

LITERATURE REVIEW ON JAHARMOHRA

¹Dr Vishal S Chaudhari ²Dr Jyoti Gavali

¹PG Scholar, ²Professor Department of Rasashastra & Bhaishajya Kalpana

ABSTRACT

Jaharmohara bhasma is Ayurvedic mineral based formulation. It is prepared from *jaharmohara* stone, which is known as serpentine. Serpentine is a group of minerals having more than 20 varieties. *Jaharmohara* though mentioned in *Ayurveda* with wide range of utilities. Aim of present study was to compile available research work done on *jaharmohra* and provide brief information about different studies held on this. *Jaharmohra* is beneficial in menorrhagia, high blood pressure, digestive problems, as antidote, heart burn, gastroenteritis, etc. *Jaharmohara* is quite cheaper and frequently available drug. So to make it proper use of such beneficial drug, all information must be compiled for brief study and progress of *Ayurveda*.

KEYWORDS: *Jaharmohra*, Silicate of Magnesium, *Bhasma*, *Putra*

INTRODUCTION

Since the pre historic period, man has been using different sources of drugs for protection of health and treatment of various diseases. These drugs in *Ayurveda* are obtained from natural resources such as plant animal and minerals. Use of metals in therapeutics has been found since *vedic* period, which become important part of *Ayurvedic* therapeutics. *Rasashastra* is a branch of *Ayurveda* which deals with pharmaceutical preparation of various Herbo-mineral formulations. Among which mineral raw materials are classified into various groups according to their chemical interactions with mercury and therapeutic importance. In *rasashastra* branch the main emphasis of the science was to exercise mercury and mercurial preparations as medicine predominantly. *Rasaushadhis* were categorised in different group in *rasashastra*, one such group was *siktavarga*, *Nagapashana* was

considered in *siktavarga* with *badarashma*, and *dughdhapashana*. *Nagapashana*^[1] is one of the minerals from *sikata/Sudhavarga*. *Jaharmohra* is described in *unani* as well as in *rasashastra* texts. *Acharya yadavtrikamji* mentioned it for the first time in his book. *Rasamritam* and *sidhhayoga sanghra*. Basically, it is serpentine mineral group stone. *Jahar Mohra* is also famous with names like *Nagapashana*, *Nagashma*, Serpentine, Ophite etc. These names suggest that the stone acts as antitoxin to the venom of snakes and scorpions. It is a soft bright stone which radiates the shades of green, yellow and white colour. It is usually 2- 4 inches long flat stone with blackish stripes. It gives petrichor odour when dipped in water. It is also believed that smooth and light weight stones having grape like greenish tinge, are considered best in quality.^[2] Serpentine, a hydrous silicate of Magnesium [Mg₆(Si₄O₁₀)

X (OH)₈], is also known as Green Marble in avocation. *Jahar Mohra* results from the alteration, either during metamorphism or by late-stage hydrothermal action at temperatures below 4000C, of rocks rich in magnesium containing olivine, pyroxene or amphibole. Magnetite usually accompanies this alteration. Some serpentine occurs as large rock masses generally referred to as serpentinites. Nickel in minor amount is generally present in *Jaharamoharā*. A little amount of Calcium, Iron and Aluminium may also be present.^[3] Serpentine occurs as large rock masses generally referred to as Serpentinites. Their olive-green colour and smooth or scaly appearance is the basis of the name from the Latin 'Serpentinus',^[4] meaning "serpent rock,". It emanates clay like pleasant odour. *Jaharmohra* is full of potentials in treatment of cardiac weakness, liver disorder, chronic fever, general debility, rickets, etc. In menorrhagia *jaharmohra* provide support to reduce bleeding, weakness. It also has antihypertensive properties in visible dose more than 1 gm/day. It also has antibacterial, antimicrobial properties. It is coolant in nature.^[5]

Unani texts *Jahar Mohra* got established as an emergency medicine as it was found to be effective in management of epidemics like plague, cholera etc.^[6] Minimum information is given in the texts of *rasashastra* regarding *Nagapashana*. *Nagapashan* has cardio protective, antitoxic properties, neuro protective therapeutic effect which attracts to explore its thorough properties. It is also known as *jaharmohra* in *Unani* and local language. *Nagapashana* is complex chemical structure containing hydrogen magnesium and silica. *Nagapashana* is described in various *rasashastra* texts like *rasatantrasaarva siddha prayogsangraha*, *siddha yogsangraha* etc.,

These Texts describes *Nagapashana* on the basis of physical properties, therapeutic properties, pharmaceutical preparations of *Nagapashana*, Pharmacological effects and doses. Therefore, this topic is selected for article. References are available for different methods of formulation *Jaharmohrabhasma* in different classics. It is necessary to explore its chemical, analytical and therapeutic details. In this way current study is carried out to light on the importance of pharmacological efficacy of *jaharmohra*” from various *Ayurvedic* texts.

