



## A REVIEW ON THERAPEUTIC FORMULATIONS OF ARSENIC COMPOUNDS (METALLIC POISON) IN RASENDRA SAARA SANGRAHA W.S.R. HARATALA & MANHASHILA

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## ABSTRACT

*Haratala* and *Manahshila* are important arsenic compounds which are used in *Ayurveda*. *Haratala* (Arsenic trisulphide) and *Manahshila* (Arsenic disulphide) comprise arsenic. With strong conviction, the seers in different disease symptoms widely practised them for a variety of therapeutic and non-therapeutic objectives. *The Ayurvedic* classical book *Rasendrasaara sangraha* contains several references to arsenic in treating diseases such as *Jwara*, *Atisara*, *Grahani roga*, *Krimiroga*, *Hikka* (hiccup), *Kasa-Shwasa* (Respiratory distress), *Prameha* (Diabetes), *Kushta* (skin disease), *Vata-vyadhi* etc. The current review has attempted a compilation of all the references to arsenic (*Haratala* and *Manahshila*) mentioned in *Rasendrasaara sangraha*.

**Keywords:** Metal poison, *Haratala*, *Manahshila*.

## INTRODUCTION

India has a rich history of using traditional medicine. Rich *Ayurveda*, which dates back to around 5000 years BC, is one of the extensively used traditional medicinal systems in the Indian subcontinent. It includes using medications made from natural resources, such as metals and minerals, to treat, prevent or manage various illnesses. There are no apparent negative effects from the effective usage of these formulations (1). Minerals and metals are also valuable by seers, who have recorded this information in their corresponding classics. Being used for over a long period, these medicines are considered safe, which is the ultimate proof of their non-toxic beneficial effects. However, there are a lot of controversies over the safety concerns associated with heavy metals found in *Ayurvedic* medications. There are not many noted reports of toxicity found from using *Ayurvedic* medications (2).

Noncompliance with the treatment process code of conduct may result in the manifestation of toxicity. Seers knew the harmful consequences of its way. They successfully included some safety measures & limitations when producing and utilising minerals and metals. Great care has been imposed while using all such metallic preparations in therapeutics to the group of minerals known as arsenic, which humans have used since antiquity. These minerals include *Haratala* (Arsenic trisulphide) and *Manahshila* (Arsenic disulphide). All of which have been related to a variety of medical uses. Though the therapeutic utility of arsenic was increased with the advent of *Rasashastra*, references pertaining to arsenic can be traced back to significant treatises, too. But this information is scattered in the classics (3). Through one

of metals and minerals, considering the arsenic compounds, references of arsenic available in *Rasendra saara sangraha* are compiled and grouped into categories to provide emphasis on therapeutic and non-therapeutic usage.

The categories are as follows under

- Utilizing therapeutics
  - Internal administration
  - External application
- Other purposes

### Material and Methods

The data related to *Haratala* and *Manahshila* from *Rasendra saara sangraha Ayurvedic* literature.

### Result and observations

*Haratala* and *Manahshila* are the two elements that contain arsenic as an element in their composition mentioned in *Rasendra saara sangraha*.

### Hartal

*Haratala*, a chemically arsenic trisulphide ( $As_2S_3$ ), also called yellow orpiment, is an *Ayurvedic* compound, i.e. taken as an ingredient in many *Ayurvedic* formulations (4). It has been advocated internally and externally since the period of *Rasendra saara sangraha*. It is used in formulations for internal administration to treat diseases like *Jwara*, *Atisara*, *Kasa*, *Shwasa*, *Hikka*, *Kushtha*, etc. The therapeutic dose mentioned for *Haratala bhasma* is 30-60 mg. The formulations mentioned in *Rasendra saara sangraha*, which hold *Haratala* as one of the components, are depicted in Tables 1 and 2 (5).

