



RASA DRAVYA: IMPORTANCE, ADVERSE IMPACT AND ITS MANAGEMENT

Priyanka Gupta^{1*}, Sindhuja V.¹ and Monika Yadav²

¹Department of Rasashastraevum Bhaishajya Kalpana, Rama Ayurvedic Medical College and Hospital, Kanpur, Uttar Pradesh.

²Department of Applied Sciences & Humanities, Faculty of Engineering and Technology, Rama University, Kanpur, Uttar Pradesh.



*Corresponding Author: Priyanka Gupta

Department of Rasashastraevum Bhaishajya Kalpana, Rama Ayurvedic Medical College and Hospital, Kanpur, Uttar Pradesh.

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ABSTRACT

Rasa Dravya, or the therapeutic metals and minerals employed in medicinal formulations, is an important concept in the ancient system of traditional medicine known as Ayurveda. The literal translation of the phrase Rasashastra is "Science of Mercury". This particular branch of Ayurveda, known as "Rasa dravya," deals mostly with metals, minerals, and gems. Taking into account the significance of this field in Ayurvedic medicine and the lack of thorough reviews available, an effort has been made in this review to offer a concise yet complete overview of the different aspects associated with it. The present study explores the various dimensions of Rasa Dravya, including its historical, traditional, and modern significance in Ayurvedic procedures. The study also discusses the possible negative effects of using Rasa Dravya, taking into account toxicity issues and the careful balancing act needed to get the best possible therapeutic outcomes. Additionally, the study explores different methods and tactics used in the control of possible side effects related to Rasa Dravya. To improve safety and efficacy, this entails the creation of standardized processing procedures, dosing guidelines, and the incorporation of contemporary scientific methodologies. In order to promote patient well-being, the study seeks to give a thorough overview of Rasa Dravya in Ayurveda, highlighting its crucial role in healthcare and highlighting the significance of responsible and evidence-based practices.

KEYWORDS: Ayurveda, Rasa dravya, Rasashastra.

1. INTRODUCTION

Since around 1500 BC, the ancient Indian system known as Ayurveda has been practiced throughout India. Its primary goal is to maintain good health and treat illness. Patient safety and benefits have been given potential prominence by this system. Ayurvedic alchemy, also known as rasa shastra, is a significant part of Ayurveda that addresses the usage of metals, minerals, and gemstones as well as their processing. The renowned Buddhist Sage Naagaarjuna is credited with helping Rasashastra develop into a specialized discipline of knowledge. who is regarded as Rasashastra's "Father." The "Ayurvedic system of medicine" saw the emergence of a new class of medications known as "Rasaushadhi" and a new branch of knowledge known as "Rasashastra" with the discovery of Mercury, a miraculous substance in those days. The term "Rashastra" refers to the scientific study of mineral and metallic substances and their potential therapeutic applications, including the preparation of drugs by processing.^[1] The tenets of "Ayurveda" state that every material in the universe has the potential to be employed as a medication, given that

it is used sparingly by the doctor when necessary. One of the most prominent Ayurvedic figures, Caraka, states in this reference that "Anenopadeshen Na Anaushadhibhootam Jagati Kincitdravyamupalabhyate." Historically, the focus of Ayurveda has been on plants and their medicinal applications. However, as time went on, practitioners began to prioritize animal products, metals, and minerals.^[2] The elements in the universe are categorized as follows: 'Jangama', meaning they originate from animals, such as milk, meat, blood, urine, etc.; 'Audbhida', meaning they originate from plants, such as leaves, roots, stems, etc.; and 'Paarthiva' or 'Khanija', meaning they originate from minerals, such as gold, silver, copper, sulphur, etc. When it comes to illness prevention, regeneration, and immunity, minerals and metals are incredibly powerful and effective. The most crucial component of the Rasa shastra is Parada, or mercury.^[3]

Pharmacovigilance must be implemented in Ayurveda in order to address a variety of issues in a way that is more sophisticated than traditional science and to make the

system more structured. Enhancing treatment outcomes and maximizing drug safety are two key goals of pharmacovigilance. "The science and activities relating to the detection, evaluation, understanding and prevention of adverse effects or any other drug-related problem" is how the World Health Organization (WHO) defines pharmacovigilance. Ayurveda has traditionally placed a strong emphasis on safe therapeutic methods that reduce symptoms without causing new ones. Throughout the Samhita, different medicine delivery methods, precautions, and restrictions have all been recommended in order to attain this goal. This suggests that the authors of Ayurvedic books were well-versed in medication safety and applied it to their own practices using set rules. Texts on Ayurveda contain a plethora of information about drug safety and adverse drug reactions. This article gathers, examines, and compiles the disparate data.

