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Pharmaceutical study of *'Rasasindoora'*

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Abstract

Rasashastra is a branch of Ayurveda including the study of metallic and mineral preparations. *Rasa Dravya* is processed with herbs as such to convert from *Nirendriya* and *Sendriya*. *Rashaushadhi* prepared from mercury are divided into four categories: *Kupipakwa, Kharaliya, Parpati and Pottali.* Out of these *Kupipakwa* and *Pottali Rasayana* are more potent and fast acting. Present study aimed to study the pharmaceutical process involved in the preparation of *Rasasindoora* and to decide the Regulation of heat and record of temperature changes while preparing *Rasasindoora*.

Keywords: *Rasasindoora*, *Kupipakwa, Kharaliya, Parpati, Pottali*

Introduction

Rasasindoora (Red sulphide of mercury) –as this medicine is prepared with *Ras* (mercury) and the outcome is in *sindura* colour, thus it is named as *Rasasindoora*. This is also known as *Kupipakwa rasayana*, since it is prepared in *Kacha Kupi* (glass bottle). According to *Swami Harisarananda* who made an extensive study in this direction [1] states that the *Kupipakwa Rasayan* method has come into being since 10th century A.D. First recordings of *Rasasindoora* preparation mentioned in his book *Rasa Prakash Sudhakar* by *Acharya Yashodhara [2]*.

Ayurveda is science of life and *Rasashastra* is branch of it including the study of metallic and mineral preparations. Here the metal and minerals termed as *'Rasa Dravya'* are processed with herbs, as such to convert from *nirendriya* and *sendriya*. Although this is hypothetical, it is worth mentioning the process of *shodhana* and *marana*. *Ras aushadhi* prepared from mercury are classified into four categories:

- *Kupipakwa Rasayan*
- *Kharaliya Rasayan*
- *Parpati Rasayan*
- *Pottali Rasayan*

Kupipakwa Rasayan:

Kupi means *Kacha Kupi* (glass bottle) and the *Pakwa* means *Agni Paka* (subjecting for fire).

Out of this *Kupipakwa* medicines *Pottali Rasayana* are more potent and fast acting. As it is one of the important *Kupipakwa Rasayana* and due to its actions on *Kushtha, Vajikaran, Yakshma, Gulma,* and useful in *Prameha, Shula, Pandu, Agnimandya* etc, it is passionate to prepare *Rasasindoora* [3].

Aim and Objectives

- To study the pharmaceutical process involved in the preparation of the *Rasasindoora,* as per the selected reference of *Rasatarangini*.
- To decide the *Praman* of *Agni* that is Regulation of heat and record of temperature changes while preparing *Rasasindoora*.

Materials and Methods

The preparation of *'Rasasindoora'* was done as mentioned in *'Rastarangini'* -

Ingredients:

- *Shuddha Parad* - 100 gm
- *Shuddha Gandhak* - 100 gm
- *Vatankur Swaras* - q.s

Dose: 1 to 2 *Ratti (125-250mg)*

Procedure

The following are the stages of *Rasasindoora* preparation.

1. *Rasa Gandhak Shodhana*: Purification of mercury and sulphur.
2. *Kajjali Nirmana*: Preparation of *Kajjali*.
3. *Kajjali Bhavana*: - Grinding of *Kajjali* along with herb juices like *Vatankur Swaras*.
4. *Kupi Bhavana*: - Filling of *Kajjali* into the glass bottle that is already enwrapped with clay smeared cloth.
5. *Valuka Yantra Sthapana*: - Arranging the bottle amidst sand in an Iron through which is kept in the kiln.
6. *Paka Vidhi Prathama*: -
Giving heat - *Mrudu Agni*.
7. *Paka Vidhi Dvitiya*: -
Giving heat - *Madhyam Agni*
8. *Kupi Mukha Mudrana*: -
Closing and sealing of the bottle.
9. *Paka Vidhi Trtiya*: -
Giving heat – *Tivra Agni*
10. *Kupi Bhagna Vidhi*: -
Breaking the glass bottle
11. *Ausadha Sangrahana*: - Collection and preservation of the medicine [4].

