

## Rationality of Ayurvedic pharmaceutical procedures

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### ABSTRACT

The system of Ayurveda is different from other disciplines of life science due to its holistic approach and systematic documentation. Alike other branches of Ayurveda, rational scientific thoughts are found in its pharmaceutical branch too. Various measures were adopted in classical Ayurvedic pharmacy to concentrate the desired fraction and to arrive at a product with desired characteristics with therapeutic efficacy. Various classical pharmaceutical procedures such as *Bhavana* (Trituration), *Shodhana* (Purification), *Marana* (Incineration), *Amritikarana* (Notarisation), *Satvapatana* (Extraction of metal) are adapted to convert the raw metals and minerals into easily absorbable, palatable and quick acting therapeutic form.

**Key words:** Ayurveda, Bhavana, Shodhana, Marana, Rationality.

### INTRODUCTION

Notion of Ayurveda is framed upon 'Trisutra' (03 principles) viz. *Hetu*, (cause of diseases) *Linga* (Sign & Symptom) and *Aushadha* (Medicines)<sup>1</sup>. In this system drugs having plant, animal or mineral origins are like and instrumental aid to a physician.

Acharya Charaka was observed, in this world, no substance the may not be used as medicine of this or that purpose<sup>2</sup>. Purposiveness and rationality are the two parameters to judge and use of any substance as medicine. For better learning Ayurvedic formulations are mostly classified into two types; *A*. single drug formulations and *B*. compound drug formulations. Till today, about one thousand single drug and eight thousand compound formulations of recognize merit is in vogue. Again the formulations are grouped in two groups i.e. *Kasthausadhi* (herbal formulation) and *Rasausadhi* (herbomineral formulations). *Rasa Shastra* (Ayurvedic Pharmaceutics) is named after mercury

and allied minerals.

Ayurvedic pharmaceutics is generally studied under two branches i.e. *Rasa Shastra* (predominately processing of metals/minerals) and *Bhaishajya Kalpana* (processing of herbals and herbomineral compounds). Grossly Ayurvedic pharmaceutics dealt with collection and selection of drugs of herbal/metal/mineral origin, their processing, preservation, besides mode of administration and posology.

Processing techniques converts original raw material into pharmacological active form. Usually processing techniques are by dilution, application of heat, cleansing, churning, storing, maturing, flavouring, preservation in container etc., knows as different *Sanskaras*. Undergoing through different *Sanskaras* (Pharmaceutical process) transformation of good pharmacological action takes place, in other words *Sanskaras* effects the changes of the property of a drug.

### Importance of pharmaceutical process

Even medicine that is not prepared properly turns to *visha* (poison) in contrast if *visha* is prepared according to rules and regulation it can be used as in the form of medicine<sup>3</sup>. According to Acharya Charak, to treat any disease successfully, a physician should have genuine quality of drug in hand, not only this but also a physician becomes competent to cure all diseases only when he possesses the complete knowledge of all drugs including the principles of its manufacturing.

The rule of potentiation of the drug action has been explained well by Charaka and Vagbhata. It is said that even a simple drug could be made in to most powerful one by simple procedures like addition or deletion of certain drugs, by keeping the drugs with certain *bhavana dravyas* (trituration media) for a specific time, by collecting the drugs schedule period, by following certain modificatory procedures and by one's own intelligence.

Charaka says that after proper processing even a poisonous or *tikshana dravya* can convert into excellent medicine. Ancient Ayurvedic scholars are very much rational and have strong scientific backgrounds in fundamentals principle, concerning with drug manufacturing.

Ayurvedic doctrine tells, to treat a patient as a whole and not a disease alone. A substance (crude drug) becomes *ausadha* (medicine) only when it is subjected to *Kalpna* (manufacturing and presenting to proper dosage form). The nature of the drugs governs the dosage form to be prepared from it. Hence the drugs were prepared in different dosage forms due to several reasons.

### Shodhana<sup>4</sup> (≈Purification)

The literal meaning of the term '*shodhana*' is purification. It is necessary to explain the exact implication of this term. Charaka has explained this term as '*Gunanteradhana*'<sup>5</sup> (induction of the desired quality). During the process of *sanskara/shodhana*, the metals or mineral acquires a different property which is useful therapeutically and which overcomes original harmful effects of the metal. *Shodhana/Sanskara* have following objectives in view:

- ' Making hard material brittle.
- ' Elimination of associated/adherent

impurities.