**Table 1 Therapeutic utilization of *Haratala* in *Rasendra saara Sangraha***

Sr. No.	References	Formulations	Therapeutic uses
<b>Utilization in Therapeutics: Internal administration</b>			
1	<i>R.S.S. 2/7 (Jwara chi.)</i>	<i>Gadmurari ichhabhedaka Rasa</i>	<i>Sannipata Jwara</i>
2	<i>R.S.S. 2/37 (Jwara chi.)</i>	<i>Navajwarabhangkush Rasa</i>	<i>Nav jwara</i>
3	<i>R.S.S. 2/68 (Jwara chi.)</i>	<i>Vata pittantaka Rasa</i>	<i>Daha, vata pitta jwara, Shotha</i>

			<i>Bhrama</i>
4	<i>R.S.S. 2/71(Jwara chi.)</i>	<i>Vishveshwar Rasa</i>	<i>Pittajanit jwara kaphajanit Madatyara roga</i>
5	<i>R.S.S. 2/77(Jwara chi.)</i>	<i>Chintamani Rasa</i>	<i>Sannipata jwara kasa, shwas, Vishama jwara</i>
6	<i>R.S.S.2/151(Jwara chi.)</i>	<i>Rasarajendra Rasa</i>	<i>Sannipata jwara</i>
7	<i>R.S.S.2/170(Jwara chi.)</i>	<i>Vetala Rasa</i>	<i>Sannipata jwara</i>
8	<i>R.S.S.2/190(Jwara chi.)</i>	<i>Sannipatvadvanala Rasa</i>	<i>Abhinyas jwara</i>
9	<i>R.S.S.2/241(Jwara chi.)</i>	<i>Brihat sarvajwaraharaloha</i>	<i>Jwara</i>
10	<i>R.S.S. 2/262(Jwara chi.)</i>	<i>Chintamani Rasa</i>	<i>Jwara</i>
11	<i>R.S.S. 2/291(Jwara chi.)</i>	<i>Jwarankusha Rasa</i>	<i>All jwara</i>
12	<i>R.S.S. 2/296(Jwara chi.)</i>	<i>Sheetajwarahara Rasa</i>	<i>Jwara</i>
13	<i>R.S.S. 2/298(Jwara chi.)</i>	<i>Sheetmanjari Rasa</i>	<i>Sheeta jwara</i>
14	<i>R.S.S. 2/302(Jwara chi.)</i>	<i>Panchanan Rasa</i>	<i>Vishama jwara</i>
15	<i>R.S.S. 2/318(Jwara chi.)</i>	<i>Brihat Chintamani Rasa</i>	<i>All jwara</i>
16	<i>R.S.S. 2/2(Jwara chi.)</i>	<i>Purna Chandrodaya Rasa</i>	<i>Atisara, Grahani, shoola</i>
17	<i>R.S.S.2/93(Grahaniroga chi.)</i>	<i>Grahanikapata Rasa</i>	<i>Grahani, Gulma</i>
18	<i>R.S.S.2/26 (Krimiroga chi.)</i>	<i>Vidngaloha</i>	<i>Krimiroga, Arsh, Aruchi</i>
19	<i>R.S.S. 2/3 (Yakshamaroga chi.)</i>	<i>Rajamrigang Rasa</i>	<i>Vata, kapha Kshaya</i>
20	<i>R.S.S.2/17(Kasaroga chi.)</i>	<i>Lakshmilasa Rasa</i>	<i>Kasa</i>
21	<i>R.S.S.2/66(Kasaroga chi.)</i>	<i>Rasendra Gutika Rasa</i>	<i>Five Kasa ,Shwasa, Kshaya ,Raktapitta, pandu</i>
22	<i>R.S.S.2/1(Trishna roga chi.)</i>	<i>Maho dadhi Rasa</i>	<i>Trishna roga</i>
23	<i>R.S.S.2/4 (Vatavyadhi roga chi.)</i>	<i>Vatagajankusha Rasa</i>	<i>Vata vyadhi</i>
24	<i>R.S.S.2/10 (Vatavyadhi roga chi.)</i>	<i>Vrihatvatagajankusha Rasa</i>	<i>Vata vyadhi</i>
25	<i>R.S.S.2/14 (Vatavyadhi roga chi.)</i>	<i>Mahavatagajankusha Rasa</i>	<i>Vata vyadhi</i>
26	<i>R.S.S.2/15 (Vatavyadhi roga chi.)</i>	<i>Vatanashano Rasa</i>	<i>Vata vyadhi</i>
27	<i>R.S.S.2/53 (Vatavyadhi roga chi.)</i>	<i>Kubjavinodara Rasa</i>	<i>Hridya shool, parshva shoola</i>
28	<i>R.S.S.2/59 (Vatavyadhi roga chi.)</i>	<i>Vatavidhavasano Rasa</i>	<i>Vata vyadhi</i>
29	<i>R.S.S.2/75(Vatavyadhi roga chi.)</i>	<i>Talakeshwara Rasa</i>	<i>Vata vyadhi</i>
30	<i>R.S.S.2/10 (Vatarartaroga chi.)</i>	<i>Talabhasma</i>	<i>Vata rakta</i>
31	<i>R.S.S.2/16(Vataraktaroga chi.)</i>	<i>Maha taleshwara Rasa</i>	<i>Vata rakta</i>
32	<i>R.S.S. 2/4 (Gulma roga chi.)</i>	<i>Gulma Vajrini Rasa</i>	<i>Raktaja Gulma roga, kamala, pandu</i>
33	<i>R.S.S.2/7 (Gulma roga chi.)</i>	<i>Gulmakalana Rasa</i>	<i>Vata Gulma</i>
34	<i>R.S.S.2/19 (Gulma roga chi.)</i>	<i>Lanalo Rasa</i>	<i>Gulma</i>
35	<i>R.S.S.2/10 (Mutrakricchra roga chi.)</i>	<i>Mutra krichhanataka Rasa</i>	<i>Mutra-krichra</i>
36	<i>R.S.S.2/1 (Somaroga chi.)</i>	<i>Talkeshwara Rasa</i>	<i>Somaroga</i>
37	<i>R.S.S.2/5 (Sthoulya roga chi.)</i>	<i>Badwagniloha</i>	<i>Sthoulya</i>
38	<i>R.S.S.2/7 (Sthoulya roga chi.)</i>	<i>Badwagni Rasa</i>	<i>Sthovlya</i>
39	<i>R.S.S. 2/51 (Pleeha roga chi.)</i>	<i>Aparplehari Rasa</i>	<i>Pleeha roga</i>

