ABSTRACT

Rasashastra is a pharmaceutical branch of Indian system of medicine which mainly deals with the metals, minerals, animal origin product, toxic herbs and their use in therapeutics. These Rasadravyas have been classified into Maharasa, Uparasa, Sadhaaran Rasa are also included. Malla is second mineral drug of Sadharana rasa group. Malla is also known as GauriPashana. It is identified as White Arsenic or Vitreous in English. Chemically it is Arsenic trioxide. It is more toxic when compared to other two arsenic compounds of Rasashastra. These materials are used for internal administration only after their preliminary pharmaceutical procedures, known as Shodhana (purification), Marana (incineration) and Sattvapatana (extraction of essence). Here in this article, tried to compile historical review, occurrence, types, Shodhana, Marana, Sattvapatana, artificial preparation, dose, Pathya, Apathya of Malla from many Rasa grantas.

Keywords: Rasashastra, Sadharana rasa, Malla, Gauripashana, Arsenic trioxide

INTRODUCTION

Malla is one of essential Sadharana Rasas which is placed second in the list. Most of Rasagranthas considered it under Sadharana Rasa. Malla as a drug molecule was found in Samhittha kala itself. It was considered under Dhatuvisha by Acharya Sushrutha as Phenashma along with Haratala and both of them are considered as Dhatuvisha².


Historical Review

Vedic Period (1500 B.C-800 A.D) -The Rigveda is the oldest composition and the sacred religious text of the Aryans. The Rigveda is regarded as genuine document of the period when the Aryans first established their settlement in India i.e. 15th to 20th century B.C does not mention about Malla, other texts like Atharvaveda, Yajurveda, Samaveda are also devoid of Malla and its compounds.

Samhita Period

Charaka Samhita:-The unique text of Atreyaparampara on Ayurveda does not mentioned about Malla. But the references regarding other Arsenic compounds are found in many places.

Sushruta Samhita:-The oldest authentic text book for surgery also gives much emphasis on toxicity. He gave separate section (shana) for poisonous substanc-es with their classification, toxicological symptoms and when ingested their treatment. He quoted two dhatu visha namely ‘Haratala’ and ‘Phenashma’, where Phenashma is Malla.
AstangaSangraha:- In this Samhita not mentioned about Malla, but in Uttarasthana 40th chapter he added Raktiadivishas in dhatus inSusruta, and described same toxic effects. He added common symptoms of all Sthavaravisha like Jwara (pyrexia), Hidhma (Hiccup), Dantaharsha (sensitive tooth), Hanustambha (lock jaw), Galagraha, Phenavami (foamy vomiting), Aruchi (Anorexia), Swasa (Dyspnoea), Moorchha (Syncope) from this we can say that Phenashmabhasma as Arsenic trioxide due to its similarity in toxic symptoms with Modern literature and its appearance.

Rasashastra Period:- As per available texts of Rasashastra, Malla seems to be first quoted in Rasendrachudamani of 12th cent AD.

Rasendra Chudamani (12-13th cent AD) -Somadeva the author classified Malla under Sadharana rasa. Pitas, Vikata, Hatochornoaka are synonyms while Rasabandhakara, Snigdha, Doshagha and Rasaveeryakrit are described as properties.

Rasaratnasamuchchaya (13th cent AD) -Malla was classified under Sadharana rasa. He also gave description of synonyms, types, Shodhana, good qualities, properties; Satwapatana was mentioned as that of Haratala. Rasabandhakara is one of the properties of Malla was not observed while describing 26 types of Paradabandha.

Rasaprakasha Sudhakara (13th cent AD) -Yashodharabhotta mentioned its Swedana in Churnodaka (lime water) mentioned in various Sheetavyadhis. He further used in Raupyanirmana, sumalakshara, sumila and sambhala mentioned as synonyms.

Rasendrasarasangraha (16th cent AD) - Author Gopalakrishnabhatta only mentioned its name. Synonyms, shodhana, marana and properties were not described.

Rudrayamala Tantra (16th cent AD) -He mentioned Visha as its properties and Mallaraja as synonyms properties were quoted as binds all dhatus, Rasayana, Prameelanam, Gaganagrahak, Kaamaveeryavadhaka etc.

Rasakamadhenu (16th cent AD) -This text gave synonyms, types, Gunas, indications, Satwapatana and Shodhana procedures etc.

Ayurveda Prakasha (17th cent AD) -He mentioned two types as per colour Shweta and Pita, three types as per appearance Sphatikabh, Shankabh, Dadima-bha and classified under Sadrarana rasa,he further mentioned that it works like poison and used in Rasakarma.

