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Hingulottha Parada: A Traditional Mercury Extraction Method

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ABSTRACT

Rasashastra, is said to be a divine science in the field of Ayurveda. It is the science of making formulations of mineral origin for therapeutic use. *Parad* i.e. liquid silver is the backbone of this science. *Hingulottha parad* i.e. extracted *parad* (mercury) from *Hingula* (Cinnabar) is a speciality of this science i.e. *Rasashastra*. *Hingulottha parad* is said to be like *Ashtasankarit parad* and no purification is required further. Hence, this extraction method keeps a very big importance in the field of Ayurveda. *Hingula* (cinnabar) is the most prominent ore of mercury since ages. To obtain quicksilver (*parad*) from *Hingula*, so many methods and principles are adapted like *Urdhva patana* (upward sublimation), *Adhah patana* (downward sublimation), *Tiryak patana* (Transverse sublimation). Here *Urdhwapatana* method is applied for extraction of mercury from *Hingula* by the *Damaru yantra*, which is discussed in this paper. In the present study extraction of mercury from *Hingula* was done three times, % of *Hingulottha parad* was 41.67%. The cause of less percentage of mercury may be due to unavoidable reasons like heating pattern or non-dissociation of mercury from *Hingula* by this method which is not clear. The object of this paper is to present an insight into extraction process and the discussion of its utility and limitations of this method.

KEYWORDS

Rasashastra, Hingula, Yantra



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INTRODUCTION

Rasashastra i.e. Ayurvedic pharmaceuticals which is divine in pharmaceutical as well as clinical aspects. This science initiated the concept of clinical efficacy of Ayurveda drugs at low dose, without any specific taste¹. It is a branch of Ayurvedic science which deals with the process of manufacturing of metallic medicines, Herbomineral formulations with the specific procedures like classical purifications, incineration methods. *Parada* (mercury) is the life of this divine science. Mercury is considered to as the supreme drug out of all Rasoparasa, dhatu etc². It initiated the special treatment modality in Ayurveda as *Rasachikitsa* (treatment with the help of Mercurial products) which was taken as divine treatment as well. *Hingula* is considered as the ore of mercury as well as included in *Sadharan rasa* group of *Rasashastra*. Hence *Hingula* has dual importance as an ore of mercury as well as medicinal effect in Indian alchemy. The practice of extraction of mercury from *Hingula*(cinnabar) is a traditional concept which is practiced today also. The extraction methods vary as per classics. Each extraction process has difference in procedure as well as yield of mercury also which needs revalidation. *Hingula* is the seventh mineral drug of *Sadharan rasa*

group³. It is identified as Cinnabar chemically, which is red sulphide of mercury. The acceptable variety of *Hingula* (which has therapeutic potential) are-like red colour of japakusum(Hibiscus rosa sinensis), smoothly grinded, shiny appearance and heavy⁴.

On burning of *Hingula*, mercury vapour is liberated, which after sublimation *parad* is obtained. For this scientific rationality *Patana yantras* were designed, depending upon collection of sublimed mercury. Here method of *Urdhwapatana* (upward sublimation apparatus) is adapted with the help of *damaru yantra*(instrument resembles the damaru of God Shiva) for *paradnishkasan*(extraction of mercury) as per reference of Ayurved Prakash 2/83-85. The *Hingulottha Parad* is considered as superior to ordinary *parad* as it has no *doshas* (blemishes) remaining after extraction process. Various methods which were applied for *parad nishkasan* had difference in yield like *Nada yantra* method has 73%⁵, *Damaru yantra* has between 40-45% *Parad* extracted⁶. Here, in our procedure three times *damaru yantra* method was repeated for extraction of mercury to get an idea about the yield by this method.

MATERIALS AND METHODS

Hingula shodhan



Hingula was purified by the method of Bhavana(trituration)

- Raw Hingula-300g
- *Nimbu swarasa*(lemon juice)-Q.S.

Hingula was taken in a mortar and was triturated with lemon juice till the attainment of *subhavita lakshanas*(smooth pill forming stage) .It was then allowed to dry in the mortar itself.

***Parad nishkasan*(Extraction of mercury)**

Two mud pots of same size were taken and kept immersed in water for sometimes. It was then dried and applied the paste of multani mud and dried to close all the pores of muds to avoid spilling of mercury via the pores of mud. The *shodhit Hingula* was put in the lower pot in the form of powder and upper pot was kept inverted above lower pot. Now, the mouth of both pots were sealed by *sandhibandhan* (sealing of joints).The *sandhibandhan* was done for 7 times. After each *sandhibandhan*, it was dried. Now whole *Damaru yantra* apparatus was put on fire of coals and started giving the fire to the lower pot containing pure *Hingula*. During heating, meanwhile thick cold wet towel was put on upper pot base to allow sublimation of mercury on the inner side of base of upper pot. This procedure was continued for 3 hours. After giving fire for 3 hrs,*damaru yantra* was allowed for self-cooling. On the

next day, seal was opened and the mercury was collected with precautions.

- Extracted mercury-125g
- Same procedure was repeated two more times.

OBSERVATIONS

1. During *Bhavana* with *Nimbu swarasa*, the Red shiny *Hingula* was converted into a reddish shineless powder.
2. *Hingula* became more soft after *shodhana*(purification)
3. During collection of *Parad*,the residue in the inner side of upper pot was black in colour and *parad* was procured from that.

PRECAUTIONS:

1. The sealing of mouth of mud pots should be done in a proper way to avoid the breaking of joints during heating,
2. The cooling of upper pot intermittently is required to get the free mercury on the inner side of base of upper pot.
3. Pores of both pots should be closed properly with the help of mud to avoid spilling of mercury.
4. The magnitude of heat is important factor for the dissociation of *Hingula* which should reach upto 600⁰c, so heating should be maintained in this way for proper dissociation of *Hingula*.
5. The collection of mercury from above mud pot should be done in such a way so



that maximum yield of mercury can be obtained.

DISCUSSION

The *Hingulottha parad* is considered as the purest and *Ashtasanskarit* one in Rasa classics. Urdhwapatana method was adapted here. Various gatis (movements) are responsible for proper collection of mercury which was tried to be avoided during the procedure.

CONCLUSION

Hingulottha parad may be considered as a better option to bypass the process of *Ashtasamskara* of *Parada* which is a very tedious job in the context of mercury. Also, the loss of mercury is more during *Ashtasamskara* which can be minimise by extracting mercury from *Hingula*(*Hingulottha parad*).The time duration for extraction process is less as compared to *Ashtasamskara* and *samanya shodhan* of *parad* .Hence, it can be concluded that *Hingulottha parad* is a time saving and authenticated form of mercury pharmaceutically as well as therapeutically.



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