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Pharmaceutical fortification of *Rasoushadhis* for their better clinical utility

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ABSTRACT

Ayurveda is known to be the oldest system of medicine whose virtue of holistic approach towards life attracts the attention of people worldwide. Ayurvedic formulations are conjuncture of herbal, mineral/metal and animal origin drugs. To effectuate therapeutic properties in these raw drugs, they are subjected to different pharmaceutical procedures (*Samskaras*). The fate of the drugs is predominantly decided by these procedures only. In the case of medical emergencies as well as in the management of critical diseases drug which brings about hastened relief in subordinate dose and dosage is endorsed. In *Rasashastra*, metals and minerals are subjected to different *Samskara* like *Shodhana* etc. to beget the properties like '*Alpa Matra Upyogitvad*' and '*Kshipram Aarogyam Daayitvad*' in them. The concept of incineration or *Marana* is the process which brings the particle size into nanometre range which makes the metal into absorbable and assimilable form. The present paper deals with the different pharmaceutical procedures which impregnate these properties in the *rasa dravyas* and make them suitable for use in various clinical manifestations.

Key words: *Rasaushadhis*, *Samskara*, *Shodhana*, *Marana*.

INTRODUCTION

Rasashastra is an offshoot of Ayurveda that flourished during the medieval period. The formulations of Ayurveda consists substances of herbal, mineral/metal and animal origin drugs which are processed pharmaceutically to have therapeutic effects. *Rasashastra* mainly explores the utilization of metals and minerals for medicinal purposes. It is understood that the term *Rasashastra* denotes *Parada* i.e. mercury (Hg), *Maharasa*, *Uparasa*,

Sadharana Rasa but the term *Rasa* also includes incinerated or killed metals and poisonous tubers. Hence the formulation which consists above as one of the constituent can be termed as a *Rasaoushadhi*.

These *Rasaushadhis* are known to have properties like quicker and hastened action at subordinate dose and dosages. Furthermore, they are tasteless and hence don't produce any complication like nausea and are more palatable.^[1]

The presentation of clinical conditions varies from an acute onset to a long term chronic graveness. The acute onset of certain manifestations can be termed as medical emergency which require prompt management, often termed as critical care. A medical emergency is an acute injury or illness that poses an immediate risk to a person's life or long term health. These emergencies require instant assistance and treatment. While at the same juncture critical care medicine is defined as the branch of medicine concerned with the diagnosis and management of life threatening conditions requiring sophisticated organ support and invasive monitoring.^[2] Such conditions

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require quicker management. *Rasaushadhis* can prove to be a better choice in such conditions.

Rasaushadhis not only prove their potential in the management of the acute conditions but their action is well established in the treatment of the chronic diseases. They are known to be beneficial in the cases of diseases which are considered to be incurable.

These attributes of *Rasaushadhis* can be expected because of the different pharmaceutical procedures to which they are exposed to. Present paper is an attempt to review these procedures and their role in making these preparations more efficacious.

Concept of Shodhana

Shodhana is a process of purification and detoxification by which physical and chemical blemishes and toxic materials are eliminated or nullified after which the substances are made suitable for further proceedings.^[3]

Procedures of Shodhana

Shodhana is a definitive term which includes many meanings in it. In simple words it defines many procedures which are helpful in the removal of blemishes from any drug. The selection of these procedures depends upon the drug and the impurities present in it. The examples of few of the procedures utilised for *Shodhana* are tabulated in table -1.

Table 1: Table showing the procedure utilised for Shodhana.

No.	Name of the procedure	Example
1.	<i>Bharjana</i>	<i>Gairika Shodhana</i> ^[4]
2.	<i>Bhavana</i>	<i>Hingula Shodhana</i> ^[5]
3.	<i>Dhalana</i>	<i>Vanga Shodhana</i> ^[6]
4.	<i>Galana</i>	<i>Gandhaka Shodhana</i> ^[7]
5.	<i>Mardana</i>	<i>Parada Shodhana</i> ^[8]
6.	<i>Nimmajana</i>	<i>Vatsanabha Shodhana</i> ^[9]
7.	<i>Nirjalikarana</i>	<i>Sphatika Shodhana</i> ^[10]

8.	<i>Nirvapa</i>	<i>Dhatu Shodhana</i> ^[11]
9.	<i>Patana</i>	<i>Parada Shodhana</i> ^[12]
10.	<i>Swedana</i>	<i>Shankha Shodhana</i> ^[13]

