



IJPPR

INTERNATIONAL JOURNAL OF PHARMACY & PHARMACEUTICAL RESEARCH
An official Publication of Human Journals

ISSN 2349-7203



Human Journals

Review Article

February 2017 Vol.:8, Issue:3

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Concept of Shodhana W. S. R. to Abhraka Shodhana

	
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Submission:	10 February 2017
Accepted:	15 February 2017
Published:	25 February 2017

Keywords: Abhraka, Bhasma, Shodhana. Marana,

ABSTRACT

Abhraka (Biotite) is an important and potent mineral used as medicine for different therapeutic purposes in the Ayurveda since long back. Abhraka (Biotite) is not used directly in the native form as founds in the ore. It is subjected to different pharmaceutical processing like Shodhana (purification) and Marana (incineration) described in Ayurvedic texts that converted it into therapeutically important form. These processes lead chemical changes in the Abhraka (Biotite) that makes it therapeutically suitable. In this paper, an attempt has been made to review the shodhana process of Abhraka described in Ayurvedic texts.

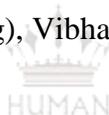


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INTRODUCTION

Rasashastra is a divine science having its origin from Lord Shiva. It is a branch of learning of Ayurveda pharmaceuticals, especially dealing with the mineral origin substances and their processing's. Maharasa, Uparasa, Sadharana rasa, Dhatu, Updhatu vargas mainly consists of mineral origin dravyas. These minerals are associated with various impurities and toxins. If administered as such, they may prove injurious and harmful for health. For elimination of impurities and to make them suitable for internal administration, specialized procedures like Shodhana, Marana and Sanskara were developed in the medieval period (8-10 C AD).

Shodhana is a pre-requisite for all Rasa dravyas. Shodhana is combination of processes which removes unwanted material from the drug and controls toxic effect then enhance the properties of the drug. Shodhana is considered as a Sanskara. For shodhana different techniques like Svedana (Vaporisation of raw drugs in certain liquid materials), Mardana (Trituration with svarasa, kashaya etc.), Patan (to distil), Avap/Dhalan (Melting solid raw drugs and dipping in cold liquid), Nirvap (Heating solid drugs and dipping into cold liquid), Galan (Filtration), Prakshalan (Proper washing), Nimajjan (dipping), Bharjan (to fry), Sanyog (addition of drug into another drug), Vibhag (Separation of unwanted part), Shoshana (Drying) etc. are adopted.



Objectives of Shodhana-

- To Purify
- To reduce toxic properties
- To enhance medicinal properties
- To convert metals and minerals into Herbomineral/Organomineral compound (Sendriyva)
- To help in further processing of drug.

Types of Shodhana-

Shodhana is of mainly two types-

(1) Samanya (General)- It is generally applied for the drugs which come into one category like Maharasa, Uprasa. The drugs of the one group have some similar type of impurities. So,

general impurities can be removed with the help of samanya shodana. eg- Dhatu samanya shodhana¹

(2) Vishesh (Specific)- It is performed to remove specific impurity and to produce specific properties in a specific substance. eg. Haridra powder mixed nirgundi svarasa for Naga and Vanga².

Abhraka Shodhana-

Abhraka (mica) is a group of minerals that contain atoms of aluminum, Oxygen and Silicon bounded together into flat sheets. Mica is found in igneous and metamorphic rocks. Abhraka bhasma is used in diseases like Diabetes mellitus, Dermatoses, Tuberculosis, Asthma, Cough, Anemia, Colitis, Epilepsy etc. It promotes physical and mental vigour, sexual power and immunity³. For manufacture of bhasma, shodhana is the first and an important step. Ingestion of Abhraka without proper shodhana may lead to several diseases like Kshaya, Kushtha, Pandu, Shotha, Hrtpida, Agnimandhya, Parshvapida, Ashmari etc. It may act like a poison in impure form.⁴. In Rasa texts, various methods of Abhraka shodhana are described. Such as-

1. Shodhana by Nirvapa –



(A) Heat the pieces of mica till they become red and dip into the decoction of Triphala or Kanji or Cow's urine or cow's milk. Repeat this process for seven times.^{5,6,7,8}

(B) Same method is described in the text Ras Prakash Sudhakar⁹ and Rasamrita¹⁰ but here Bhringraj svarasa is also used as a quenching media.

