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Consequence and Impact of *Bhavana* in Ayurvedic Pharmaceutics – A Conceptual Study

Parween Bano^{1*}, Dev Raj Kshetri² and K Shankar Rao³

¹⁻³Rasa Shastra&BhaishajyaKalpana Department, NIA, Jaipur, Rajasthan, India

ABSTRACT

Ayurvedic pharmaceutics depend upon various technical application in different stages and these different stages are called 'Sanskara' in Ayurvedic term. *Accharya Charaka* has defined *Sanskara* as the transformation of inherent properties of drugs. Various methods are employed for this purpose among them *Bhavana* is most important factor which is implemented for *Shodhana*, *Marana* and to enhances the therapeutic efficacy. It is a very common pharmaceutical process by which the drug or drugs are soaked or lavigated in a liquid media like *Swarasa*, *Kwatha* etc by which the powdered drugs become the soft mass. It has various definitions throughout the texts. As per *Charaka Samhita*, liquid used for *Bhavana* should be equal or similar in properties and potency as that of *Bhavya Dravya*. It is the basic concept between the *Bhavana* and *Bhavita dravya* for *Samyoga*. The desired potency of any medication can be enhanced with the addition of the same quality liquid media and this concept can be correlated with the synergistic effects of the drug in modern perspective. In pharmaceutics, its aims are to change in physico-chemical composition, to increase drug efficacy even in smaller dose, to achieve multiple action and induce new properties. It also makes the drug particles finer via their *Sanghatabhedana* and materials become suitable for further procedures such as *Marana*, *Vati* preparation etc. Factors responsible for *Bhavana* are quantity of liquid, number of *Bhavana* etc. In modern science, the process of *Bhavana* can be correlated with wet grinding technique.

KEYWORDS

Bhavana, Levigation, Sanskara, Synergism, Therapeutic Efficacy



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INTRODUCTION

Ayurvedic pharmaceuticals depends upon various technical application in different stages and these different stages are called 'Sanskara' in Ayurvedic term. Accharya Charaka has defined Sanskara as the transformation of inherent properties of drugs. Various methods are employed for this purpose like *Agnitoya Sannikarsha*, *Shouch*, *Manthan*, *Bhavana* etc¹. Among them the *Bhavana* is the most important factor to reform therapeutic efficacy of a drug. *Bhavana* is a very common pharmaceutical process by which the drug or drugs are soaked or lavigated in a liquid media like *Swarasa*, *Kwatha* etc by which the powdered drugs are ground soft mass.

Aim of Bhavana:

1. Change their chemical composition & action (*Shodhana* of *dravya*).
2. Increase efficacy of drug.

Definition:

Bhavana has various definitions throughout the texts, varying on the amount of liquid and the required time for trituration or soaking. In this specific procedure in which the material/ materials are dipped², soaked and/or triturated to homogeneous mixing with the liquid media till complete absorption of liquid into the material, or allowed to dry³. Another definition quoted by *Bhaishajya Ratnawali* is that the

powdered drugs should be soaked in the liquid in the night and it should be kept in sun in the day and this procedure has to be repeated for seven times⁴.

Types of Bhavana: The *Bhavana* process may be carried out by two methods according to different texts -

1. Levigation method.
2. Soaking method.

❖ **Levigation method:** In this method, the material is mixed with particular liquid media and ground continuously for the specific period/time or till the whole material becomes like dry and required quantity of liquid that is enough to completely soak by the fine powder of the drug/drugs, according to *Rasa Tarangini*.

❖ **Soaking method:** In soaking method powdered drugs should be soaked in the liquid in the night and it should be kept in sun in the day for drying. Trituration (*Mardan*) is not necessary in this method because only liquid is poured into the powder of drugs and whole mixture is left for dry.

Factors Responsible in Bhavana:

1. Quantity of liquid for Bhavana: The quantity of liquid should be taken as much as that the powder drug become completely wet or get immersed (i.e. *Sarvamplutam Bhavet*)^{5,6,7} and can be easily grinded. This further depends upon quantity of powder as well as its absorption capacity and also



penetrability of the liquid itself into the powder.

2. Number/Day of *Bhavana*: Number of *Bhavana* is not clearly mentioned in most of the classics except *Vaidyaka Paribhasa Pradipa* and *Bhaishajya Ratnawali* which says that if no any stipulation has been mentioned about number/day of *Bhavana* for a particular formulation then the *Bhavana* procedure should done for seven days^{8,9}.