Concept of Marana

The process which converts the purified metals and minerals into *Bhasma* form after subjecting them to levigation and incineration is called as *Marana*.^[14]

Procedure of Marana

Shodhita Dravya is mixed with the drug for incineration i.e. the *Maraka Dravya* and *Bhavana* is given with the specified liquid for the specified period of time. After observing the *Subhavita Lakshana*,^[15] pellets i.e. *Chakrika* are prepared from the doughy mass. After complete drying they are kept in an earthen saucer i.e. *Sharava* and covered with another saucer and the junction between the two is sealed with mud. This junction is then covered by seven layers of mud smeared cloth. Each layer is applied after the preceding one gets completely dried. This is called as *Sharava Samputa*.^[16] This is then subjected to *Putra*^[17] i.e. the quantum of heat applied for incineration. After self cooling, the *Samputa* is opened and the pellets are ground to powder form. Then again this process is repeated till the specified *Bhasma Pariksha*^[18] can be appreciated in the prepared *Bhasma*.

Rationale behind Shodhana

The key point in *Shodhana* is that specific media is used for *Shodhana* of each *rasa Dravya*. At the same juncture different *Shodhana Dravya* are told for the same *Rasa Dravya*. Selection of these *Shodhana Dravya* should be done considering the expected therapeutic efficacies of the drug.

Sometimes *Shodhana* medium acts like solvent, to dissolve the material for easy separation from the insoluble impurities as in *Guggulu* and *Navsacara Shodhana*.^[18] At some other instances *Shodhana* medium acts to remove or eradicate toxic chemical substance from the drug, eg. *Manahshila* i.e. native realgar is found along with white arsenic (As_2O_3) which is a highly toxic substance. This white arsenic

dissolves readily in alkaline solutions and here *Choornodaka* acts to eradicate highly toxic As_2O_3 from *Manahshila*.^[19]

Some materials are used directly in therapeutics after *Shodhana* wherein media may have some organic and inorganic active principles which have important role to play in the body. In addition to this, *Shodhana* medium helps in physical transformation of some metals and minerals. In *Nirvapa* process repeated heating and quenching in liquid medium causes brittleness, breaking and size reduction of the metals and minerals.^[20]

The objective of these physico-chemical changes of material is to increase its biological availability, i.e. to potentiate its biological efficacy. Reduction in particle size helps in absorption, smoothness leads to non-irritability and all chemical changes make the material cell friendly.

Rationale behind *Bhavana*

Bhavana process increases the therapeutic activity of the material. Organic components of the liquid media are transferred to the material to make it organo-metallic or organo-mineral compounds, which are favourable to the body. Attrition caused by the pestle and mortar further leads to size reduction and makes the material ready for quicker absorption.

Rationale behind *Marana*

The process of *Marana* is responsible for numerous changes which transforms these materials to a magnificent medicine. In brief these probable changes can be enumerated as under;

- Reduction in particle size.
- Conjugation of trace elements.
- Elimination of unwanted elements.
- Formation of desired compounds.
- Physical entity of the same chemical compound changes.

Attributes of *Bhasmas*

All *Bhasmas* have common properties like *Rasayana*, *Yogavahi* etc. *Rasayana* probably indicates immunomodulation and anti-aging properties and

Yogavahi indicates ability to carry the drugs to the cellular level and impart targeted drug delivery at the desired site of action by the *Bhasmas*. Under *Rasibhavana*,^[21] properly prepared *Bhasma* must be readily absorbable in the body and will be non-toxic. *Shighravayapti* indicates that after *Marana*, *Bhasma* becomes easily absorbable and assimilable in the body. Under *Agnideepana*, *Bhasma* probably increases the metabolism at cellular level and may also act as a catalyst.

These attributes of *Bhasma* are comparable with the action of nano-particles in the body. These are biodegradable, biocompatible and non-antigenic in nature.

Bhasmas as Multi-Elemental Cocktail

Bhasmas based on calcium, iron, zinc, mercury, silver, arsenic, tin and gemstones are analysed for elements including carbon, hydrogen, nitrogen and sulphur contents. In addition to major constituent element found at percentage level, several other essential elements like sodium, potassium, calcium, magnesium, molybdenum, iron, copper and zinc have also been found in micrograms per grams amount. These seem to remain chelated with organic ligands derived from organic medicinal herbs.