In the current study, we have focused on the main aspects of Rasa Dravya including the importance of Rasa Dravya that has already been proved as better assistance in health sector. Few points of adverse impact have been discussed in detail to demonstrate the problems associated with this as well as their remedial measures to manage the issue. Overall, this review exhibits all the aspect associated with Rasa Dravya in terms of Importance, Threats as well as Control.

2. TYPES OF RASA DRAVYA

Different classification systems are utilized for the metals and mineral ingredients found in Ayurvedic medicines. A similar concept of classification emerges from the classics, although variations in the pattern of classification and the inclusion of a certain mineral or metal in a specific class. These medications are generally divided into four groups, called Rasa, Dhaatu, Ratna, and Visha. There isn't anything common to this classification that sets it apart. Most members of the "Rasa" class exhibit the "Rasaayana" (adaptogenic effect) effect. Dhaatus are clustered together because of their ability to give the body structural strength. Gem-quality minerals are categorized as Ratna, while naturally highly toxic plants are categorized as Visha. Major types of Dravya rasa with characteristic features have been discussed below:^[4]

Maharasa: Maharasa is the category for substances that are highly helpful in Parada karma. The majority are closer to Parada. They all contain metallic materials. Maharasa yields Satwas that are helpful in Parada karma. There is disagreement among acharyas concerning the quantity and composition of maharasa.

Uparasa: Substances helpful in Parada karma and potentiation are included in the Uparasa category. When compared to the minerals in the "Maharasa" group, they are somewhat less valuable. The Uparasa class of medications is employed as an adjuvant in the treatment of Rasa and Maharascas. The majority are supportive

medications. The majority are Gandhaka and its derivatives. This group excludes all metals, the majority of which are metalloids.

Sadharana rasa: Achieving Rasasiddhi can be facilitated by sadharana rasa. Gauripashana is capable of amplifying Parada's power. Varatika is an invaluable tool in the Parada Jarana procedure. In addition to increasing parada's effectiveness, agnijara aids in Deepana and Jarana procedures. Girisindhora is regarded as the greatest at doing Paradabandhana and is helpful for both Loha and Deha siddhi. Jarana of Parada is a useful language to know. The Paradabandhana procedure is said to be optimal for Mriddharashringa.

Loha: The term Loh, which meaning extraction, is the root of the word Loha. The material that keeps bodily tissues in good condition for an extended length of time (Dharana) is the reason for the term Dhathu. Dhathus have been utilized for thousands of years as a medicinal herb. When consumed in Bhasma form, these compounds aid to eliminate ailments, aging, weakness, wrinkles, and gray hair. Lohavarga consists of the following: Naga (Lead), Pittala (Brass), Yasada (Zinc), Swarna (Gold), Rajata (Silver), Tamra (Copper), Loha (Iron), and Vartalo (kaamsya + taamra + pittala + loha + sisa).

Ratnas (Gems/ precious stones): Ratnas are particularly helpful in both Rasakarmas and Paradabandhana. Hindus believe that Ratnas can lessen the negative effects of Navagrahas. Good quality rattanas are utilized for several purposes, such as Parada karma, deity worship, rejuvenation, and donation. In addition to improving the properties of Parada, rtas are beneficial for both Bandhana and Marana. Vaikrantha, Suryakrantha, Hiraka, Mauktika, Mani, Chandrakantha, Rajavartha, Gomeda, Pushparaga, Pravala, Vaidurya, & Nilamani are among the Ratnas.

Uparatna(Semi – precious stones): Vaikranta, Suryakanta, Candrakanta, Rajavarta, Perojaka, and Sphatikamani are all classified as Uparatnas, according to Rasatarangini.

3. IMPORTANCE OF RASA DRAVYA

Rasa Dravya are characterized by three key features: immediate efficacy, relatively low dosage requirements, and broad therapeutic value regardless of constitutional variation. The following Sloka (verses typically consisting of two lines) explains the qualities of rasa mentioned above.