Nagapashana: *Nagashama* is found in China, Khata (now part of China), Tibbet, and Iran (Qandhar, Khurasan). In India it is found in Ajmer and Kota Districts of Rajasthan. *Zahar Mohra* found in Khata is considered of best quality and is known as *ZaharMohra*, China, Tibbet, Ladakh, Garhwal and Nepal mountains.^[7] In India, *Jaharamoharā* occurs mostly in metamorphic terrains of Rajasthan, Karnataka, Jharkhand, Madhya Pradesh and Andhra Pradesh. In Rajasthan, it occurs abundantly in Udaipur and Dungurpur districts.^[8]

Synonyms:

Latin: Lapis bezorticum.

Sanskrit: *Nagapashana*, *Nagashma*.

Hindi: *Jaharamoharā*, *Pssedaru*, *bazaar*.^[9]

English: Serpentine, Ophite.^[10]

Telugu: *Salagrama Sila*.

English - Serpentine, Green Marble

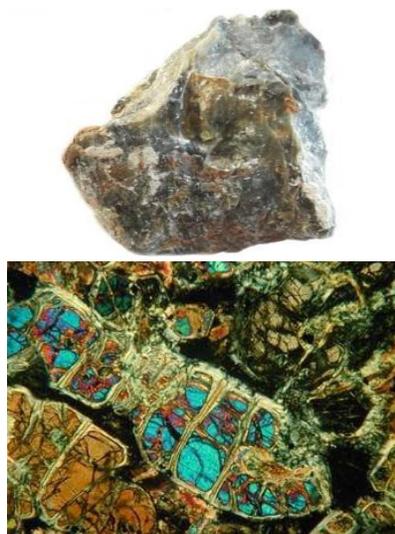
Urdu - *ZaharMohra*, *Hajr-us-sum*, *Fad ZahrMadani*, *Hajr-ul-behr* (N.F.U.M.)

Physical properties–

ZaharMohara is a Greenish white, good-looking mineral stone with a slippery feel having a good smell and taste obtained from mines. Various coloured such as white, yellow, green, dusty, and abrasive are described in literature, however the pale stones with white

and green hues are considered of good quality. It is also known as Bezoar stone or Serpentine. Blackish green in colour, Crystalline, coarse grained in nature, soapy feel greasy in lustre, translucent, perfect cleavage, conchoidal fracture, tough, hardness ranges 3.5-5, specific gravity 2.5- 2.76 optically bi-axial, negative, weakly birefringent with refractive index range 1.546-1.554.^[11]

IMAGES:



Chemical Properties-

The sample gets decomposed and gives off a little water at around 500 degrees, should contain not less than 30% magnesium oxide, 30 % Silica (SiO₂), 5% Ferric oxide (Fe₂O₃) and 5% calcium oxide (CaO) when analysed by gravimetric method. Should not contain more than 2 ppm of arsenic and 3 ppm of cadmium. May contain 0.15 % Nickel within ± 20% of limits when analysed by Atomic Absorption Spectrophotometer.^[12]

Definition of puta:

**RASADIDRAVYA PAKANAM
PRAMANA JNAPANAM PUTAM/
NESHTO NYOONADHIKAH PAKA:
SUPAKWAM HITAMOUSHADHAM //
(r.r.s.10/47)^[13]**

• Agni used for the *paka* of *Rasa*, *Uprasa*, *Sadaranarasa*, *Dhatu*, *Updhatu*, *Ratna*, *Upratna* known as *Putra*.

• If less or more *agni* subjected to *dravya* can destroy its properties.

Only “*SUPAKWA*” *dravya* considered as *Hitaoushadha*

The process by which mercury etc. drugs are levigated with herbs, made into small rounded cakes or pellets, dried and exposed to heat is altogether called *puta*.^[14]

Types of *puta*: -*Putra* can be classified into 3 types

Surya puta, *Chandraputa* and *Agni puta* based on the nature of heat given.^[15] Based on the intensity of heat given *Agni puta* is again divided into 3 that is *Mrduagni*, *Madhyamaagni* and *Tivraagni*.