DISCUSSION

The concept of *Shodhana* as said earlier includes different procedures which are considered to remove or nullify the toxic effects and the impurities from the drugs. Furthermore, it also helps in increasing the efficacy of the drug. This can be explained by giving an example of *Vatsanabha Shodhana* where in, it is said to be cut into small pieces and soaked in gomutra and kept under sunlight for seven days. Here cutting *Vatsanabha* into small pieces increases the surface area for the absorption of *Gomutra*. *Gomutra* being an alkali by nature may remove or reduce the effect of aconite present in *Vatsanabha* by either chemically reacting with it or altering the physical form of aconite to a non-toxic one. Probably certain amount of heat is required to facilitate the reaction or to bring about the change in the physical form. This could be the probable reason behind keeping it under sunlight.

Gomutra probably helps in increasing the efficacy of the drug also.

Similarly for *Guggulu Shodhana* different media have been mentioned which when used for its purification can be used in different sets of diseases. The usage of these particular media implies the ability of it to reduce the toxic effect as well as improve or enhance the therapeutic effect of the drug when administered in specific disease.

Gandhaka is told to be purified by the procedure called *Galana* i.e. filtering through a cloth smeared with ghee into the milk. Filtering it through a cloth removes the external impurities present in *Gandhaka*. The application of *Ghrita* may help in either nullifying the impurities or transforming them to a state which is soluble in milk. Moreover, *Ghrita* being *Yogavahi* imparts its properties to *Gandhaka* and makes it more efficacious. With these points in mind it can be inferred that this method of purification makes *Gandhaka* free from both chemical and physical impurities.^[22]

If we look into the concept of *Marana*, the general procedure is to heat the drug in a *Sharava Samputa* which is sealed by seven layers of mud smeared cloth. This sealing does not allow the oxygen to enter and the formation of desired compounds of the drug and change in the physical entity of the same chemical compound may take place under the low supply of oxygen. The same procedure when repeated several times may probably transform the drug into a form suitable to the body by formation of desired compounds and changing the physical form of the drug.

Jarana is another procedure used for the drugs/metals with low melting point which when given heat may melt and will not form into *Bhasma*. Hence these drugs are first converted into powder form for easy processing of incineration. The *Marana* of *Naga* and *Vanga* are carried out by this method. Once the metal is melted, powders of drugs like *Apamarga*, *Pippali* etc. are added in one fourth quantity to that of the metal and heated to red hot. Later it is allowed to cool and the product so obtained is used for further *Marana* procedure by subjecting it

to *Bhavana* and *Putra*. The drugs explained for the purpose of *Jarana* probably increase the melting point of the metal thereby making it to tolerate the heat given during incineration and to convert it to *Bhasma* form.^[23]

Hence all these procedures used for the transformation of the drugs in to a suitable form are inter linked with each other which helps in improving the therapeutic efficacy of the drug step by step and as all the procedures involves size reduction of the drug to minute particles it probably helps to gain properties like *Yogavahi*, *Sheegragami*, *Rasayana* etc. which makes the medicine very potent and makes it useful for the critical care in both acute and chronic manifestations.

CONCLUSION

The enormous complexity of human body offers scope to conceptualize its dynamic organisation in a number of ways such as structural, biochemical, functional etc. Ayurveda understands the human body from the perspective of functions like *Tridoshas*. This view point itself helps in the better management of the illness caused by any origin. Moreover the *Rasaushadhis* due to various *Samskaras* as discussed earlier helps in curing the disease not merely by relieving the symptoms but by giving target oriented action. This is achieved with the use of particular *Anupana* which in turn helps in the quicker absorption and prolonged action of the drug. Due to these attributes of the *Rasaushadhis*, their pertinence in the management of both acute and chronic manifestations is proven. Likewise the use of *Rasaushadhis* as the critical care medicine and emergency medicine has now become the need of the hour.

REFERENCES

1. Gopal Krishna, Rasendra Sara Sangraha, Satyaprakashika commentary by Vaidya Satyarth Prakash, 1st Edition, Varanasi, Krishnadas Academy, 1994; pp-742, p-5.
2. Medical emergency [Internet]. En.wikipedia.org. 2017 [cited 10 February 2017]. Available from: https://en.wikipedia.org/wiki/Medical_emergency