"Alpamaatropayogitwaat Arucera Aprasangataha. Kshipram Aarogyadaayitwat Aushadhyebhyo Adhiko Rasaha"

Doctors who treat patients with "Rasaushadhi" are referred to as "Rasa-vaidya." Rasa-vaidyas were believed

to be more adept at healing illnesses with plants and surgery than their professional colleagues.

**“Rasa Vaidyah Smrito Devo Maanusho
Moolikaadibhihi.
Adhamaha Shastrdhaabhyaamitthaam
Vaidyastridhaa Mataha”**

Ayurveda places a strong emphasis on nutrition in a comprehensive manner that goes beyond only providing for basic needs. Rasa Dravya advocates for a well-rounded and balanced diet that addresses both physical and mental elements of health by encouraging people to try different flavors at each meal. Rasa Dravya is not just about flavor; it's also about the healing qualities that some foods naturally possess. According to Ayurveda, healthy digestion is essential to overall well-being. Rasa Dravya aids in digestion by encouraging the best possible absorption of nutrients and inducing the creation of digestive enzymes. The six flavors affect mental and emotional health in addition to physical health. For instance, it is thought that while strong tastes may excite and invigorate, sweet tastes have a relaxing impact on the psyche. Seasonal variations may exist in Rasa Dravya suggestions. Eating a diet tailored to the season aids the body's ability to adjust to shifting weather conditions and preserve equilibrium. Ayurveda seeks to prevent ailments before they develop by comprehending how Rasa Dravya affects the doshas. The Ayurvedic concept of fostering health and well-being rather than only treating disorders is in line with this preventive approach.

4. ADVERSE IMPACT OF RASA DRAVYA

In Ayurveda, rasa dravya is typically regarded good when used in moderation; nonetheless, it is vital to recognize that overindulgence in specific tastes can have negative effects. According to Ayurveda, the negative effects of Rasa Dravya can include: Having too much of a certain taste without taking into account one's unique doshic imbalances can aggravate doshas. Overindulgence in some flavors, particularly rich or greasy ones, can cause indigestion, bloating, or constipation, among other digestive problems. When adding Rasa Dravya to a diet, it's crucial to take each person's digestive ability and metabolic strength into account. Weight gain may be caused by consuming sugary, fatty, and heavy foods in excess, all of which are linked to the Kapha dosha. Inadequate meal selections, such as consuming flavors that are incompatible or inadequately prepared foods, can cause the body to accumulate ama, or poisons. People who suffer from specific medical ailments would need to exercise caution when selecting Rasa Dravya. For instance, people who suffer from inflammatory illnesses or acid reflux, for example, may need to restrict their intake of spicy or pungent foods as these can aggravate their symptoms. An overindulgence in one taste at the expense of others might lead to nutritional imbalances. Every flavor has its own nutrients, and a very restrictive diet can result in vitamin and mineral deficits. Overindulgence in flavors that are stimulating, such salty

or pungent, can cause emotional and mental problems, such as increased tension or irritation. Certain foods or flavors may occasionally cause allergic reactions in people. Incorporating Rasa Dravya into the diet requires awareness of individual sensitivities and allergies.

The growing number of ADR complaints is the current concern regarding Ayurveda and alternative medicine. These reports frequently sensationalize the issue and paint a poor picture of the use of medications. These reports frequently fail to pinpoint the event's cause, which could be related to any number of variables already taken into account by Ayurveda but disregarded out of carelessness or ignorance.

According to Ayurvedic shastra, rasa dravya is safe to use in therapeutic doses as long as the necessary procedures like shodhana (purification) and marana (calcinations) are followed. The produced bhasma will have different adverse effects on our bodies depending on whether it is apakwa or asudhha. The ramifications of incorrect bhasmas and how to effectively control them are also covered in detail in the shastra. A move is taken here to list the dangers associated with such bhasmas.

The classics contain comprehensive information that shows beyond any doubt that the Ayurvedic pioneers were well aware of the toxicity or unfavorable effects that can result from using metals or minerals improperly. To prevent any negative effects, they have documented precise processing methods, medicinal dosages, and concomitant dietary advice. Nevertheless, therapeutic protocols have also been established in case difficulties arising from incorrect administration, processing, or non-adherence to the code of conduct are identified. This suggests that the seers had a solid understanding of metallic preparations' pharmacokinetics and pharmacodynamics.