Yoagaratnakara (17th cent AD) -He mentioned two types Shweta and Rakta he further explains its occurrence as Shweta is artificial where as Rakta is Parvatasambhava and both are poisons and used for Rasakarma. His description also contains Shodhana its uses in brief but devoid of Bhismikarana and Satwapatana. Ullipashana a famous drug in Andhra vaidya was seems to be first appeared in these texts as per Yogaratnakara it is synonyms of Malla.

Ananda Kanda (18th cent AD) -In this text Gauripashana and Akhupashana are mentioned as separate drugs but as per later texts these terms are synonyms of Malla. He described Mooshkapashana as a synonym of Akhupashana having the properties of Ruksha, Sara, Lauhasankarakaraka, Medodurmamsakrutana and useful in silver making. Pita and Vyaktadeha are the synonyms of Gauripashana and having properties of Rasabandhakara, Snigdha, Doshagha and Rasaveeryakrit. In the time of Anandakanda these two substances may be used for separate purpose like Lauhaveda and Dehaveda respectively. It is classified under Uparasadishodhana and Marana.

Basavaraajeyam (18th cent AD) -Author mentioned many types of Pashanas he described purification method for Gauripashana and Ullipashana. Rasachandamshu (19th cent AD) -He mentioned three types Sphatikabh, Shankabha, Haridrabha there Shodhana by five different procedures, three methods for Marana and two methods for Satwapatana and extensively used in Vataraogas.

Rasendrabhaskara- The author gave its occurrence from the stone when the scorpion sting to stone it was found. It is mentioned as poison and having many types like Peeta, Lohita and Sita. He described one
Bhasma procedure and Bhasma in dose of Sarshapa is used for Poshana purpose.

Rasatarangini (20th cent AD) - Sadananda Sharma the author mentions two types Shweta and Rakta and are artificial and natural varieties respectively. He describes four types of Shodhana procedure and one Marana procedure but opines that it has same Gunas as that of Shodhitamalla. Advocated its use internally and externally.

Siddabheshaja Manimala- Krishnaramabhatta the author mentioned extensive use in Jwara and Vataroga. The Kupipakkalpaka “Mallasindoora” is first time appeared in VatarogadhiKarana, Parpatika rasa prepared with Rala and Somala, Himamurchhana rasa, Malladivati etc. Kalpa having Malla as main ingredient was appeared frequently. Mallaprayoga through methi was innovative Kalpana also appeared. [Add Malla in soil and methi procedure from that soil: serve to a person suffering with Jwara]11.

Nirukti12 - “Mallatidharatibalamit” The one which does Baladharana, is strong, robust, to hold, Possess, Excellent.

Synonyms-
R.S - Haathachoornaka, Malla, Sankhiya, Shankhavisha, Somala, Sumbalakara, Vikata.13
RT – Aakhupashana, Darumucha, Darumoosha, Gauripashana, Mallaka, Pita, Penashma, Penashmabhasma, Sambala, Shankhambusa, Shankhavisha, Somala.

Occurrence14: - It occurs both in natural and in artificial form. To obtain this in a bulk quantity Arsenical pyrite is used, it is also available as a component of Haratala and Manashila, naturally it occurs very less in quantity.

Availability14: - In the mineral form it is available in China, Europe etc. In India Hazaaribagh (Zharkhand), Chitral mountain of Kashmir and nearby areas obtained with ores of Makshika etc. The artificial forms are from chimneys of industries and the places where Arsenopyrites are burnt.

Physical Properties14:- When heated, Malla becomes soft and emits the odor like garlic. One crystalline variety of Malla is soluble in water, in very small quantity. The crystals of Arsenic oxide are Octahedral or Monoclinic, of which the latter is unstable. When heated with intense heat, it evaporates in the atmosphere, directly (sublimation) giving out garlic odor.

Types of Malla


Based on occurrence - Natural/Khanija/Parватасамбхава and artificial (Krutrima). All the Shweta varieties are Krutrima. Rakta and Peeta are Parватасамбхава. According to Rasakamadhenu Two varieties are mentioned Sphatikabha and Dadimabha.

Grahy Malla: SphatikabhaMalla is of best variety, ShankhabhaMalla is of better variety. HaridrabhaMalla is of good quality

Need for Mallashodhana: As Malla is considered as Visha15, Aakhupashana, Shankhavisha, Dhatuvisha, and now a days it is prepared and available in artificial form it should be subjected for Shodhana prior to its internal use as medicine.

