

A Brief Review of Kamsya (Bronze) Through Ayurvedic Literature

Dr. Arundhati Shirke¹

¹PG Scholar

Dept. of Rasashastra vam Bhaishajya Kalpana,
Bharati Vidyapeeth College of Ayurved, Pune.

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Abstract

Metals like Tamra (copper) are used since centuries in day-to-day life in the form of vessels as well as medicine. After the emergence of Rasashastra, Tamrabhasma occupied a significant place in ayurvedic clinical practice. Kamsya which is an alloy of copper with tin might possess its own set of physical, chemical, and biological properties. It means that there is a possibility that its Prabhavamay be different than that of the original metals. Therefore, it is worth exploring. The present paper aims to be a simple compilation of the literature available on Kamsya bhasma.

Keywords – Ayurveda, Bhasma, Kamsya, Bronze, Mishra loha

Introduction –

In a world of ever-increasing technology and machine controlled medical interventions, people are beginning to miss the individual art of healing touch. A more natural approach to health is needed with emphasis on natural therapies which have such a positive, holistic approach. Many Eastern cultures, such as those of China and India, have retained their strong traditional therapies, aimed at balancing energy and health. Our own traditional forms of treatment such as Ayurveda have also undergone resurgence in popularity and in recent years, increasing attention in the globe. Ayurveda Vedic poetic beauty of science with all its rhymes and cadences can be enjoyed not only by a Yogi, but by all. It also systematizes knowledge about health and disease in a practically applicable way.

As Rasashastra, iatro-chemistry is one of the branch of Ayurveda can be considered to hold a key role in therapeutics, since it deals with almost all the substances which are available in nature and advocate them for alleviating the diseases. It deals with Metals, Minerals, Herbo-mineral, and pharmaceutical processes such as Shodhana, Marana, Pistikarana, Amrutikarana and other unique Mercurial preparations like KharaliyaRasayanans, KupipakvaRasayanans, ParpatiRasayanans, PottaliRasayanans, which are mainly used for Rejuvenation and in treatment of critical illness to produce the drugs with higher efficacy in lower doses and with good permeability, and quick restoration of health.

Metals (loha) in Rasashastra is divided into three categories namely Shuddhaloha, Putiloha and Mishra loha. Kamsya is one of the Mishra lohadravaya. Mishraloha is alloy of two or more metals forming new metal which has different medicinal properties. Kamsya is alloy of 4parts of Tamra (Copper) and 1part of Vanga (Tin). Kamsya has Kashaya, Tikta Rasa, Lekhnakara, Ruksha, Sara, Vishada, UshnaGunas, Tridoshaghna,

Author Correspondence

Dr. Arundhati Shirke
Bharati Vidyapeeth College of Ayurved, Pune.
Email : arundhati.shirke@gmail.com

because of this reasons KamsyaLoha is one of the key ingredients in many classical formulations like Nityananda Rasa, which is indicated in Arbudavikara. Other formulations of Kamsya are KamsyaPishti Rasa, KshayaKesari Rasa, GulmavajraniVati, Chintamani Rasa, Nitynanda Rasa, PittalaRasyana, Purnachandra Rasa, Muktheadhya Rasa, Meghnad Rasa, Rasanjanadi Varti, Vatavidhwansa Rasa, Shambhukanjana Rasa, Shadanan Rasa.

HISTORICAL BACKGROUND OF KAMSAYA:

IN BRIHATRAYS - In Charaka Samhita, at different places, 8 types of loha. Among them Kamsya is lohas they have mentioned. Kamsya is beneficial in disease like Krimi, Kusta as mentioned in CharakaSamhita⁽¹⁾. Ancient Indian was having tremendous knowledge on Kamaya/Bronze metal. In Charaka Samhitakaala or period, Kamsya was used for making utensils, bells & statues⁽²⁾. Various usages of Kamsya have been mentioned in Sushruta Samhita also⁽³⁾. Both in Charakasamhita and Sushruta Samhita, have mentioned different usages of Kamsya, in making of bastineta, plates for food etc. Thus, it is evident that Kamsya was being used for both daily needs & in medical field. After 8th century uses of Kamsya is mentioned in Rasaarava⁽⁴⁾. Kamsya believed to be first made in "Sourastra". So that is also known as Sourastraja. After 8th century, apart from all these kind of uses. Usage of Kamsya was evolved into Bhasma form which has very important role in therapeutics. From those days, till now uses of Kamsya in different permutation & combination, for different kinds of diseases are well known in Rasashastra.

