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/metallic 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 mental/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*, *Chakrikamnima* and *Sarava-samutikarana*, 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 on 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.

*Susukshma* 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 a concept of nanotechnology in which drug particle size reduces to micronized or nono-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 Rasayanana, Yogavahi, immunomodulatory, anti-aging and rejuvenating effects. *Nischandratvam, 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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