Toxic Symptoms - Sushruta- Moorcha (Syncope) Galagrahra, Phenavami (frothy vomiting), Aruchi (Anorexia), Swasa (Dypsnoea).

Vagbhata- Jwara (pyrexia), Hidhma (Hiccup), Dantaharsha (sensitive tooth), Hanustambha (lock jaw),

<table>
<thead>
<tr>
<th>SL NO</th>
<th>REF</th>
<th>Procedure</th>
<th>Drugs Used</th>
<th>Method</th>
<th>Duration</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>R.A16</td>
<td>Swedana</td>
<td>Karavellaswarasa/ajadugdha</td>
<td>Dolayantra</td>
<td>2 Yama</td>
</tr>
<tr>
<td>2.</td>
<td>R.J.N17</td>
<td>Swedana</td>
<td>Karavellaswarasa</td>
<td>Dolayantra</td>
<td>1 Yama</td>
</tr>
<tr>
<td>3.</td>
<td>R.M18</td>
<td>Swedana</td>
<td>Godugdha</td>
<td>Dolayantra</td>
<td>1 Yama</td>
</tr>
<tr>
<td>4.</td>
<td>S.Y.S19</td>
<td>Swedana</td>
<td>Goksheera</td>
<td>Dolayantra</td>
<td>1 Yama</td>
</tr>
</tbody>
</table>
Malla Marana:
1. Tankana 2 Tula, Somala 1 Tula mix well in Khalwa yantra, keep it in Sharava, give Puta by 1 Prasthavanopala, after Puta store in Kachapatra29.
2. Take a wide mouthed vessel and keep 2 PalaSuryakshara in it. Above that place 2 Palas of Hastidantachurna in such a way that it should look like a heap (i.e. wide at base and sharp at the tip). Keep this vessel on oven and heat it. When both the drugs get mixed up and there is no smoke, fire is extinguished. Take out the mixture, mix it well and preserve it. Take 2 Tolas of this in a Moosha and place 1 Tola ShuddhaMalla Khandavita on it. Again, it is covered by 2 Tolas of above mixture. Mukhabandhana is done by using a Sharava and heat is given in a Lavaka Puta. By this white MallaBhasma is procured30.
3. Take white ash of Kantharikashta. Take one mud pot. Fill half of it with ashes of Kantharikashta. Keep 1 Karsha ShuddhaMalla above that. Remaining Kantharikashta ashes are then put over it. Keep that pot on oven and Badarakaashtagni is given for 2 Yamas. After self-cooling collect the Malla Bhasma31.
4. Take ShuddhaMalla in a mud pot. Put 5 Karshas of Ajadugdha above that. It is covered by a cloth. Place this in a pit and cover it by 1 Angula mud. Ignite 10 Vanopalas of Agni. Like this the procedure is repeated for 21 times. For each Puta, add 5 Tola Ajadugdha. By this we will get Peeta-Arunacoloured MallaBhasma32.

Malla Satvapatana33:
Take equal parts of ShuddhaMalla and Saurashtri-churna. Both are kept in a mud pot. Add 20 Tolas Rambhataya to it. Place one more mud pot on it and do Sandhibandhana. Keep it on oven and heat it for one Prahara. After self-cooling collect the material deposited on the upper pot. It is indicated in Shwasa, Kasa, and Jwara. It can be given along with Ghrita and Sita, Sheetajala, Dadhi, Dadhyanna. Mallasatwa is prepared as that of Haratalasatwa. Mallasatwa is Shubhra varnatmaka. Essence of Malla is similar to that of Haratala. The essence is pure White, soothing and destroyer of the three doshas. It is used in the solidification of Mercury and increases the potency of the same.


Artificial preparation of Malla34:
Haratala rubbed with Castor oil (ErandaTaila) and Lime juice (Nimbu rasa) and heated by means of a Valuka Yantra, exhibits Red Gauripashana as its essence.

Matra:
Rasatarangini- 1/120th –1/30th of Ratti. - 1/10th – 1/3rd Sarshapa
Rasatanrasaras&RasaprakashaSudhakara-1 Ratti
Rasamrita-1/100-1/50 Gunja
Rasamitra-½ Gunja

Matra Nirmana Vidhi35:-Take 1gunja of ShuddhaMalla and 15 Masha of MarichaChurna in a Khalwa and triturate with required quantity of Aard-
raka Swarasa for 3 days. Prepare 1 Rattipramana Vatatis. 1 vati in the morning and one in the night is given for Doshashamana. In this quantity itself it is added to other formulations and is used.