IN LAGHUTRAYI AND NIGHANTU: In Yogaratnakara, DhatuBhasma according to their colour, Kamsya is carbon black (Dhusara)⁽⁵⁾.

IN OTHER RASA GRANTHAS: According to Rasarava among 6 types of dhatu, Kamsya and Pittala have been mentioned in KritrimLoha⁽⁶⁾. In Rasendra Chudamani, Sri Soma deva, and in Rasa Ratna Samuchchya - Acharya Vagbhata, Classification of Loha, under Mishra loha, Kamsya and Pittala have been included. In Anandkanda,

Classification of 12 types of Loha - Kamsya comes under the Vartaloha⁽⁷⁾. According to Acharya Bindu, In Rasa Paddhati- Kamsya has been explained in Vartaloha. According to Govinda Acharya, In Rasa saar, Kamsya mentioned as loha. In Manusruti - Kamsya and other 7 dhatus and their shodhana methods is explained in detail⁽⁸⁾.

2. Material and Methods –

The information available on Kamsya was compiled by carrying out bibliographic exploration. The collection, compilation, and critical review of the concerned areas was done from all the available classical *Rasashastra* and modern texts. Also, various research articles relevant to the topic of study were referred.

2.1 Synonyms of Kamsya: Synonyms have a special importance and significance in identifying and understanding of a drug. Synonyms facilitate to identify the drug. Sometimes they indicate morphological structure, habitat, pharmacological properties and therapeutic action and use of the drug. Following are the some of the important Synonyms of Kamsya compiled from different texts: Kamsaka, Kamsya, Deepthaloha, Kamseeya, Ghoshapuspa, Sourastrika, Vahnlohaka, Ghoshanaad, Tamratrapuja, Sourastraja, Ghoshaka, Deepataka^{(9), (10), (11)}. The meaning of synonyms of Kamsya are stated in table 1.

Table 1: Meaning of synonyms of Kamsya^{(12), (13), (14)}

Name	Meaning
Kamsaka	The jala which is kept in kamsyapatra it is useful for netravikara.
Ghoshapuspa	Molten Vanga attains the shape of flowers after pouring in liquid media
Vahnlohaka	Which tolerates good amount heat
Ghosha	It produces bell sound while hitting on floor
Ghoshanaad	Kamsya produces loud and long resonating sound while hitting on floor
Deepthaloha	When heated it looks like luminous or flame like
Sourastrika	Which is more available in sourastrai.e Gujarat region
Taamratrapuja	Mixing of two dhatus Tamra and trapuja(Vanga)
Deepataka	When heated it glows with shine

2.2 Vernacular Names:

The vernacular names of Kamsya are mentioned in the table 2 below.

Table 2: Vernacular names of Kamsya⁽¹⁵⁾

Sr. No.	Languages	Names
1.	Sanskrit	Kamsyam
2.	English	White copper
3.	Hindi	Kansa
4.	Marathi	Kashya
5.	Latin	Bronze

2.3 Procedure to Prepare Kamsya:

According to Ancient Rasashastra 8 parts of Tamra and 2 parts of Vanga, are taken together and melted to obtain Kamsya. In Rasatarangini, for the preparation of Kamsyadhatu it is stated to take Musha and add four parts of purified Tamra to it, when it gets melts then add one parts of purified Vanga and stir together till it gets mixed properly, and then placed in an iron mold to get sheet of Kamsya⁽¹⁶⁾. This Kamsya should be used in making Bhasma. Note: Now a day's the available Kamsya is in the percentage ratio of 78% Tamra and 22 % Vanga. First copper should be melted. After Copper gets melted add Tin into that, stir it properly till both gets mixed uniformly. Rasaratna Samucchaya mentions eight parts of purified tamra and two parts of Vanga are taken together and melted to obtained the Kamsya⁽¹⁷⁾. The Kamsya which is produced in Saurashtra desha is said to be superior.