3. Sadananda Sharma, Rasa Tarangini, Pandit Kashinath Sastri, editor. Prasadani commentary by Sri Hari Dutta Sastri, 11th edition, NewDelhi; Moti Lal Banarasi Das Publishers; 2012; pp-772, p-22.
4. Vagbhata, Rasaratna Samuchchaya, Acharya Siddinandan Mishra editor. 1st edition, Varanasi, Chaukhambha Orientalia; 2011; pp-697, p-68.
5. Vagbhata, Rasaratna Samuchchaya, Acharya Siddinandan Mishra editor. 1st edition, Varanasi, Chaukhambha Orientalia; 2011; pp-697, p-93.
6. Vagbhata, Rasaratna Samuchchaya, Acharya Siddinandan Mishra editor. 1st edition, Varanasi, Chaukhambha Orientalia; 2011; pp- 697, p-173.
7. Vagbhata, Rasaratna Samuchchaya, Acharya Siddinandan Mishra editor. 1st edition, Varanasi, Chaukhambha Orientalia; 2011; pp-697, p-64
8. Sadananda Sharma, Rasa Tarangini, Pandit Kashinath Sastri, editor. Prasadani commentary by Sri Hari Dutta Sastri, 11th edition, NewDelhi; Moti Lal Banarasi Das Publishers; 2012; pp-772, p-79.
9. Vagbhata, Rasaratna Samuchchaya, Acharya Siddinandan Mishra editor. 1st edition, Varanasi, Chaukhambha Orientalia; 2011; pp-697, p-657.
10. Madhava, Ayurveda Prakash, Sri Gulrajsharma Mishra, editor. Varanasi, Choukambha Bharati Academy; 2016; pp-504, p-322.
11. Vagbhata, Rasaratna Samuchchaya, Acharya Siddinandan Mishra editor. 1st edition, Varanasi, Chaukhambha Orientalia; 2011; pp-697, p-143.
12. Sadananda Sharma, Rasa Tarangini, Pandit Kashinath Sastri, editor. Prasadani commentary by Sri Hari Dutta Sastri, 11th edition, NewDelhi; Moti Lal Banarasi Das Publishers; 2012; pp-772, p-89.
13. Sadananda Sharma, Rasa Tarangini, Pandit Kashinath Sastri, editor. Prasadani commentary by Sri Hari Dutta Sastri, 11th edition, NewDelhi; Moti Lal Banarasi Das Publishers; 2012; pp-772, p-266.
14. Chandra Bhushan Jha, Ayurvediya Rasashatra, Varanasi; Choukambha Surabharathi Prakashan; 2016; pp-481, p-73.
15. Sadananda Sharma, Rasa Tarangini, Pandit Kashinath Sastri, editor. Prasadani commentary by Sri Hari Dutta Sastri, 11th edition, NewDelhi; Moti Lal Banarasi Das Publishers; 2012; pp-772, p-22.
16. Vagbhata, Rasaratna Samuchchaya, Acharya Siddinandan Mishra editor. 1st edition, Varanasi, Chaukhambha Orientalia; 2011; pp-697, p-231.
17. Vagbhata, Rasaratna Samuchchaya, Acharya Siddinandan Mishra editor. 1st edition, Varanasi, Chaukhambha Orientalia; 2011; pp-697, p-242.
18. Sadananda Sharma, Rasa Tarangini, Pandit Kashinath Sastri, editor. Prasadani commentary by Sri Hari Dutta Sastri, 11th edition, NewDelhi; Moti Lal Banarasi Das Publishers; 2012; pp-772, p-22-24.
19. Sadananda Sharma, Rasa Tarangini, Pandit Kashinath Sastri, editor. Prasadani commentary by Sri Hari Dutta Sastri, 11th edition, NewDelhi; Moti Lal Banarasi Das Publishers; 2012; pp-772, p-261.
20. Sadananda Sharma, Rasa Tarangini, Pandit Kashinath Sastri, editor. Prasadani commentary by Sri Hari Dutta Sastri, 11th edition, NewDelhi; Moti Lal Banarasi Das Publishers; 2012; pp-772, p-19
21. Rasarnava, Rasachandrika commentary by Sri Indradeo Tripathi, Bhagirathi notes by Pandit Taradatta Panta, Dr Sri Krishna Dixit, Editor, Varanasi, Choukambha Sanskrit Series; pp-442, p-109.
22. Vagbhata, Rasaratna Samuchchaya, Acharya Siddinandan Mishra editor. 1st edition, Varanasi, Chaukhambha Orientalia; 2011; pp-697, p-64.
23. Sadananda Sharma, Rasa Tarangini, Pandit Kashinath Sastri, editor. Prasadani commentary by Sri Hari Dutta Sastri, 11th edition, NewDelhi; Moti Lal Banarasi Das Publishers; 2012; pp-772, p-439.

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