3. Preparation of *Kwatha* for *Bhavana*: If *kwatha* is employed for *Bhavana* process it may be equal to the quantity of the *Bhavita Dravya*. The *kwatha* is prepared by adding eight times water and reducing to one eighth¹⁰.

4. Relation between *Bhavita Dravya* & *Bhavya Drava*: Properties and potency of *Bhavana Dravya* may be same or opposite of the main drug (*Bhavita*) as per *Acharya Charaka*¹¹.

***Samyaka Bhavita Lakshana*:** As per *Accharya Shri Haridatt Shastri* commentator of *Rasa Tarangini*, “*Chipitibhuiya Churnitam*” and “*Mardavayuktam*” are *Samyaka Bhavita Lakshana*. When drug attains these characters after completion of *Bhavana*, then it is termed as *Subhavita Dravya*¹².

DISCUSSION

Bhavana is one of the most important pharmaceutical processes in *Ayurveda*. The term *Bhavana* is mention from *Charaka Samhita* in prospective of *Sanskara*. Although types of *Bhavana* is not mention in classics, it can be divided into two types on the basis of procedure. Firstly lavigation method, in which the powders of drugs are grind with liquid substances up to a soft mass and allowed to dry. Secondly, the soaking or dipping method, in which the drugs are dipped in liquid media in the night and dried in day time. According to utility of *Bhavana* it may be again divided in two types viz. for the *Sodhana* purpose of minerals, *Visha*, *Upvisha* etc. and manufacturing process of drugs.

Usually grinding was done in lavigation type of *Bhavana* by which the physical and chemical composition of grinded drugs can be changed. This change may be possible due to trituration (*Mardana*) that the drugs become fine to finer by succeeding *Bhavana* by the process of “*Sanghatabhedana*”. Resulting this the bioavailability of the drug will be increased with more potent to active multiple action even in smaller dose^{13,14}.

In *Rasashastra*, *Bhavana* is a most important *Shodhana* process for metals, minerals, *Visha* and *Upvisha* (Table No 1&2).

**Table 1** Shodhana of Minerals through Bhavana

S.No	Minerals	Shodhana Drava	Day or No of Bhavana	Reference
1.	Sasyaka	RaktaVarga	-	Rasrnava 7/45
2.	Gandhaka	Godugdha or Ardraka or Bhringraj or NimbuSwarasa	7 times	Rasrnava 7/72-73
3.	Gairika	Godugdha	7 times	RasaRatnaSamucchya3/49
4.	Kasisa	Bhringraj or JambiranimbuSwarasa	1 day	RasaRatnaSamucchya3/45 Brihad Rasa Raj Sunder
5.	Manahshila	Agastayapatra/Ardraka/ BijouranimbuSwarasa	7times	RasaRatnaSamucchya3/93 RasaTarangini11/101
6.	All Anjana Kankushtha	BhringrajSwarasa ShunthiKwatha	- 3 times	RasaRatnaSamucchya3/105 RasaRatnaSamucchya3/114
7.	Hingula	Nimbu/Ardraka/LakuchaSwarasa	7 times	RasaTarangini 9/16 RasaRatnaSamucchya3/142

Table 2 Shodhana of Visha & Upvisha through Bhavana

S.No.	Visha&Upvisha	Shodhana Drava	Day or No of Bhavana	Reference
1.	Krishna SarpaVisha	SarshapaTaila	-	RasaTarangini24/536
2.	Ahiphena	ArdrakaSwarasa	21 times	RasaTarangini24/242
3.	SnuhiKsheer	ChinchaPatraSwarasa	-	RasaTarangini 4/517
4.	RaktaChitraka	ChurnaUdaka	-	RasaTarangini24/575

By this, drug may detoxify from *Dosha* through chemical changes. Chemical changes has been done in material by several factors comes from the liquid which is used in *Bhavana* process. As for example, in *Manahshila Shodhana* with ginger juice occurs phytochelation & methylation. Here liquid media i.e. ginger juice contain two important sulphur based amino acids called Cysteine and Methionine which can act as phytochelatins which are heavy metal-binding peptides that play an important role in detoxification of heavy metals by chelation. Also Cysteine is a methyl donor peptide which helps in the process of methylation of arsenic present in *Manahshila*¹⁵. In another study, it is claimed that ginger is acidic in nature

where as *Manashila* is alkaline. Because of acid-base reaction the alkalinity of *Manashila* is reduced and is safer to use. By this process arsenic present in the *Manashila* becomes nontoxic showed in experimental study¹⁶. In *Tuttha Shodhana* with lemon juice through *Bhavana* its changes into bright blue to light blue colour. It may be due to some chemical changes.