40	R.S.S.2/1 (Shleepada roga chi.)	Nityananda Rasa	Shleepada roga
41	R.S.S.2/9 (Kushta roga chi.)	Talkeshwara Rasa	Kushta
42	R.S.S.2/51 (Kushta roga chi.)	Raj Taleshwar Rasa	Kushta
43	R.S.S.2/62 (Kushta roga chi.)	KushtaharitaleshwarRasa	Kushta
44	R.S.S.2/69 (Kushta roga chi.)	Rajrajeshwar Rasa	Kushta, mandala, kitibha
45	R.S.S.2/78 (Kushta roga chi.)	Lankeshwar Rasa	Kushta
46	R.S.S.2/81 (Kushta roga chi.)	Bhrihatbhairava Rasa	Kaphaja Kushta
47	R.S.S.2/95 (Kushta roga chi.)	Vijay bhairav Rasa	Kaphaja Kushta
48	R.S.S.2/112 (shwitra chi.)	Vijyananda Rasa	Shvitra, kushta
49	R.S.S.S.S.2/124(shwitra chi.)	Rasamanikya Rasa	Shvitra kushta
50	R.S.S. 2/1 (Pradara roga chi.)	Pradarantaka loha	Pradara roga
51	R.S.S. 2/23 (Sutikaroga chi.)	Brihatgarbhachintamani Rasa	Sutika roga
52	R.S.S. 2/42(Sutikaroga chi.)	Rasashardul	Sutika roga

**Table:- 2 Hartal (External use)**

Sr. no.	References	Formulation	Therapeutic use
1	2/89(Jwara chi.)	Jayamangala Rasa	Sannipata jwara (paan)

### Manahshila

Chemically, *Manahshila* is identified as Realgar- red orphanage ( $As_2S_2$ ). It is extensively used in formulating compounds for internal administration. Internal administration in various doses is advocated to treat diseases like Jwara, Kasa, Hikka, Shwasa, Krimiroga, Kushta roga, etc. This mineral is frequently preferred by the seer for administration through different roots of drug administration. The therapeutic dose mentioned for *Manahshila* is 4-8 mg (6). The formulations mentioned, Rasendrasaara sangraha, which hold *Manahshila* as one of the components, are summarised in Tables 3 and 4 (7).