(C) Heat the pieces of mica till they become red and quench into Nirgundi svarasa. Repeat this process for seven times.¹¹

(D) Red hot pieces of mica are quenched into the decoction of kola (wild variety) and the process is done for seven times¹².

(E) Abhraka shodhana can be done by performing nirvapa process in Cow's milk or Triphala kashaya or Badri kvatha for seven times¹³.

(F) Vajra abhraka is made red hot and is quenched into Cow's milk or Badri kvatha. Process is repeated for 21 times.¹⁴

2. Shodhana by Nirvapa and Mardana –

(A) According to Anandkanda¹⁵- Vajra abhraka is made red hot and is quenched into Arkakshira, Kanji, Cow's urine, Triphala kvatha and Meghnad svarasa. Nirvapa is done in each dravya for three times separately. After this, separated abhrak patras are triturated with Meghnad svarasa and Amla dravya.^{16,17}

(B) According to Sharangdhar Samhita* and Rasendra Chintamani* - Do Krishna vajra abhraka red hot and quench into Cow's milk. After this, triturate the separated abhrak patras with Tanduliyak svarasa and Nimbu svarasa for 24 hours.

(C) According to Rasadyaya.¹⁸, Heat separated abhrak sheets and quench into Agastyapushpa svarasa, Punarnava rasa, Tanduliyak rasa, Maricha, Rai kvatha, Buffalo's milk. Triturate with Yavachincha jala and do putapaka.

(D) According to Ayurved Prakash- Make abhraka red hot and dip it in cow's milk for seven times. After this, triturate it with amla dravya and tanduliyak svarasa for one day with each dravya separately.²⁰

(E) According to Rasa Tarangini¹⁹-



i. Heat Vajra abhraka till it turns red and quench into kanji. Do this process for seven times and then triturate it with any of amla dravyas for one day.

ii. Same method as described in Ayurved Prakash.

For nirvapa, quenching media should be taken in such amount so that red hot abhraka piece/sheets completely dipped in it and it should be changed each time.

3. Others-

(A) According to Rasarnava²¹ - Do Svedana of separated abhrak patras with the help of Dola yantra in Agastyapushpa rasa, Kumud rasa, Kevanch, Tinduk, Jambiri nimbu, Meghnad, Punarnava, Yavachincha, Kanji, Karvira, Vanasurana, Bhumyamalaki, Amlavetas, Meshashringi, Rabbit's fat, Aadraka svarasa, Shami rasa, Vajravalli, Kshirakanda, Maricha, Rai, Tulsi rasa/kvatha for three days .

(B) According to Rasa Prakash Sudhakar.²² Do svedana of Vajra abhraka with the help of Sthali yantra in Kanji, Kulattha kvatha, Takra and Cow's urine for one day in each dravya separately.

(C) According to Rasendra Sara Sangraha²³ Triturate abhraka with Agastyapushpa svarasa and form a bolus. Keep that bolus inside jimikand and put it underground at the place where Cow's live for one month. By this method, abhraka becomes mridu and liquid like Parad.

Table No. 1: Showing medias used in nirvapa process in abhraka shodhana

Media name	Name of text												
	R.R.S.	A.K.	R.P.S.	S.S.	R.Ch.	R.A.	L.S.	R.S.S.	R.T.	R.M.	R.J.N.	A.P	R.M
Kanji	+	+	+	-	-	-	-	-	+	+	+	-	-
Cow's urine	+	+	-	-	-	-	-	-	-	+	+	-	-
Cow's milk	+	-	+	+	+	-	-	-	+	+	+	+	+
Triphala kvatha	+	+	+	-	-	-	-	-	+	+	+	-	-
Arkakshira	-	+	-	-	-	-	-	-	-	-	-	-	-
Meghnad svarasa	-	+	-	-	-	-	-	-	-	-	-	-	-
Bhringraj svarasa	-	-	+	-	-	-	-	-	-	+	-	-	-
Agastyapushpa svarasa	-	-	-	-	-	+	-	-	-	-	-	-	-
Punarnava rasa	-	-	-	-	-	+	-	-	-	-	-	-	-
Tanduliyak rasa	-	-	-	-	-	+	-	-	-	-	-	-	-
Maricha	-	-	-	-	-	+	-	-	-	-	-	-	-
Rai kvatha	-	-	-	-	-	+	-	-	-	-	-	-	-
Buffalo's milk	-	-	-	-	-	+	-	-	-	-	-	-	-
Nirgundi rasa	-	-	-	-	-	-	+	-	-	-	-	-	-
Badri kvatha	-	-	-	-	-	-	-	+	+	-	-	-	+