Lavaka puta and *Kapota Puta* can be included under *Mrduagni*, *Kukkuta Puta* and *Varaha puta* included under *Madhyama Agni* and *Gaja Puta* and *Maha Puta* under *Teevra Agni*.^[16]

The *Putas* are described under different names to indicate the size of the pit and the number of cow dung cakes to be used, details of which are given in the *Paribhasha*. They also indicate the amount of heat required and the period of burning. The following *Putas* are commonly used in the preparation of *Bhasmas*: - 1. *Maha Puta* 2. *Gaja Puta* 3. *Varaha Puta* 4. *Kukkuta Puta* 5. *Kapota Puta* 6. *Bhand Puta*^[17]

Gajaputa:

According to RRS 1.1/4 x 1.1/4 x 1.1/4 (*Rajhasta*) 19, Ground should be flat and dry. Total no. of Cow Dung Used: 1000 (500 + 500)^[18]

According to *Rasendrachudamani* 21 1000 (700 + 300) also *Rasaprakashsudhakar* 22, and According to *Ayurveda prakash* 30 or

20 vanyopala²³. *Akika, Abhraka, Rajata, Yashada, Loha, Suvarna, Vajra, Hartala, Godanti, Trivanga*

BHASMA

Definition Powder of a substance obtained by calcination is called *Bhasma*. In this section, it is applied to the metals and minerals and animal products which are, by special processes, calcined in closed crucibles in pits and with cow dung cakes (*Puti*).^[19]

PREPARATION OF BHASMA

Bhasmikaran is a process by which a substance which is bioincompatible is made biocompatible by certain *samskaras* or processes.^[20]

The objectives of *samskara* are:

1. Elimination of harmful matters from the drug
2. Modification of undesirable physical properties of the drug
3. Conversion of some of the characteristics of the drug
4. Enhancement of the therapeutic action.

The name *Bhasma* is generally applied to all metallic and non-metallic substances that are subjected to the process of incineration and reduction into ash. Here it is applied to the scientific basis for *ayurvedic* therapies metals, minerals, and animal products that are, by special processes, calcinated in closed crucibles in pits with cow dung cakes (*puttam*). *Bhasmas* are prepared from purified minerals, metals and marine and animal products. In *Ayurveda*, the process of purification is called *sodhana*.^[21]

Steps used to prepare Bhasmas-

1. Shodhan (Purification): The principal objective of *shodhan* is to remove unwanted part from the raw material and

separate out impurities. Metals obtained from ores may contain several impurities, which are removed by subjecting them to *shodhan* process. In context of *bhasma*, *shodhan* means purifying and making the product suitable for the next step i.e., *Maran*. *Ayurveda* classifies *shodhan* into:

a. General Process for *Shodhan* The sheets of metals are heated till red hot and are successively dipped into liquids like oil, buttermilk, cow's urine etc.^[22]

2. Maran (Powdering): *Maran* literally means killing. As the name suggests in *maran* process, a change is brought about in the chemical form or state of the metal. This makes it to lose its metallic characteristics and physical nature. In short, after *maran*, metal can be converted into powder or other form suitable for administration.

Preparation of jaharmohara bhasma according to rasatantrasaarva siddha prayogsangrah:

i) Shodhana:

Raw *Jaharmohara* is washed thoroughly by water till all the physical impurities are removed. Then it is heated (*Pratapta*) upon the flame till it becomes red hot or the edges becomes red hot. Further it is quenched into *Godugdha*. This full procedure is repeated for 21 times. Now it is broken into the small pieces and powdered in motor and pestle.

ii) Marana: It is taken into *khalvayantra* and *godugdha* is added and levigated for six hours and a paste is made, further (*chakrikas*) are made and dried in the sun. Now this mixture is taken into *sarava* and closed with another *sarava*, then the edge is sealed with clay smeared cloth and dried. This *saravasamputa* containing the mixture

is kept into pit and accordingly *Gajaputa* is given. Then the *bhasma parikshan* is done. If *bhasma parikshan* is negative then further *putas* will be given. If *bhasma pariksha* is positive, (*rekhapurnatva*) then *bhasma* will be accepted.

CHARACTERIZATION OF BHASMA:

Traditionally the end points of incineration of a metal and its conversion to a *Bhasma* state are evaluated based on the following criteria:^[23]

1. Lustreless: There should be no *chandrika* or metallic luster (*nischandrika*)
2. *Rekhapurnatvam*: When a *Bhasma* is spread between the index finger and thumb and rubbed, it should be so fine as to get easily into the lines and crevices of the fingers and should not be washed out from the lines of the fingers
3. *Varitaratavam*: When a small quantity is spread on cold and still water, it should float on the surface
4. *Apurnabhava*: The *Bhasma* should not revert to the original state
5. Tasteless: *Bhasma* should be tasteless
6. *Avami*: The *Bhasma* should not produce nausea on administration.

