

## Classical View on *Bhasma* as Chief Formulation of *Rasashastra*: An Ayurveda Review

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### REVIEW ARTICLE

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### ABSTRACT

Minerals and metals based drugs possess important therapeutic potential and preparation of such medicines described in *Rasashastra* which deals with minerals and metals based formulations. The processing techniques related to the preparation of these medicines are very specific to make these drugs nontoxic and efficacious. *Shodhana* means purification and *Marana* means incineration/calcinations are main procedures associated with the preparation of *Rasa-Aushdhis*. *Bhasmas* are important preparation of this category which is considered as herbo-metallic preparation and description of *Bhasma Kalpana* is found in Ayurveda *Samhitas* during *Arsha Sampradaya*. These herbo-mineral/metabolic formulations (*Bhasma*) mainly prepared by various steps of purification, grinding, mixing, heating, incineration and size reduction, etc. These drugs possess advantages of palatability, low dosing frequency, high potency, good bioavailability, optimum absorption and wide range of therapeutic spectrum. *Bhasma* not only used for therapeutic purpose but also advised for promoting general health and rejuvenating effects. *Makshika bhasma*, *Swarna bhasma*, *Abhrak bhasma*, *Louha bhasma* and *Tamra bhasma*, etc. are commonly used *Bhasma* preparation indicated for many pathological conditions including skin diseases, digestive ailments, sexual disorders, asthma and infections, etc.

**Keywords:** Ayurveda, Rasashastra, Bhasma, Shodhana, Marana

### 1. Introduction

The natural substances have been used extensively for therapeutic purpose and in this regard Ayurveda suggested herbs, metals and mineral based preparations for treating several health ailments. The *Bhasma* is one such type formulation prepared from metal/mineral after their detoxification. *Bhasma* mainly prepared by incinerating metals and used as nano-medicines. The process involved in the preparation of *Bhasma* convert toxic metals into not-toxic biologically

compatible form. The therapeutic effect and optimum pharmacokinetic properties of *Bhasma* can be attributed to their small particle size which facilitates easy transportation of active ingredients to the specific target sites. (1-5)

Rasa Shastra described various methods for the preparation of *Bhasma* including *Shodhana*, *Marana*, *Amritikarana*, *Satavapatana* and *Samskara*, etc. Some intermediate steps *Bhavana*, *Chakrikanirmana* and *Saravasamputikarana*, etc. also play important

role in the preparation of *Bhasma*. These preparatory methods impart high therapeutic value in *Bhasma* and convert non compatible form of metal or mineral into biological compatible form.

*Bhasma Kalpana* provides higher efficacy in lower dosing, good palatability, and optimum absorption in biological system, stability and ability to cure chronic health ailments. *Bhasmikaran* involves certain *Samskaras* by which toxic or non-compatible form of mineral/metal get converted into non-toxic and compatible form with retention or enhancement of therapeutic potency. *Bhasmikaran* give micronized size of ingredients due to which active drug get absorbed easily and passes through minute channels of body. The one of the important preparatory step of *Bhasmas* is treatment of metallic/mineral preparations with herbal juices or decoction for certain period of time. This process helps to detoxify mental/minerals used for *Bhasmas* preparation and selection of plant juices and decoction merely depends of types of *Bhasmas*. (2-4)

### Method of Preparation

#### ❖ Pre treatment

This was done by performing *Shodhana* (purification) procedure to detoxify harmful substances.

#### ❖ Main Procedure (Incineration/Calcination)

Incineration or calcination considered as main procedure which described as *Marana* in Ayurveda, this involves some intermediate steps such as; *Bhavana*, *Hakrikanirmana* and *Sarava-Samputikarana*.

#### ❖ Post Procedure

The *Lohitikarana* and *Amritikarana* are process which employed as post procedure after preparation of *Bhasma*, these processes improves quality of *Bhasma* preparation.

### Role of Specific Procedures in Preparation of *Bhasma*:

- ⊕ *Sodhana* helps in purification this can be done using herbal extract, juices and decoction.
- ⊕ *Bhavana* provides wetness since it performed as wet trituration.
- ⊕ *Chakrikanirmana* used for pelletization purpose, it is important for proper dosing formulation. *Chakrikanirmana* facilitates homogenous heating since proper transmission of heat occurs from periphery to core of *Chakrika*.
- ⊕ *Aatapa Shoshana* helps to dry pellets.
- ⊕ *Saravasamputikarana* brings sealing of casserole. This process protects material from contamination, avoids loss during heating treatment, facilitate homogeneous atmosphere and prevents escape of volatile material.