- ' Conversion of some of the characteristics of drugs.
- ' Enhancement of drug efficacy.

Minerals, metals, gems, calcium resources and certain animal and plant poisons etc. if used in human being without proper treatment, many toxic effects must be produced. Some times contamination takes place during storage, extraction and distribution and similarly during commercial transaction. Some extraneous or unwanted substances were added to them artificially by the greedy businessman, which produces toxic effects even in least quantity, therefore, in the era of pharmacovigilance serious care must be taken in steps to avoid adverse and toxic effect, even death.

### Bhavana<sup>6</sup> (≈Levigation)

In Bhavana, powdered substance is triturated with *swarasa* (juice)/*kwatha* (decoction) of desired material in a *khalva yantra* (mortar and pestle) until the material dries up. For this purpose, only that amount of liquid is added to make the whole substance and fill the container up to upper level of the substance. The main purpose of *bhavana* is as follows:

- ' To disintegrate the material.
- ' To facilitate *marana* (incineration) process.
- ' To enhance the properties of material.

### Marana<sup>7</sup>(≈Incineration)

The term 'Marana' has been derived from the Sanskrit word *Maryate, Nashyate, Bhasmikriyate*, which means killing, running or /and covering into ashes. Metals, minerals, gems and jewels are added with drugs in various forms and then cooked to reduce them to the state of fine powder in specially arranged cow dung cakes fire. These are non toxic and easily digestible as well assimilable. *Marana* may have the following significances:

- ' To disintegrate the substance into fine particles.
- ' To convert metals and minerals into therapeutically useful form.
- ' To minimize/remove their toxic effect.
- ' To enhance required qualities in drugs so as to make it enable for specific action in human body.

- ✓ To obtain stable dosage form of drugs.
- ✓ To convert the drugs in to palatable form.
- ✓ To make the material absorbable, adaptable and assimilable form.

#### **Amritikarana<sup>8</sup> (≈ Nectarization)**

Some poisonous metals do not give up their toxic effects completely even after *shodhana* and *marana*. They are further processed by adding more drugs till they become absolutely free from any toxic effect. This process is called *Amritikarana* or inculcation of the properties of nectar to the drug. It potentates *bhasma* qualities (Gunas) and induces colour loss (Varna hani)<sup>9</sup>. *Amritikarana* is done after *Marana* as a precautionary measure<sup>10</sup>.

#### **Satvapatana<sup>11</sup> (≈Extraction of metal)**

The drugs of mineral origin when mixed with alkaline, acidic and fusing materials and subjected to intense heating in specially designed furnace liberates their sara portion (metallic content) i.e. satva (essence) and the process is known as satvapatana. Satva is considered many fold more qualitative in comparison to bhasma of the particular raw material. Satva is used in mainly tow conditions:

- ✓ In mercurial preparation (Parada sankara and karma): In Rasa literature many satvas have their important role in mercurial processing.
- ✓ In therapeutics: Satavas are more effective in therapeutics like Abhraka satva in comparison to loha bhasma<sup>12</sup>. Also some where satava is administered to the patient where bahsma is contraindicated e.g. in pregnant lady loha bhasma is replaced by abhraka satva bhasma.

#### **DISCUSSION**

Ancient scholars were aware about the toxic qualities of minerals and metals. As such they cannot be used. If used they may produce many untoward effects. Safety and efficacy was the prime task before the ancient scholars and they were succeeded in this direction. Shodhana (indigenous purification procedure), Manara (indigenous incineration/calcinations procedure), Samskara (specialized 8 fold of indigenous process used for mercury) etc. were developed. Plant materials are commonly used in mineral processing to convert them into different safe and effective doses forms. With the advent to these processing techniques metals and minerals became frequent in therapeutics. Further with the combination of plant and mineral products numerous formulations were derived.

#### **CONCLUSION**

- ✓ Rationality of pharmaceutical processes in Ayurveda is highly significant in various angles.
- ✓ By process of bhavana, material loosens the molecular cohesiveness which helps the metal to break into fine particles during the subsequent processing.
- ✓ The vegetable drugs which are used in the form of decoction or juice have their own therapeutic properties, imported and marana, the drug become non-toxic, easily digestible and absorbable, suitable for metabolic changes, assimilable by tissue cells and become therapeutic potent.

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