

PHARMACEUTICAL STANDARDIZATION OF PANCHSHARA RASA

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ABSTRACT :

Rasa Shastra is a branch of Medicine, which deals with preparation of the drugs with metals and minerals having wide range of therapeutic efficacy, possessing innate qualities like quick action, less dose, tastelessness, prolonged shelf life and better palatability. *Panchshara Rasa* is one such *Rasoushadhi* mentioned in *Bhaishajya Ratnavali*, indicated in *Shukrakshaya*. *Parada*, *Gandhaka* and *Shalmali moola* are the main ingredients of *Panchshara Rasa*. *Shodhana*, *Mardana*, *Bhavana* and *Parpati nirmana* are the important steps involved in preparation of *Panchshara Rasa*. *Panchshara Rasa* is a blend of *Kharaliya* and *Parapati Rasayana*. Standardization of Ayurvedic drugs at various levels starting from the selection and collection of raw material to the final product is essential to produce a safe and efficacious drug. Therefore the present study has been planned to standardize the method of preparation of an important Herbo-mineral formulation i.e. *Panchshara Rasa*. The detailed pharmaceutical study of *Panchshara Rasa* will be discussed in the full paper.

Key words: Standardization, *Panchshara Rasa*, *Rasoushadhi*, *Parpati*.

INTRODUCTION: The nature possesses immensely valuable and powerful medicines in the form of metals, minerals and plants. However, most of the drugs as such are not absorbable into the biological system, until and unless they undergo certain modifications. Some specialized techniques are adopted to make these drugs absorbable and therapeutically viable. The drug manufacturing processes of Ayurveda are included in discipline of *Bhaishajya Kalpana* and *Rasa Shastra*. Heating, boiling, quenching, dipping, trituration, distillation, washing, filtering etc. are the important procedures involved in drug manufacturing. During *Shodhana*, *Jarana*, *Marana*, *Bhavana* etc. classical processes the above mentioned procedures are adopted. All these procedures play a significant and vital role in the pharmaceutical processing of drug materials. Mineral materials as such are claimed to be toxic by Ayurvedic *Rasa*

texts. By adopting specialized pharmaceutical procedures like *Shodhana*, *Marana*, *Jarana*, *Murchchana* etc. they are converted into nontoxic, safe and potent therapeutic forms. The herbal drugs and animal products used during these processes form a kind of Herbo-mineral complex. When processed with metals and minerals they make them not only useful therapeutically but also enhance the disease combating properties in them.

AIM AND OBJECTIVE:

- Pharmaceutical standardization of various steps involved in the preparation of *Panchshara Rasa*.

IMPORTANCE OF PRESENT STUDY

- Due to changing life style and food habits there is increased incidence of *Shukrakshaya*. Therefore, it is necessary to find a solution for it through Ayurveda.
- As the appropriate parameters for standardization of *Panchshara Rasa*

are not yet established, an attempt has been made through the study to

standardize the method of preparation of *Panchshara Rasa*.

MATERIALS AND METHODS

Chief Reference: Bhaishajya Ratnavali /Vajikaranadhikara/Shloka: 281-282

Total pharmaceutical study was carried out in five stages,

Stage I	<i>Shodhana of Parada</i> (R.T. 5/27-29) <i>Shodhana of Gandhaka</i> (R.R.S. 3/20-22)
Stage II	Preparation of <i>Shalmali moola swarasa</i> (Sa.S.M.K. 1/ 4) <i>Mardana of Parada</i> with <i>Shalmali moola swarasa</i> (B.R. <i>Vajikaranadhikara Shloka</i> : 281-282) <i>Bhavana of Gandhaka</i> with <i>Shalmali moola swarasa</i> (B.R. <i>Vajikaranadhikara Shloka</i> : 281-282)
Stage III	Preparation of <i>Kajjali</i> (B.R. <i>Vajikaranadhikara Shloka</i> : 281-282)
Stage IV	<i>Kajjali Paka</i> (Preparation of <i>Parpati</i>) (B.R. <i>Vajikaranadhikara Shloka</i> : 281-282)
Stage V	<i>Bhavana of Parpati</i> with <i>Shalmali moola swarasa</i> (R.Y.S.,Part-II, <i>pakaradirasa Shloka</i> : 103-104) Preparation of <i>Panchshara Rasa</i> (B.R. <i>Vajikaranadhikara Shloka</i> : 281-282)

(R.T.- Rasa Tarangini, R.R.S.- Rasa Ratna Samucchaya, Sa.S.M.K.- Sharangadhara samhita Madhyama Khanda, B.R.- Bhaishajya Ratnavali, R.Y.S.- Rasa Yoga Sagara)

Panchshara Rasa Preparation:

