The *Kramagni* are the most effective heating pattern for the preparation of *Kupipakwa Rasayan*.

*Mrudu Agni* is this stage where *Kajjali* and *Gandhak* fumes are emitted. This is tested with the help of a *Shital Shalaka*. Sulphur starts melting at this stage. The temperature at this stage ranges in between 150°C -250°C. *Madhyam Agni* starts from melting of sulphur followed by profuse fuming. At this stage, clearing the mouth of glass bottle by hot rod is done. The temperature ranges in between 350°C-450°C. *Tivra Agni* in this stage Fumes are stop from bottle and flame is seen at the mouth of the glass bottle. This stage is ideal to do Corking for *Bahirdhoom Kupipakwa rasayana*. At this stage temperature of glass bottle ranged between 450°C-650°C.

#### **CONCLUSION**

*Rasayanas* help to achieve optimal physical strength, of sense organs, improve qualities of *Dhatu*s, longevity, increase immunity or *Bala* and mental competence. *Rasayana* nourishes the whole-body system and improves immune system and because of these the natural resistance to infection will be more. the need of the time in changing environment with standardize during the developing era of *Rasa Chikitsa* and it's more of value in present days as the occurrence of diseases like AIDS, Tuberculosis and Diabetes Mellitus etc. These are still uncontrolled. Now a days better equipment and techniques of drug analysis help in authenticating the *Rasaoushdhi* or *Rasayana* preparation and their effects on health.



Fig. 1: Kharliya Rasayana



Fig. 2: Parpati Rasayana





Fig. 3: Pottali Rasayana



Fig. 4: Kupipakwa Rasayan

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