**Care during Matranirmana:** Ratti Malla causes death. So according to Desha, Kala, Rogibala, Dosha etc. Matra is decided and given.

**Fatal dose:** Rasamrita & Rasatarangini-1 Ratti (125mg)

**Pathya**—Milk, Sugar, Butter, grams and other nutritious substances should be taken in large quantities.

**Apathya:** Avoid Amla, Katu and Tikshnapadartha. Salt, chillies, oil, asfoetida and other hot and spicy things should be avoided. According to Rasamrita Amla and KatuPadarthas are avoided

**DISCUSSION**

Malla is classified under Sadharana rasa which has been accepted by many Rasagrantas. Malla was not mentioned in the Vedic period. In Samhita period Acharya Charaka has not mentioned about Malla but other arsenic drugs were seen. Acharya Sushrutha has categorised Malla under Dathu Visha with the name Penashma. Acharya Vagbhata has not mentioned Malla. Coming to Rasagrantas it was first explained in Rasendra Chudamani book where he classified Malla under Sadarana Rasa and mentioned its synonyms, properties which include Rasaveeryakrit. Rasaratnasamuchaya has classified in Sadarana Rasa and mentioned its synonyms, properties, types and Satvapatana was mentioned as that of Haratala. Rasabhandhakara is one of the properties of Malla was not observed while describing 26 types of Paradabandha. Yogaratinakara has mentioned two types, occurrence as Shweta is artificial where as Rakta is Parvatasambhava. Anandakhanda has classified under Uparasa. Shankhhabha variety is the best which is as white as Shankha. Now a days it is prepared and available in artificial form it should be subjected for Shodhana prior to its internal use as medicine. Shodhana is done by Dolayantra with Swedana or Pachana procedures mentioned by different authors in the above table using Karavellaka Swarasa, Godugdha, Kanji, Tankanajala. The properties of Shudha Malla and Haratala Bhasma are almost similar.

Malla being very toxic and fatal, dose is mentioned in Rasatarangini as 1/120th to 1/130th Ratti, since this dose is difficult to measure for administration, he gave another reference 1/10th to 1/3rd of a Sarshapa. Matra Nirmana Vidhi is mentioned Rasatarangini and even precautions for dose making also been mentioned. Since 1 Ratti administration at once is fatal, addition of another drug to increase the bulk of the medicine is necessary. However, the dosage of Malla is cautiously contemplated by considering the Roga, Bala, Desha, Kala etc. Therapeutical uses are Amavata, Atisara, Hridourbalya, Jirnapandu, Kapharoga, Kushita, Phiranga, Rajayakshma, Sandhigatavata, Sheetaajwara, Shlipada, Sotha, Vataroga, Vishamajwara, Vrshchikadamsa.

**CONCLUSION**

Malla is grouped under the Sadharana rasa which is chemically known as Arsenic trioxide. It is found in the form of native and artificial form. Dalhana the commentator of Sushrutha Samhita did not comment on the Penashma, including P.C Ray many scholars opine that it is Arsenic trioxide or white arsenic. Malla seems to be first quoted in Rasendrachudamani of 12th cent AD. After this period Malla was mentioned in brief or detail in the books. SpathikabhaMalla is considered as the best variety. Malla being toxic Shodhana is mandatory, mainly Dolayantra and Pachana method with Karavellaka Swarasa and Godugda is used majorly. He describes four types of Shodhana procedure and one Marana procedure but opines that it has same Guna as that of ShodhitaMalla. Very few Rasa grantas explained the Marana and Satvapatana for Malla. Therapeutic uses of Malla in Sandhigatavata, Phirangaroga, all types of Kushita, Agnimandhva, Vishamajwara, beneficial in severe Swasaroga, Atisara, Amavata, as external application it acts as Kshara. Malla being toxic and fatal the dose of it is mentioned separately which is not seen for other minerals.
REFERENCES


22. Ibid. Vishavarga, 166th pp.


26. Ibid. 11th chapter, 133rd-134th verses, 266th pp.


28. Ibid. 11th chapter, 137th verses, 266th pp.

31. Ibid. 287th - 288th Verses, 70th pp.
32. Ibid. 289th - 291st Verses, 70th pp.

Source of Support: Nil
Conflict of Interest: None Declared

How to cite this URL: Sindhuri K et al: Critical Review On Malla As Per Classics. International Ayurvedic Medical Journal {online} 2020 {cited April, 2020} Available from: http://www.iamj.in/posts/images/upload/3319_3325.pdf