OBSERVATION

Results:

All stages of *Rasasindoor* preparation are divided into three phases.

1) Pre-heating phase
2) Heating phase
3) Post heating phase

PHASE 1

A) Process of *Shodhana* of raw material

1) *Parad Shodhana* (R.T.5/31)

Mercury is processed with decoction of *Triphala*, *Kumari Swaras*, *Brihati Panchang, Rakta Sarshap* and *Chitrakmula*.

2) *Gandhaka Shodhan* (R.T.8/7-11)

Sulphur is processed (*Bharjana)* in *Goghrut* (Cow's Ghee) and *Nirvapan* in *Godugdha*. There after the *Prakshalan* (washing) with hot water.

B) *Kajjali Nirman*

Shuddha Parad and *Shuddha Gandhak* are added in the ratio of 1:1.

C*) Kajjali –bhavana*

Vatankura Swarasa is added to *Kajjali* and *Bhavana* is done till *Kajjali* comes back to dry Powder stage.

D) Filling of material in *Kupi*: 1/3 rd of the bottle is filled.

E) Firing of *Kupi* in *Valuka Yantra*

Time	Temp	Observation
06:00 am	0 ^{0}c	Corking of bottle was done
09:00 am	45^{0}c	Corking was removed. No change in material.
10:00 am	98^{0}c	White coloured fumes coming out *Kajjali*-moist
12:00 pm	132^{0}c	Dense yellow coloured fumes coming out, *Kajjali*-moist, *Shalaka Chalan* done.
02:00 pm	150^{0}c	Dark yellow coloured fumes diminished, *Kajjali* like *Avaleha*.
04:00 pm	200^{0}c	White coloured fumes coming out. *Kajjali-Ardra-Shushka*
06:00 pm	270^{0}c	White coloured fumes coming only after *Shalaka Chalan* & blue Flames were taking place at the tip of *Shalaka* due to *Gandhak Kajjali*-slightly hard
08:00 pm	350^{0}c	After *Shalaka Chalan* very few fumes were present.
10:00 pm	460^{0}c	No fumes after insertion of *Shalaka*, bluish flame of *Gandhak* was also not present, corking of bottle was done, filling of *Chulhika* with coal & *Swangashitikaran*.

PHASE 2

Heating

Heating plays an important role as the *Agni* maintained throughout procedure should be sequentially *Mrudu, Madhyam* and *Tivra Agni*.

- *Mrudu Agni* - upto 230^{0}c.
- *Madhyam Agni* - 230 C - 450 ^{0}c.
- *Tivra Agni* – 450 C -550 ^{0}c.

Paka Pariksha is done intermittently.

3) Post Heating Phase

- Corking of bottle
- Filling of *Chulhika* with coal
- *Swangashiti Karan* for 24 hours
- Breaking of bottle
- Separation of final product and storage

For the taken amounts of *Rasa* and *Gandhaka* 60.460 gms of *Rasasindoora* is obtained.

A) **Organoleptic parameters:**

- *Varna* – Sindoor varna ,shiny (Reddish brown)
- *Gandhak* - Odorless
- *Sparsha* – Soft on touch
- *Rasa* – Tasteless (*Niswadu*)
- *Shabda* - *Shabdhahin*

B) Other tests:

- *Rekha:* Red colored line mark on white paper.
- *Rekhapoornatva:* Powder enters in the finger crease of index finger and thumb.
- *Nishchandratva*: no luster

Conclusions:

Rasasindoora is *Kupipakwa Rasayan* which has different method of Preparation. For pollution control, time saving and fuel saving proper instrument or *Valukayantra* should be maintained. In phase I, II and III all Agni like *Mrudu Madhyam* and *Tivra Agni* should be maintained with the help of Pyrometer.

Accuracy & Continuity in the heat regulation with the help of modified instrument like Portable *Valukayantra* which is made from cost iron (Portable heater) is helpful. When we will use modified *Valukayantra* then 3 to 4 *Kupies* can be placed.

References

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