DISCUSSION

Abhraka is one such material, useful in lohavad, dehavad and also in chikitsa. According to mineralogy, Mica is a generic term applied to a complex aluminosilicate mineral having a sheet or plate like structure with different composition and physical properties. According to

Ayurveda, abhraka is of four types based on the observations when it is heated over fire. They are Pinaka, Naga, Manduka and Vajra. Each variety is further subdivided into four types according to color i.e. Shveta, Rakta, Pita and Krishna.²⁵ Krishna Vajra abhraka is considered to be useful for treatment but only after proper processing's such as Shodhana, Dhanyabhrakikaran, Marana, Amritikaran and Lohitikaran. These five procedures are termed as five sanskaras of Abhraka.²⁴ Shodhana is a complex process to achieve definite objectives. Regarding Abhraka, Shodhana is essential for purification, detoxification as well as to make the drug ready for other pharmaceutical processes. These shodhana procedures are invented with trial and error method over a period of hundreds of years. As described above, several methods are there in Rasa classics for Abhraka shodhana based on requirements and availability of materials.

Nirvapa technique i.e. heating the material to red hot and quenching in liquid media, is used commonly in Abhraka shodhana. In this process, the reaction occurs at three stages i.e. during heating, during quenching and during post quenching interaction between abhraka and the liquid. Biotite is formed by covalent bonds between non-metallic ions and metallic bonds between metallic ions. These ions of metals and non-metals are combined together to form a molecule with the help of ionic bonds formed by electrostatic force between cations and anions. When a piece of Abhraka is placed over fire, its particles gain energy and begin to vibrate more strongly, this causes the solid to expand. Evaporation of water molecules separates the Abhraka in various layers along its parallel cleavage planes. On continuous heating, particles get enough energy to break forces holding them together and they can move around. When this red hot piece of mica is quenched into the liquid media such as Kanji, Triphala kvatha, Cow's milk, Cow's urine etc., sudden change in temperature breaks other strong bonds also, destroying its flexibility and making it more brittle. Carboxylic acid, acidic organic liquids and other organic molecules present in quenching media serve as chemical modifiers of mica. It also facilitate the removal of toxic element from mica to the quenching media through an ion exchange process. Kanji dissolves the acid soluble impurity, Cow's urine removes base soluble impurity from abhraka and Cow's milk dissolves lipid soluble impurity. Cow's milk and Triphala acts like a Vishaghna dravya. Nirvapa process is repeated for seven to twenty one times for abhraka shodhana which cause a marked reduction in hardness and also impose the properties of various media in the abhraka. In many references, further trituration with amla drava, Tanduliyak svarasa, Meghnad svarasa etc. is also described which serve for further size reduction and transfer of the properties of bhavana

dravyas into abhraka and to eliminate any residual effect. Swedana of abhraka is also mentioned for shodhana but no structural distortion is observed by this method, only the extraction of impurities from mica to the media can take place.

CONCLUSION

So, it can be concluded that among different methods for abhraka shodhana, repeated nirvapa procedure followed by trituration with suitable media is the best. Heating followed by quenching repeatedly influences the structural distortion and the development of stress induced cracks and spallations of the micaceous plates. Thus the efficient diffusion of the external media takes place at successive heating and quenching steps. At the same time, the toxic elements are leached out from mica to the quenching media through an ion exchange process. Step of trituration/levigation enhance the medicinal property, remove residual toxic effect and make the drug suitable for further processing by reducing particle size.

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