

PHARMACEUTICAL STANDARDIZATION OF SHANKHAPANI RASA AN EFFICACIOUS REMEDY IN KASHTARTAVA

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ABSTRACT

Ayurveda is a highly evolved and codified system of life and health science based on its own unique concepts and fundamental principles. Rasa Shastra is a branch of Medicine, which deals with preparation of the drugs with metals and minerals having higher therapeutic efficacy, possessing innate qualities like quick action, less dose, tastelessness, prolonged shelf life and better palatability. To improve the quality of Drug and its efficacy there is a need for proper standardization of Ayurvedic drugs at various levels starting from the selection and collection of raw material to the final product. Keeping this in view, it was decided to conduct a study on Standardization of Shankhapani Rasa a Herbo-Mineral formulation which is effective in the management of Kashtartava. The detailed Pharmaceutical study of Shankhapani Rasa from procurement of raw material to preparation of final product will be discussed in full paper

Key Words: Standardization, Herbo-Mineral, Shankhapani Rasa.

INTRODUCTION Rasa Shastra has a glorious past regarding Good Manufacturing Practices (G.M.P.) Standardization, Standard Operating Procedure (S.O.P) etc. as their fossils are found in the description of Rasa Mandapa, which lays down the clear-cut picture of a planned and fully equipped Pharmacy cum Research Institution. During those times, there was morality and honesty in the field of drug manufacturing. Now a day's commercialization in the field of Ayurvedic pharmacy resulted in increased urge for making surplus amount for profit, which has promoted use of substandard raw materials and manipulation in S.O.Ps' of Ayurvedic drugs. Thus, in recent times Ayurveda has obstacles in its way to provide quality treatment because of the unavailability of safe and efficacious drug. As the efficacy, safety and authenticity of various Herbo-Mineral formulations still remains a big question, so there is a need for proper standardization of Ayurvedic drugs at various levels starting from the selection and collection of raw material to the final product.

AIMS AND OBJECTIVES

- To ensure the preparation of safe and efficacious Shankhapani Rasa.
- Pharmaceutical study of Shankhapani Rasa.

IMPORTANCE OF PRESENT STUDY

As the appropriate parameters for standardization of Shankhapani Rasa are yet not established, an attempt has been made through the study to Standardize the method of preparation of Shankhapani Rasa.

MATERIALS AND METHODS

Chief Reference:Sahasrayogam / Gutika Yoga / pg-61

Total pharmaceutical study was carried out in five stages,

Stage I	Shodhana of Parada (R.T 5/27-29) Shodhana of Gandhaka (R.R.S 3/22) Kajjali nirmana (R.R.S 8/52)
Stage II	Shodhana of Shankha (R.T 12/6-7) Marana of Shankha (R.T 12/17-19) Bhavana of Shankha bhasma (Sahasra yogam/gutika Yoga)
Stage III	Preparation of Chincha Kshara (Sa.S.M.K 6/24)
Stage IV	Vatsanabha Shodhana (R.A 8/145) Hingu Shodhana (Atreya samhita) Trikatu churna Preparation (Sa.S.M.K 6/2)
Stage V	Preparation of Shankhapani rasa (Sahasra yogam/gutika Yoga)

(R.T-Rasa Tarangini,R.R.S-Rasa Ratna samucchaya,Sa.S.M.K-Sharanga Samhita Madhyama Khanda,R.A-Rasarnava.)

Shankhapani Rasa Preparation:

Reference	Sahasrayogam/Gutika Yoga/61
Materials	Kajjali – 16 gm,Vatsanabha – 8 gm,Hingu Churna-16 gm Trikatu Churna -48 gm,Saindhava lavana – 64 gm Shanka Bhasma – 64 gm, Chincha Kshara – 64 gm Nimbu swarasa – Q.S.
Method/Principle	Trituration
Apparatus	Khalwa Yantra, Sieve

Procedure: Kajjali prepared with Suddha Parada and Suddha Gandhaka was taken in khalwa yantra and Vatsanabha churna was added to it, trituration was carried out.Trikatu churna,Hingu churna,Saindhava lavana were added to the mixture for further trituration.To this, Chincha Ksara and Shanka Bhasma were added and triturated to form homogenous mixture.Then Bhavana was given with Nimbu Swarasa for 1day.Then this mixture was placed in hot sun for drying.After drying, it was made into fine powder and was filled in capsules of 250 mg using capsule filling machine.

OBSERVATIONS:

- Immediately after adding Nimbu swarasa forthing was observed.
- After completion of bhavana, the colour of the mixture turned blackish .
- The final product was entering into fine lines of fingers.

Precautions:

- Mardana should be carried out at a slow and steady pace to avoid spilling.
- The mixture should be completely free from moisture before filling in the Capsules.