Bhasmas, unless otherwise specified in individual formulations, are generally yellowish, black, pure white, grey, reddish black or red; depending upon the predominant drug as well as the other drugs used in the process of *marana*. *Bhasmas* are preserved in air tight glass or earthen containers. They maintain their potency indefinitely. They have no characteristic taste.^[24]

IMPORTANCE OF BHASMA

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.

Standardization of bhasma^[25]

It is very necessary to confirm its identity and to determine its quality and purity. It will also make sure the safety effectiveness and the acceptability of the formulation. But the most important challenge faced by these formulations is lack of complete standardization. An attempt has been made to summarize the ancient and the advanced methods available for standardization of *bhasma* such as *verna*, *varitara*, *rekhapurnatvam*, *niruttha*.^[26]

pH Value: The alkaline pH of the formulation favours dissolution under gastric conditions.

Loss on drying: The value show that in spite of formulation is mineral compound in nature it is hygroscopic. So, value may vary upon the condition of storage condition.

Total Ash: It determines the quantity of non-volatile inorganic material present in the drug.

Acid insoluble ash: Acid insoluble ash is designed to measure the amount of ash insoluble in diluted hydrochloric acid.

Water soluble extractive (%w/w): The determination of extractable matter refers to the number of constituents in a given amount of medicinal plants material extracted with solvents.

DISCUSSION

Ayurveda is a health care system of traditional medicine native to India and a form of alternative medicine. The earliest literature on Indian medical practice appeared during the Vedic period in India. Nano medicine has shown a great potential to address clinical needs in various diseases. There are varieties of engineered nanoparticles which have been studied and proved efficacious in the treatment of various diseases. However, toxicity and ethical issues of Nano medicine are of particular concern; whereas, *bhasma* are effective, safe, non-toxic when prepared and used judiciously. It is the need of the hour for us to convey the safety, non-toxicity of the *bhasma* among the practitioners and its utility in various diseases, to make them more effective in serving the society. Nano medicine has shown a great potential to address clinical needs in various diseases.

Jaharmohara is one of the main ingredients of various important Unani formulations. *Acharya yadvatrikamji* mentioned it for the first time in his book, *Rasamritam* and *sidhhayoga sanghra*. Adulteration in mineral drugs is a big issue, for identification of good quality material standards have been laid down.

Most of the *Ayurveda* and *Unani* Scholars are of the view that *Zahar Mohra* does not have toxic effects. *Jaharmohara* though

mentioned in *Ayurveda* with wide range of utilities. Aim of present study was to compile available research work done on *jaharmohara*. It is the need of the hour to evaluate its efficacy on epidemic diseases on scientific parameters. This review will help researchers for further studies of *Jahar Mohra*.

Nagapashana is known as *Jaharmohara* in *Ayurveda* and used in cardiovascular diseases. *Jaharmohra* is full of potentials in treatment of cardiac weakness, liver disorder, chronic fever, general debility, rickets, etc. Characteristic and analytical profile of *Jaharmohara* is mentioned in *Ayurvedic Formulary of Ayurvedic Medicine*. *Jaharmohara* is quite cheaper and frequently available drug. So, to make it proper use of such beneficial drug all available information is compiled for brief study and progress of *Ayurveda*. Herbo-mineral formulations of *Ayurveda* constituting *bhasma* as ingredients are as superior as it is today, in view of this high demand for the use of *bhasma*, there is need to bring about standardization of their raw material, preparation process and the end product.

CONCLUSION

From the above study conclusion is that, *Jaharmohara* is a mineral which is mentioned in traditional medicine. It is most useful in various disorders like cardiac weakness, liver disorder, chronic fever, general debility, rickets, etc along with its properties like significant efficacy, small dosage, safety, palatability and long consistency. But now there is a need to use this formulation practically for management of disorders. For this, pharmacological, analytical, toxicological,

animal trials and clinical studies should be conducted to standardize the therapeutic dose and usage of *Jaharmohara*.

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CORRESPONDING AUTHOR

Dr Vishal S Chaudhari

PG Scholar, Department of Rasashastra & Bhaishajya Kalpana

Email: vishalchaudhari8956@gmail.com

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