Bhavana implemented in *Marana* process for various metals and mineral also. This is to help the metal or mineral drugs to change their physical and chemical structures to reach the expected particle size and colour of *Bhasma*. To obtain desired colour of *Bhasma*, *Bhavana* has to be given with different liquid, e.g. to prepare red colour of



Abharaka Bhasma, *Bhavana* should be given with *kwatha* of *Nagbala*, *Nagarmotha*, *Vata Moola*, *Haridra* & *Manjistha* and milk of *Vata*¹⁷. It also provides the trace elements in finished product from liquid material; thereby it will be suitable for use directly in further pharmaceutical processing. Soaking method of *Bhavana* is applied for purification of *Vatsnabha*, *Shilajatu* etc and also in preparation of thousand *Puti Abhraka Bhasma*¹⁸.

Through the *Bhavana* process, action of any drug may increase or decrease by adding different *Bhavana dravyas* (liquid)¹⁹. *Bhavana* with *Swarasa* or *Kwatha* of similar quality (*Tulyaviryas Dravya*) of drug enhanced potency of main drug by which therapeutic dose will be reduced²⁰, e.g. in *Amlaki Rasayana*, *Amlaki Churna* is given *Bhavana* with *Amlaki Swarasa* or *Kwatha*.

It also brings lowering the *Tikshnatva* of drug to prevent adverse effects and desired efficacy, e.g. *Ahiphena* is lavigated with *Tulasi* or *Ardraka Swarasa*. These can be correlated with the synergism and antagonism action of modern science.

Bhavana is even disease specified e.g. same formulation can be used in different diseases by using different liquid as *Bhavana* e.g. *Basantkusumaker Rasa* in *Prameha*²¹ and *Rasayana-Vajikarana*²². The *Shodhita Bhanga Patra* are lavigated with *Godugdha* which is used in aphrodisiac formulations²³. In *Kharaliya Rasayana* preparation with *Bhavana* process, somewhere it increases potency of drug, somewhere it reduces undesirable pharmacological actions, somewhere it helps to preparation of pills (Table No 3 & 4).

Table 3 Formulations with Different Ingredients & *Bhavana Drava*

S.No.	Formulations	Ingredients	<i>Bhavana Drava</i>	Indication	Reference
1.	<i>Chandraudaya Ra</i>	<i>ShuddhaParada</i> , <i>Gndhaka</i> , <i>Vanga&AbhrakaBhasma</i>	<i>Nimbu,Ghritkum</i> <i>ari&ChitrakaSw</i> <i>arasa</i>	<i>JeernaJwara</i> , <i>Kasa, Shawasa</i> , <i>Unmad&Dhanu</i> <i>rvata</i>	<i>RasaRajSund</i> <i>ar</i> , <i>RasaRatnaSa</i> <i>mucchya</i>
2.	<i>Chandraudaya Rasa</i>	<i>ShuddhaParada</i> , <i>Gandhaka</i> , <i>Vanga&AbhrakaBhasma</i> , <i>ChotiEla, Shilajatu</i>	<i>KadliArka</i>	20 <i>Prameha</i>	<i>BrihatNigha</i> <i>ntu Raj</i>
3.	<i>Dhaatriloham</i>	<i>AamlakiChurna</i> , <i>LauhaBhasma</i>	<i>TriphalaSwarasa</i>	<i>Vajikaran</i>	<i>Rasa</i> <i>Ratnakar</i>
4.	<i>Dhaatriloham</i>	<i>AamlakiChurna</i> , <i>LauhaBhasma</i> , <i>YashtimadhuChurna</i>	<i>Guduchikwath</i>	<i>Pitta Roga&</i> <i>Shula</i>	<i>BhaishajyaR</i> <i>atnawali</i> , <i>Rasa</i> <i>Kamdhenu</i> , <i>BrihatYogaT</i> <i>aranginiRasa</i> <i>yanSangrah</i>