Reference	Bhaishajya Ratnavali <i>Vajikaranadhikara</i> / 281-282
Materials	<i>Suddha Parada</i> -500gm <i>Suddha Gandhaka</i> -500gm <i>Shalmali moola swarasa</i> -Q.S.
Method/Principle	<i>Mardana, Bhavana, Parpati nirmana</i>
Apparatus	<i>Khalwa Yantra, Darvi, Steel plate, Vessels.</i>

PROCEDURE: *Shodhana of Parada* was carried out by doing *Mardana* with equal quantity of *Sudha churna* for three days. After *mardana* it was filtered through double layered cloth. *Lasuna kalka* was added in equal quantity and *Saindhava lavana* was added in half the quantity of *Parada*. After completion of *mardana* washing of contents was done with hot water to obtain *Shuddha Parada*. *Shodhana of Gandhaka* was carried out by placing it in an iron ladle along with sufficient quantity of *ghrita*. It was heated up to melting and poured in a vessel of milk. The mouth of vessel was tied with cloth which was smeared with *ghrita*. Then it was washed with hot water and powdered. This procedure was repeated for seven times to obtain *Shuddha Gandhaka*. *Shalmali moola* was pounded to coarse powder and added with eight times of water. Then it was heated on moderate

flame and reduced to one fourth to obtain *swarasa*. *Shuddha Parada* was taken in *khalwa yantra* and *mardana* with *Shalmali moola swarasa* was done for 21 days. *Shuddha Gandhaka* was taken in *khalwa yantra* and triturated with *Shalmali moola swarasa* for 21 days. After trituration, *Mardita Parada* and *Bhavita Gandhaka* were taken in *khalwa yantra* and *mardana* was done to obtain black, fine and lusterless powder i.e. *Kajjali*. *Kajjali* was taken in a ghee smeared *darvi* and melted in *mandagni*. The melted *kajjali* was poured on banana leaf and covered with another banana leaf and compressed by a steel plate to prepare *Parpati*. *Parpati churna* was subjected to *bhavana* for 21 days with *Shalmali moola swarasa*. The obtained final product was compressed to 125 mg tablets of *Panchshara Rasa*.

OBSERVATIONS:

- *Parada* appeared more bright after *Shodhana*.
- After *Shodhana* colour of *Gandhaka* turned bright yellow.
- The colour of *Shalmali moola swarasa* was reddish brown.
- During *Mardana* of *Parada* with *Shalmali moola swarasa*, initially *Parada* turned into small globules and later it was converted into silver colour paste form.
- After *Bhavana* of *Gandhaka* with *Shalmali moola swarasa*, *Gandhaka* turned dark brown in colour.
- During *Kajjali* preparation, mixture turned black after one day of *Mardana*. After complete loss of shine mixture turned very smooth.

RESULT: Table Showing the Result of preparation of *Panchshara Rasa*

Weight of total contents taken	Quantity of drug obtained
1000 gm	1030 gm

DISCUSSION: The pharmaceutical procedures adopted in this study are *Shodhana*, *Mardana*, *Bhavana* and *Agnipaka*. *Shodhana* is done for *Parada* and *Gandhaka*. It is done to remove visible & invisible impurities, to reduce the toxicity and to enhance the therapeutic property. *Mardana* with *Shalmali moola swarasa* of *Parada* was done. *Bhavana* of *Gandhaka* with *Shalmali moola swarasa* was done. *Kajjali* was prepared with *mardita Parada* and *bhavita Gandhaka*. *Parpati* was prepared with *Kajjali*. *Bhavana* of *Parpati churna* with *Shalmali moola swarasa* was done. Tablets of *Panchshara Rasa* were prepared.

Parada shodhana: Substances having *Ushna*, *Teekshna*, *Kshara*, *Amla* and *Lavana* property are considered as purifiers (*Sarva malaharah Kshara*)¹. Lime is an alkaline substance; it may be helpful in removing external and internal impurities of Mercury. *Lasuna* and *Saindhava lavana* have also *Ushna*, *Teekshna* and *Vishada* property which might be helpful in minimizing the toxic qualities of Mercury². Hence, these might have been suggested for *Shodhana*. Garlic

• During *Paka* (*Parpati nirmana*), molten *Kajjali* attains *taila* (oily) consistency. After *Paka*, *Parpati* was black coloured, easily breakable and on breaking, shinning silver colour is seen.

• After *Bhavana* of *Parpati churna* with *Shalmali moola swarasa*, the final product was smooth, black in colour and entering into the fine lines of fingers.

Precautions:

- *Mardana* should be carried out at a slow and steady pace to avoid spilling.
- *Kajjali paka* should be done on *mandagni*. Pressing should be done immediately after pouring melted *Kajjali* over the banana leaf.
- Tablets are to be preserved in absolute sterile and moisture free glass containers.