### *Putapaka Bhasma*

These are *Bhasma* which prepared by *Putapaka* method in which minerals or metals subjected for *Shodhana*, *Bhavana* and *Marana*. Metals or minerals converted to coarse powder and subjected to purification (*Shodhana*), that after metals or minerals heated to red hot and treated with particular liquid media for specific times. Thereafter *Shodhita* substance mixed with particular drugs for *Marana* purpose and *Bhavana* is given using specific drug for particular time period. *Chakrikas* prepared after completion of *Bhavana* and sealed in crucible with mud smeared clothes. *Sharava Samputa* is subjected for heating using *Putas* for particular time period. These procedures repeated for many times to get desired quality of final *Bhasma* formulation. The metals possess low melting point like; tin, zinc and lead require an intermediate procedure called *Jarana* which is performed between *Shodhana* and *Bhavana* procedure. *Jarana* involves melting and mixing of metals with some

plant substance, that after rubbed till to get powder form. (5-7)

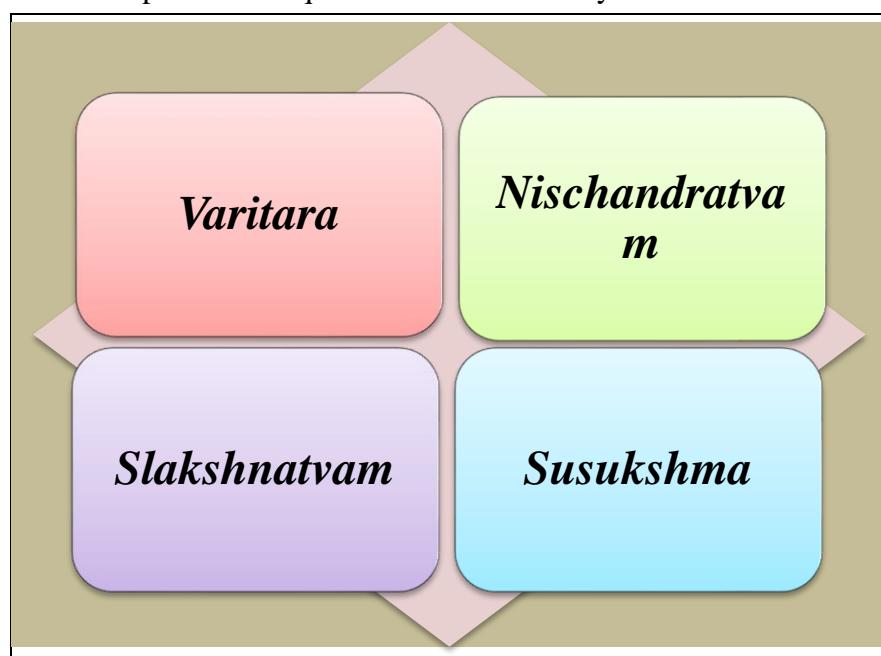
### **Kupipakwa Bhasma**

*Kupipakwa Bhasma* is prepared by utilizing various processes i.e.; *Shodhana*, *Kajjali Nirmana*, *Bhavana* and *Kupipakwa*. Metals is subjected to form amalgam with mercury after *Shodhana* procedure and then mixed with purified sulphur then triturated till to get black fine powder which is termed as *Kajjali*. This *Kajjali* is triturated with particular liquid

media for certain period of time. Dry mixture filled in *Kachkupi* covered with seven layers of mud smeared cloth. The container subjected to *Vaaluka Yantra* for specific time period, *Bhasma* is collected from the bottom of *Kachkupi* (bottle) after its break down. (7-10)

### **Bhasma Qualities and Bhasma Pariksha**

*Bhasma* should possess some properties and quality standards as depicted in **Figure 1**, these qualities of *Bhasma* can be evaluated by some *Pariksha*.



**Figure 1.** Desirable properties of *Bhasma*

*Bhasma* should possess specific colour, alteration in specific colour indicates improper formation of *Bhasma*.

*Bhasma* should possess quality of *Nischandratvam* since after proper incineration luster of metal lost. *Bhasma* when observed in bright sunlight, it must be *Nischandra* to give desired quality and potency.

*Bhasma* offers *Varitara* properties based on the law of surface tension. When *Bhasma* is sprinkled on stagnant water then *Bhasma* should float on water surface. This test indicates lightness and fineness of *Bhasma*.

*Rekhapurnatva* is another property of *Bhasma* which used to confirm fineness of *Bhasma* particles which can fill lines of finger tips when rubbed in between finger and thumb.

*Bhasma* should possess *Slakshnatvam* which is sensation produced by simple touch with finger tips.

*Susukhma* is very important quality of *Bhasma*, *Sukshma Bhasma* absorbed easily and possess fineness and lightness.

*Gatarasatvam* is another typical quality of *Bhasma*, as per this criterion particular types of *Bhasma* should possess characteristic taste.

*Apunarbhavata* is one of the properties of *Bhasma* which indicates incapability of final *Bhasma* formulation to regain original metallic form.

### Conclusion

*Bhasma* is concept of nanotechnology in which drug particle size reduces to micronized or nano-sized form to get quick absorption and easy assimilation of drug inside the body. *Shodhana* and *Marana* are important procedures involved in the preparation of *Bhasma*; these processes convert metallic formulation into non-toxic, absorbable, easily digestible and biological compatible form with desired therapeutic potency. *Bhasmas* offers *Rasayana*, *Yogavahi*, immuno-modulatory, anti-aging and rejuvenating effects. *Nischandravam*, *Varitara*, *Rekhapurnatva*, *Susukshma*, *Gatarasatvam* and *Apunarbhavata*, etc. are common properties of *Bhasma*. *Bhasma* not only used for therapeutic purpose but also helps to restore normal physiological functioning of body. *Bhasma* prepared by specific method with lot of expertise therefore care should be taken during preparation of *Bhasma*.

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### Conflict of Interest

The authors declare that there is no conflict of interest regarding the publication of this article.

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