5.	<i>LavangadiVati</i>	<i>Laung, Shunthi, Maricha, Tankan</i>	<i>Apamarg&Chitrak Kwath</i>	<i>Agnimandya</i>	<i>Rasendra Sara Sangrah, Rasa Chandanshu, BhaishajyaRatnawali</i>
6.	<i>LavangadiVati</i>	<i>Laung, Maricha, Bibhitak, Khadirsara</i>	<i>BabbootwakKwatha</i>	<i>Kasa</i>	<i>VaiddakaJeevan</i>
7.	<i>Kamdudha Rasa</i>	<i>ShuddhaSwarnagairika</i>	<i>AamlakiSwarasa</i>	<i>Jwara</i>	<i>RasayanSangrah</i>
8.	<i>Kamdudha Rasa</i>	<i>ShuddhaSwarnagairika, Guduchi, AbhrakaBhasma</i>	<i>No Bhavana</i>	<i>Amlapitta</i>	<i>RasayanSangrah</i>
9.	<i>Sutashekhar Rasa</i>	<i>ShuddhaParada, Gandhaka, Vatsanabha, Tankan, DhatturaBeeja, Swarna, Tamra&ShankhaBhasma, Trikatu, Chaturjat, Belgiri, Kachoor, Kajjali</i>	<i>BhringrajSwarasa</i>	<i>Amlapitta, Charadi, Shula, Gulma, Kasa-Hikka, Grahini, TridoshajAtisara, Mandagni, Daha, Rajyakshma</i>	<i>YogRatnakar, RasayanSangraha,</i>
10.	<i>Sutashekhar Rasa</i>	<i>Abharaka, Swarna, Tamra, Lauha&ShankhaBhasma, ShuddhaVatsanabha, Tankan, DhatturaBeeja, Trikatu, Chaturjat, Shunthi, Nagkesar, Kastoori&Rasasindoor</i>	<i>Bhringraj&ArdrakaSwarasa</i>	<i>Raktaddyakapha Raga, JeernaJwara, Pandu, Prameha, Yakshma, VatapittaJanya Roga</i>	<i>Rasa Chandanshu</i>

Table 4 Formulations with Same Ingredients but Different *Bhavana Drava*

S.No.	Formulations	Ingredients	Bhavana Drava	Rogadhikar	Reference
1.	<i>BasantKusumakar Rasa</i>	<i>Swarna, Abhraka, Lauha, Parada, Vanga, Praval, Mukta</i>	<i>Godugdha, Ikshu, vasa, KadliKand, Haridra, Vajra, Shatpatra, Maltipushpa, Ushirdvaya, Kastoori</i>	<i>Prameha</i>	<i>Rasa RatnaSamucchya</i>
2.	<i>BasantKusumakar Rasa</i>	<i>Swarna, Abhraka, Lauha, Parada, Vanga, Praval, Mukta</i>	<i>Godugdha, Ikshu, vasa, Kadlikand, Shatpatra, Maltipushpa, Kastoori, Laksha, Udichya</i>	<i>Rasayan&Vajikaran</i>	<i>Rasendra Sara Sangrah</i>

Accharyas have different views regarding volume of liquid to be used for *Bhavana*. *Rasa Tarangini* has mentioned that the quantity of liquid should be taken as much as that the powdered drug became completely wet, whereas according to *Sharangadhar Samhita*, material should get

completely immersed in liquid media. Practically it is observed that it depends upon the process of *Bhavana*. When it is Soaking method then *Rasa Tarangini* process is better to apply but when Lavigation method is implemented then



Sharangadhara method is better for easy trituration.

There is also much confusion regarding time or number of *Bhavana*. Different classics defined number of *Bhavana* either in time, days or number like one or two day for *Hridayarnava Rasa*, *Arogyavar dhinivati*²⁴. Three number of *Bhavana* in *Agnisandipan Rasa*²⁵. Twenty times in *Ajirna kantaka Rasa*²⁶. But there are also some drug have not mention times or number, eg. *Navajwarankush Rasa*, *Mritunjaya Rasa*, *Tarunjwarari Rasa*²⁷. *Vaidyaka Paribhasa Pradipa* has clearly mentioned the procedure for seven times for these *Anukta* number of *Bhavana* whereas seven days as per *Bhaishajya Ratnawali*.

When *kwath dravya* is used as liquid media in *Bhavana* process it should be equal to the quantity of the *Bhavita Dravya*. This *Kwatha* will be prepared adding eight times water and reducing up to 1/8th. When more than one *Bhavana Dravyas* are used in a particular preparation, there are mentioned the particular sequence of *Bhavna Dravya*, it may be to maintain sequence of chain chemical reactions facilitating the production to desire multiple therapeutic applications, which may be much more effective than the original drug e.g. *Gandhaka Rasayan*.

According to modern pharmaceuticals, process of *Bhavana* can be correlated with wet grinding technique. In the preparation of colloidal dispersions, suspensions, emulsions and ointments, wet grinding has become an integral part of processing.

CONCLUSION

The impact of *Bhavana* in pharmaceuticals is to bring physical and chemical changes, to incorporate some trace elements in the final product and to increase the therapeutic potential of drugs. In modern science, the process of *Bhavana* can be correlated with wet grinding technique.



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