2.4 Kamsya Bheda (types):

In Ayurveda prakasha, Two Types of Kamsya has mentioned⁽¹⁸⁾.

1. PUSPA - Ati Shweta and Shreshta.
2. TAILIKA - Pitaabha, Hinagunayukta.

2.5 Grahya Kamsya:

The Kamsya which is Hyper- Resonant, Soft, Slimy, Dull White in Color, Clear and which become Red on heating, having these six characteristics is said to be best one⁽¹⁹⁾.

2.6 Agrahya Kamsya:

On the contrary, the Kamsya which has seven characters like, yellowish, becoming copper colored on heating, roughness, unevenness, brittleness, hypo- resonance, and lusterless is supposed to be inferior and it should be discarded⁽²⁰⁾.

2.7 Shodhana:

The raw drugs generally process lot of impurities which are visible / invisible of toxic nature and with heterogeneous qualities which are unwanted in therapeutic use. So many Rasagrantha has suggests the process of purification of metals or minerals before administration for alchemical or therapeutic purpose. There are two types of shodhana: 1. Samanyashodhana of Kamsya. 2. Visheshashodhana of Kamsya.

2.8 Kamsya Samanya Shodhana:

There are many references of Samanyashodhana of Dhatus in different classics. These can be applied to Kamsyatoo. The procedure of Nirvapa (heating and quenching) of dhatus in Taila (sesame oil), Takra (buttermilk), Gomutra (cow urine), Aranala (sour gruel) and Kulattha Kwatha (decoction of seeds of Dolichos biflorus Linn.) seven times in each, is the commonest method of Samanya Shodhana⁽²¹⁾. Rasapaddhati followed the same procedure but altered the sequence as Takra, Kanji, Gomutra, Tila Taila and Kulattha Kwatha⁽²²⁾. In Rasatarangini the process of Nirvapa is stated to be done three times each in the following order of Kanji, Takra, Kulattha Kwatha, Gomutra and Tila Taila which is again varying⁽²³⁾.

2.9 Kamsya Vishesa Shodhana:

Even after Samanya Shodhana, it is necessary to subject Dhatus for Vishesa Shodhana to reduce the toxicity and also enhance its potency. Different methods of Vishesa Shodhana with specific media have been described in classics for Kamsya. Methods of Vishesa Shodhana of Kamsya from

various references are stated as follows in table 3^{(24), (25), (26), (27), (28), (29)}.

Table 3: Different methods of Visheshashodhana of Kamsya.

Reference	Procedure
Rasaratnasammuchaya/ Rasajalanidhi/ Rasatarangini/ Rasendrachudamani	Kantakvedakapatra of Kamsya are heated in intense fire till it becomes red hot and quenched in Gomutra.
Rasajalanidhi/Rasatarangini	Kantavedakapatra of Kamsya boiled for 3 hrs in Gomutra and Saindhava for 3 hrs by a strong heat. Kamsya is purified by heating and immersing it into Nirgundiswarasa for seven times.
Rasa chandamshu	Nirvapa - Kantavedakapatra of Kamsya strongly heated till it become red hot and quenched in Nimbuka Swarasa.
Ayurved Prakash	SnuhiKsheera, ArkaK sheera and Saindhava paste should be applied to Kamsya Patra, and heated till it become red hot and then quenched into Nirgundi Swarasa for 3 times.

2.10 Kamsya Marana:

After the Shodhana process, Kamsya has to be subjected to the process of Marana, to make it

suitable for internal use. The following are the various references of Kamsya Marana in table 4^{(30), (31), (32)}.

**Table 4:
Different methods of preparation of Kamsyabhasma**

Reference	Procedure
Rasatarangini	Kantakavedipatra of Shodhita Kamsya, it should be triturated with Shuddha Gandhaka and Arkakshira and chakra should be prepared & kept in sunlight for drying. This is then placed in sharavasamputa and ready for Gaja puta. The same process should be repeated for 3 times by adding shuddha Gandhaka to it. Kamsyabhasma is prepared by this procedure.
Rasatarangini	Churna of Shuddha Kamsya and Shuddha Hingula taken in equal and triturated with Nimbu Swarasa in khalvayantra, then chakra should be prepared and dried in sunlight and then it should be placed in sharavasamputa and Gajaputa is given. This procedure should be done for another 2 times, then Kamsyabhasma is obtained.
Rasatarangini	Kantakavedipatra of Shodhita Kamsya mixed with Shuddha Manshila and Shuddha Gandhaka Triturated with Kumari Swarasa, chakra should be prepared & kept in sunlight for drying. This is then placed in sharavasamputa and Gaja puta is given, then Kamsyabhasma is obtained.
Rasaratnasammuc	The Kalka should be prepared of Kshara Traya (Svarjika Kshara, Yava Kshara,