**Table:- 3 Therapeutic utilization of Manahshila in Rasendrasaara sangraha**

Sr.No.	References	Formulations	Therapeutic uses
<b>Utilization in Therapeutics: Internal administration</b>			
1	2/42 (Jwara chi)	Godamurari Rasa	Aan jwara
2	2/174 (Jwara chi)	Chandra Shekhar Rasa	Pitta kaphaja jwara
3	2/184 (Jwara chi)	Vrihatkasturi Rasa	Dvidoshaja
4	2/224 (Jwara chi)	Jwarari Rasa	Dhatu gat jwara
5	2/24 (Arsha Roga chi.)	Sheelagandhak Vatak	Arsh
6	2/5 (Krimiroga chi.)	Krimivinsasho Rasa	Vata, Pitta, Kaphaja Krimi roga
7	2/24 (Krimiroga chi.)	Krimihara Rasa	Krimi roga
8	2/60 (Yakshma chi.)	Kanchanabha Rasa	Yakshma
9	2/102(Yakshma chi.)	Nityodaya Rasa	Yakshma
10	2/1(Kasa chi.)	Brihadsendragutika	Kasa, shwasa
11	2/172 (Kasa chi.)	Chandramnitloha	Kasa, Shwasa
12	2/17 (Hikka Shwas chi)	Shwasakutar Rasa	Kasa, Shwasa, Shiro roga

13	2/22 (Hikka Shwas chi)	Shwas-kudra Rasa	Vata, Kapha Shwas, kasa kshaya roga
14	2/6 (Pitta roga chi.)	Pittantaka Rasa	Pitta roga
15	2/20 (Prameha chi.)	Meghanado Rasa	Prameha
16	2/46 (Prameha chi.)	Mehavraja Rasa	Prameha
17	2/12 (Udara roga chi)	Mahavahani Rasa	Udara roga
18	2/43 (Pleeha roga chi)	Pleehashardula Rasa	Pleeha roga
19	2/60 (Pleeha roga chi)	Mahamrityunjaya Rasa	Pleeha roga
20	2/1 (Mukha roga chi)	Chaturmukha Rasa	Mukhagat
21	2/33 (Sutika chi.)	Maha Abhravati	Sutika roga
22	2/45 (Sutika chi.)	Maharashadrul Rasa	Sutika roga

**Table Manahshila (External use)**

Sr. no.	References	Formulation	Therapeutic use
1	2/88 (jwara chi.)	Kulwadhu Rasa	Daruna sannipata jwara (Nasya)

## DISCUSSION

Screening of classics of *Rasendrasaara sangraha* revealed that arsenicals have been used to treat many pathological manifestations for ages. *Hartal* and *Manahshila* are categorised as *sthavara (Dhatu) vi-sha*. Arsenics are used in different pharmaceutical dosage forms, i.e. *Vati*, *Churna*, etc. Formulation of arsenic is recommended for various diseases of the skin and respiratory tracts. This information in classics makes it clear that such metals have a unique role in different clinical conditions. They hold a special place in *Ayurvedic* pharmacopoeia and are essential to *Ayurvedic* treatments, so these formulations are safe to use in *Ayurvedic* medicine. According to several published research studies, these minerals are secure when made into medicine by following the traditional methods outlined in ancient writings (8). Current study findings firmly demonstrate that arsenicals are safely used in *Ayurveda* to treat various medical ailments in different dose forms. Since they have been clinically studied for years without any apparent negative effects, this historical evidence provides the strongest evidence for their safety. Therefore, it is not sufficient to conclude that *Ayurvedic* medications are harmful just because heavy metal is present in their formulations.

## CONCLUSION

*Rasendrasaara sangraha* screening demonstrates the critical therapeutic benefits of arsenic. The fine-processed powders of these purified mineral formulations play an essential role in therapeutics. These formulations are used via internal and external routes. These formulations have been used for a long time, so they are acknowledged as safe, which is the ultimate proof of their non-toxic beneficial effect. For the use of these formulations in therapeutic use, precautions should be taken to avoid any harmful effects, considering the potential toxicity of arsenic. It is necessary to plan well-designed pre-clinical and clinical studies to assess absolute safety and treatment efficacies in the relevant situations. This work is expected to alleviate the laborious efforts of researchers in collecting data and be useful for referring to the arsenic used in *Rasendrasaara Sangraha*. Finally, these highlights emphasise how frequently arsenicals have been utilised in various contexts since civilization.

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