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REVIEW OF BHASMA: PILLAR OF AYURVEDIC PHARMACEUTICS

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ABSTRACT

Bhasma are unique ayurvedic metallic/minerals preparation, treated with herbal juice or decoction which are known to Indian subcontinent since 7th century A.D. and widely recommended for treatment of a variety of chronic ailments. Animal derivatives such as horns, shells, feathers, metallic, non-metallic and herbals are normally administered as Bhasma. A Bhasma means an ash obtained through incineration, the starter material undergoes an elaborate process of purification and this process is followed by the reaction phase, which involves incorporation of some other minerals and/or herbal extract.

KEYWORDS: Bhasma, Nanomedicine, Rasashastra, Rasa dravyaas.

INTRODUCTION

Ayurveda is the science made up of Veda (knowledge) and Ayush (life) i.e. knowledge of life. An Ayurvedic system adopts a holistic approach towards health care by balancing the physical, mental and spiritual functions of the human body. Rasa-Shastra (vedic-chemistry) is one of the branch of Ayurveda, which deals with herbo-mineral/metals/non-metals preparations.

The word Rasashastra literally means the “Science of Mercury”. It is a specialized branch of Ayurveda dealing mainly with materials which are known as ‘Rasa dravyas’. The products dealt under this discipline are an important component of Ayurvedic therapeutics.

Pharmacopoeia of ‘Ayurveda’ comprises of drugs derived not only from herbs but also from minerals, metals and animal products. According to the principles of ‘Ayurveda’, there is not a single substance in the Universe which does not have a potential to be used as a drug, provided it is used judiciously by the physician where it is required.[1]

According to the source of origin, the substances in the Universe are classified as[2]

- Jangama - animal sourced e.g. milk, meat, blood, urine etc.
- Audbhida - plant sourced e.g. leaves, root, stem etc.
- Paarthiwa or Khanija - mineral sourced e.g. gold, silver, copper, sulphur etc.

Caraka and Susruta describe the method of preparation of therapeutically useful metal powder which can be used as an individual drug entity or as an ingredient of a compound formulation. In ‘Samhitaa’ period the formulation of mineral and metallic preparation was restricted to preparation of fine metallic powders obtained by quenching red hot thin metal sheets in medicated liquids. In post ‘Samhita’ period, a new class of drug- form termed as ‘Bhasma’ came into existence in the science of ‘Ayurvedic Pharmaceutics’, with introduction of two new techniques. ‘Shodhana’ and ‘Maarana’. The term ‘Shodhana’ refers to therapeutic purification whereas the term ‘Maarana’ refers to incineration of metals/minerals by treating them with specifically prescribed medicinal herbs, to convert hard metal/mineral into fine and soft powder termed as ‘Bhasma’. The mastering of the art of ‘Bhasma’ preparation heralded the era of use of relatively safe and effective mineral and metallic drugs by the physicians. Physical and chemical tests were also developed to decide the safety of these drugs.

CLASSIFICATION OF BHASMA

1. Metal-based Bhasma.
2. Mineral-based Bhasma.
3. Herbal Bhasma.

CHARACTERISTICS OF BHASMA[3]

Physical Characteristics

- **Colour (Verna)**

A specific colour is mentioned for each Bhasma. Bhasmas are generally white, pale or red in colour. The colour of the preparation primarily depends on the parent material.

- **Lusterless (Nishchandratvam)**

Bhasma must be lustreless before therapeutic application. For this test, Bhasma is observed under bright sunlight whether lustre is present are not, if lustre is still present, it indicates further incineration (bhasmikarana).

- **Lightness and Fineness (Varitara)**

Bhasma should float on stagnant water surface. This test is based on law of surface tension. Properly incinerated Bhasma floats on water surface.

- **Rekhaapoornatwa**

The 'Bhasma' is said to possess this characteristic when particles of 'Bhasma' are fine enough to settle in the ridges of fingers, when rubbed between thumb and the index finger.

- **Particle size**

Prepared Bhasma should be in a powder form. Particle of Bhasma should be like pollen grains of Pondanus odoratissimus flower (ketaki rajah).

Chemical Characteristic

- **Apunarbhavatva**

It means incapability to regain original metallic form. For this test Bhasma is mixed with equal quantity of seeds of Abrus precatorius, honey, ghee, borax then sealed in earthen pots and heated with similar grade of heat. Thereafter particular Bhasma is observed after cooling.

- **Niruttha**

Niruttha is to test inability to regain metallic form of metallic Bhasma. In this test Bhasma is mixed with a fixed weight of silver leaf and kept in sealed earthen pots, then similar grade of heat is applied and after self-cooling, the weight of silver is taken. Increase in weight of silver leaf indicates improperly prepared Bhasma.

THE PROCESS OF PREPARING BHASMA[4]

- **Shodhana (Purification)**

By this process material becomes free from visible and invisible impurities, masses of minerals are converted to fine and brittle.

- **Bhavana**

It is a wet trituration process using mortar and pestle. By this the materials are mixed uniformly and divided in to fine particles by rubbing and attrition that is the force applied which help to increase the surface area of the material and thereby increases the rate of reaction.

- **Jarana**

Small pellets are made and dried in sunlight. Their melting point are increased due to oxidation process. These pellets are arranged in earthen sharava (casserole) and covered with another sharava. Joint are sealed and dried again.

- **Putapak**

Puta system of keeping – prepared sharava are heated, enumeration according to the nature of materials, inorganic part of plant material supplies trace elements to the materials. During putapaka material are formed on the surface of the particle.

- **Marana (Enumeration or calcinations)**

The compound materials are converted to another compound where elements are get reduced. Sometimes bhasmas are subjected to post-operative procedures like lohitikarana and amritikarana to enhance the therapeutic properties of bhasmas.

USEFULLNESS OF BHASMA FOR HUMAN BODY

1. Maintain optimum alkalinity for optimum health.
2. Provide easily absorbed and usable calcium.
3. Cleanse the kidneys, intestines and liver.
4. Maintain stronger bones and healthier teeth.
5. Alleviate insomnia, depression.
6. Keeps rhythmic heart beating.
7. Keeps arrhythmias and minerals balance.
8. Help metabolize iron in body.
9. Aid nervous system.
10. Breakdown heavy metals and drug residues in body.
11. Neutralize harmful acids that lead to illness.
12. Achieve a healthy alkaline level by neutralizing acid.
13. Protect body from free radical damage.

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