RESULT:

Table Showing the Results of preparation of Shankhapani Rasa :

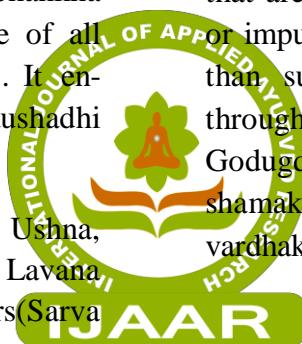
Wt of total contents taken	Quantity of drug obtained
324 gm	340 gm

DISCUSSION The pharmaceutical procedures adopted in this study are Shodhana, Marana and Bhavana. Shodhana is done for Parada, Gandhaka, Shankha, Vatsanabha and Hingu. It is done to convert materials into suitable form for further procedures, remove visible & invisible impurities, to reduce the toxicity and to enhance the therapeutic property. Marana was done for Shankha. It makes mineral materials adaptable, absorbable and assimiable. Bhavana was carried out at two Stages Bhavana of Shankha Bhasma and Bhavana of mixture of all ingredients of Shankhapani Rasa . It enhances the Bala (potency) of aushadhi dravya.

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 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 Lashuna was selected as a drug for Shodhana of Parada.

Shodhana of Gandhaka was carried out according to the reference

of RRS 3/22. 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 Gandhaka⁴.



Kajjali was checked for loss of shine at various stages of preparation and Mardana was done upto it turned lustreless. 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.

By doing Sodhana of Shankha with Nimbu swarasa in dola yantra the impurities are removed from Shankha and get settled at the bottom of the vessel and also due to the corrosive nature of Nimbu the Shankhas become brittle and the outer surface becomes rough, So that in further Marana procedure Shankhas

can be converted into Bhasma form easily. Hingu Shodhana was mentioned in Atreya Samhita. Hingu Shodhana was carried out by Ghrita Bharjana, due to which its Pitta vardaka property and Tikshnatwa were reduced⁵.

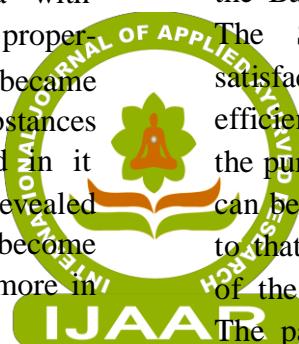
Shodhana of Vatsanabha was done with Gomutra. The crude root contains about 1.4% of total alkaloids whereas the root treated with cow's urine contains only 1.27%. Treatment with cow's urine and exposure to the sunlight have brought about a partial change of the toxic alkaloids aconitine and pseudo aconitine into the far less poisonous substance benzylaconine and veratrolaconine⁶. The process of Shodhana with cow's milk reduced cardiotoxic properties⁷. After Shodhana Gomutra became dark in colour, as the toxic substances from Vatsanabha were dissolved in it. Pharmacological experiments revealed that the detoxified aconite root become less toxic as the LD50 is found more in comparison to untreated drug⁸.

Chincha Kshara was prepared according to Sarangadhara Samhita i.e. 6 times water was added (4 parts of water was mentioned by Yoga Ratnakara & Rasa Tarangini). There are 2 types of Kshara, Paniya kshara and Pratisaraniya Kshara⁹. Here Paniya kshara was prepared for the preparation of Shankhapani Rasa.

In puta system of heating there is gradual rise and fall of temperature which helps in making the material more agnisthayi (heat stable). It cannot regain its form back after complete procedure. Gaja puta system of heating was suitable for preparation of Shankha

bhasma. The maximum temperature recorded during puta was 1003°C and it was maintained for a period 4-5 minutes. After that, gradual fall in temperature was noted over a period of seven and half hours before reaching room temperature. The material turned to soft powder after complete process, which indicates that the temperature was sufficient for the formation of the desired compound.

Acharya Charaka has described Bhavana as one of the Samskaras. It is described that during preparation of any medicine, Bhavana with Swarasa of specific dravya is given. It enhances the Bala (potency) of Aushadhi dravya. The Subhavit dravya i.e. dravya after satisfactory levigation can work efficiently even in small quantity. For the purpose of Bhavana, Swarasa used can be of the dravya having same Virya to that of Bhavya dravya or it can be of the same i.e. of Bhavya dravya¹⁰. The particle size also gets reduced by this procedure. Bhavana of Shankha Bhasma was done with Nimbu Swarasa. For preparation of Shankhapani Rasa, after all the contents were made into homogenous mixture and Bhavana with Nimbu Swarasa was given. Immediately after adding Nimbu Swarasa to the drug effervescence was observed which might be due to the reaction between the Ksara (alkali) and Nimbu Swarasa (acid). There was increase in weight observed after complete trituration and it was due to addition of organic matter from Bhavana dravya.



CONCLUSION:

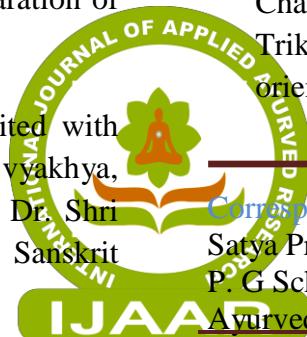
- Pharmaceutical Standardization is the first step towards Standardization of any Formulation. So it should be done with utmost accuracy. This leads to reproducibility of drug and production of safe and efficacious drug.
- Shankhapani Rasa reference for present study was adopted from Sahasra Yogam.
- Chincha Kshara was prepared with Chincha Phala Twak.
- Gaja Puta system of heating was suitable for preparation of Shankha bhasma
- Nimbu Swarasa bhavita Shankha Bhasma was used in the preparation of Shankhapani Rasa.

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