(*Allium sativum*) has been proved as a best antidote for heavy metal poisoning. Hence, processed *Parada* is augmented with antidote itself. Hence, one-step ahead in safety *Lasuna* was selected as a drug for *shodhana* of *Parada*.

Gandhaka shodhana: *Shodhana* of *Gandhaka* was carried out according to RRS3/22. This method was adopted basing on the properties of media to be used for *Shodhana*. *Goghruta* used for melting *Gandhaka* acts as *vishaghna* (removes impurities). Some impurities get mixed with it and are removed at the time of melting. Some impurities melt while heating and are dissolved in milk on pouring rendering *Gandhaka* free from blemishes. Calcium present in milk acts as reducing agent which helps in removal of impurities³. The impurities that are not malleable by heat like stones or impurities having higher melting point than sulphur are removed by filtering through cloth at the time of *Dhalana*. *Godugdha* and *Goghruta* are *pitta shamaka*, which reduce the *Tikshna pitta vardhaka* property of *Gandhaka*⁴.

Shalmali moola swarasa preparation: The juice extracted from a fresh green drug by pounding it and squeezing through cloth, is called *swarasa* (pure juice, native juice, extract). In case of dry drugs, extracting the *swarasa* by boiling is mentioned. The coarse powder of the *Shalmali moola* is taken, added with eight times of water and boiled till it reduces to a quarter⁵.

Mardana of Parada: According to *Charaka samhita* the ingredients of a recipe should be impregnated with the juice or decoction of other ingredients having identical potency⁶. By doing so the potency of the recipe will be amplified. When properly impregnated, even a small quantity of the drug becomes exceedingly effective. *Parada* is having *Virshya* properties and *Shalmali moola* is having *Shukravardhaka* properties. Therefore *Shalmali moola swarasa* was selected as a *mardana dravya* of *Parada* and *mardana* of *Shuddha Parada* was done with *Shalmali moola swarasa* for 21 days.

Bhavana of Gandhaka: *Gandhaka* is having *ushna virya* and *Shukrajanana* properties⁷; *Shalamli moola* is having *sheeta virya* and *Shukravardhaka* properties⁸. *Shalmali moola swarasa* was selected as a *bhavana dravya* of *Gandhaka* as it reduces the *ushnata* of *Gandhaka* and enhances the *Sukrajanaka* property of *Gandhaka*. Therefore *Shuddha Gandhaka* was subjected to *bhavana* with *Shalmali moola swarasa* for 21 days.

Preparation of Kajjali: *Kajjali* was checked for loss of shine at various stages of preparation and *mardana* was done up to it turned lusterless. After *mardana* for 3 hours the mixture turned black. After 15 hours *Kajjali* was checked for shine under the sun and small globules of mercury could be clearly observed. It took 42 hours for complete loss of shine and other characters of *Kajjali* to develop.

Preparation of Parpati: *Parpati Kalpana* is one among *Parada murchchita rasoushadhi*. The chief procedure in the preparation of *Panchshara rasa* is to

prepare *Parpati* with *Kajjali* (prepared from *mardita Parada* and *bhavita Gandhaka*). *Madhyama paka Parpati* is the best to be used therapeutically.

Bhavana of Parpati churna: *Bhavana* of *Parpati churna* is not mentioned in the original reference of *Bhaishajya Ratnavali*. But according to Hari prapanna Sharma, the author of *Rasa yoga sagara* in the preparation of *Panchshara Rasa* trituration of *Parpati churna* with *Shalmali moola swarsa* is mentioned⁹. Therefore *Parpati churna* was subjected to *bhavana* with *Shalmali moola swarasa*. After the *bhavana* of *Parpati churna* with *Shalmali moola swarasa* there was increase in weight of 50 gm and it was due to addition of organic matter of *bhavana dravya* (*Shalmali moola swarasa*). The particle size also gets reduced by this procedure. *Bhavana* with herbal liquids helps to bring minute particles of material in contact with each other as well as with liquid media. During wet grinding process, mixture gets properly mixed and material becomes soft, smooth and sticky, which facilitates better binding of material (especially in *Kharaliya Rasayana*). Wet trituration facilitates particle size reduction and homogenization leading to modification of properties (*Gunantatradhana*) of the end product¹⁰.

CONCLUSION:

- Pharmaceutical Standardization is the first step towards Standardization of any formulation. So it should be done with utmost accuracy. This leads to reproducibility of drug and production of safe and efficacious drug.
- The reference for present study was adopted from *Bhaishajya Ratnavali Vajikaran adhikara*.
- *Shodhana, Mardana, Bhavana* and *Parpati nimana* are the important pharmaceutical procedures involved in the preparation of *Panchshara Rasa*.
- *Madhyama paka Parpati* is ideal for therapeutic use.

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Source of support: Nil

Conflict of interest:None

Declared