haya	and Tankana Kshara) and Panchalavana in the Amlavargadrava dravya for 7 times and is smeared over the patra of Kamsya, This is then placed in sharavasamputa and Gaja puta is given, then Kamsyabhasma is obtained.
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2.11 Pharmac Therapeutics of Kamsya Bhasma

Kamsyabhasma has Kashaya and tikta rasa. Its virya is ushna and vipaka is katu. It possesses gunas like lekhanakara, rksha, sara, vishada. It is tridoshaghna and vatahara. It does netrya and rasayana karma. It has udara, krimi and kushtarogagnata. Soul administration of Kamsyabhasma has not been explained in Rasa classics. It has been chosen as important ingredients in many of the preparation because of its Lekhana and Rasayana properties⁽³³⁾.

2.12 Dose of Kamsya Bhasma:

½ Ratti to 1 Ratti (60 to 125 mg)⁽³⁴⁾

2.13 Anupana:

Honey and related Rogaharadravyaswarasa⁽³⁵⁾.

2.14 Formulations Containing Kamsya Bhasma:

Kamsyapishti rasa, Kshayakesari rasa, Gulnavajranivati, Chakrakra rasa, Chintamani rasa, Nityananda rasa, Pittalarasyana, Purnachandra rasa, Makaradwja rasa, Muktheadhya rasa, Meghnad rasa, Rasanjanadivarti, Laxmivilas rasa, Vatavidhwansa rasa, Shambhukanjana rasa, Shadanarasa⁽³⁶⁾.

3. Discussion and Conclusion :

The 'Dhatu' Bhasma has been indicated in holding life, maintaining body functions, as Rasayana, keeping away ageing process and at the same time has also been explained in Granthi and Arbuda Vikaras. Several studies reveal that these Dhatubhasma are found to be present in Nano particle size which can even interfere at the level of genetic codes and correct the sequential disturbances. The disturbance caused by mutation at particular DNA structure leading to synthesis newer protein and amino acid resulting in

disturbance in that particular target tissue. With the use of Dhatubhasma such complexes may be corrected and help revert the pathology. Kamsya is classified under Mishra dhatuvarga with a combination of Tamra and Vanga in 4:1 Ratio. TamraDhatu alone is considered to be best Rasayana and at the same time Lekhana and Vanga is claimed to be Rasayana, Balya and at the same time Rooksha in nature. Many preparations of Kamsya viz., Nityananda Rasa etc, are advocated in Kapha and Medapradhanarogas. Ancient Indians were having tremendous knowledge on Kamsya/Bronze metal. In Charak samhita kaala, Kamsya was used for making utensils, bells & statues. Various usages of Kamsya have been mentioned in Sushruta samhita also. Both in Charaka samhita and Sushruta Samhita, has mentioned different usages of Kamsya, in making of bastineta, plates for food etc. Thus, it is evident that Kamsya was being used for both daily needs & in medical field. After 8th century use of Kamsya as medicine is mentioned in Rasaarnava. From those days, till now uses of Kamsya Bhasma in different formulations, for different kinds of diseases are well known in Rasashastra. Kamsya bhasma has been explained in therapeutics in parlance with Tamrabhasma. Kamsya being the alloy of Tamra in large quantity compared to Vanga and hence, the property of Tamra might play major role in the therapeutics of Kamsya Bhasma.

After the emergence of Rasashastra, Tamrabhasma occupied a significant place in ayurvedic clinical practice. Kamsya which is an alloy of copper with tin might possess its own set of physical, chemical, and biological properties. It means that there is a possibility that its Prabhavamay be different than that of the original metals. Therefore, it is worth exploring by further study.

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