Under such conditions, claims such as "Ayurvedic drugs are toxic because they contain heavy metals" are nothing more than misinformation about an antiquated science. The toxicity of metallic preparations is unrelated to the mere presence of metallic components. Numerous modifications to the metals' structure and ultimate shape are guaranteed by the various manufacturing processes they undergo (such as Shodhana and Marana, among others). Following these methods and treatment with different organic and inorganic components, a specific therapeutic activity is anticipated from the dosage form. Therefore, someone who is not familiar with these traditional methods can simply express worries about safety.

5. MANAGEMENT METHODS

It is clear from everything covered in the earlier parts that the Ayurvedic pioneers were aware of both the extraordinary medicinal properties of metals and minerals as well as their possible toxicity. They implemented safety measures to make sure their use in

therapies wouldn't have any negative impacts. For every material, complex processing methods were investigated and tested in an effort to minimize hazards and optimize advantages. The safe doses were defined. Dietary guidelines and appropriate Anupana (adjuvant) were advised. Nevertheless, special antidotes and therapies

were recommended in case there was any unfavorable consequence as a result of disregarding the code of safety.

Table 1: Table of Rasa Dravya Hazards and Their Management.

S. No.	RASA DRAVYA	HAZARDS	MANAGEMENT
1	Asuddha Abhrakabhasma	Kustha, kshaya, pandu, sotha, hrut-parshwashula, agnimandhya and guru for digestion. ^[5]	Rub Atasi beeja in jala and administer orally for 3 days. ^[6]
2	Apakwa Abhrakabhasma	Visa, shastra, Agni, agnimandhya, prameha, chidrodara. ^[7]	
3	Vaikranta	Kilasa, kustha, daha, parsvapida, pandu ^[8]	Kulatthakwatha/kadalikandaswarasa/nim buswarasa 48g for 7 days
4	Makshik	Mandagni, twachavikara, netravikara, halimaka, kothagatavayuvikara, vistambha, gandamala, Vrana ^[9]	Kulatthakwath/ Dadim twaksevan ^[10]
5	Vimala	-	Sharkaramishritmeshashringichurna for 3 days ^[11]
6	Adrija (shilajatu)	Daha, Murcha, Bhram, raktapitta, kshaya, agnimandya, malavastambha ^[12]	Maricha churna + ghrita for 7 days ^[13]
7	Sasyaka (tuttha)	Chardi, Bhranti ^[14]	Jambeernimbu rasa, lajamanda ^[15]
8	Rasaka (Kharpara)	Chardi, Bhranti ^[16]	Gomutrasevan for 7 days ^[17]
9	Gandhaka	Kustha, tapa, bhrama, pitta ruja, Veerya – balahani ^[18]	Warm milk with ghrita ^[19]
10	Haratala	Dahha, toda, chobha, sharirkampa, raktadusti, sharirvikriti, vata kapha prakopatmakvyadhi ^[20]	Chini, jeerakachurna, madhu, kushmandaswarasa for 3 days ^[21]
11	Manahshila	Ashmari, mandagni, mutrakricchra, malabaddhata ^[22]	Milk with honey ^[23]
12	Kankusta	Ativirechana ^[24]	Baboola moola kwath with equal amount of jeeraka and tankan churna ^[25]
13	Gauri Pashana	Hridvikara, pandu, kamla, shotha, trishna, kasa, swasa. ^[26]	Milk+ghee+sugar, tankanajala, karvellakaswarasa ^[27]
14	Hingula	Moha, prameha, klam, chittavibhram, andhata, chidataet ^[28]	Ghee+Milk+Shodithagandhaka with sufficient quantity of Nagawalliswarasa for 2-4 days
15	Swarna	Bala-viryanaasha, rogotpattikastadayakjeevan, kinchitmrityu ^[29]	Haritaki+ sita for 3 days. ^[30]
16	Rajat	Ayu, shukra, balanasha, santap, malavarodha ^[31]	Sharkara and madhu for 3 days. ^[32]
17	Tamra	Twachavikara, bhram, vaman, arati, santap, shukrasrav, murcha ^[33]	Munivrihi with mishri, dhanyakswaras/kwath with mishri for 3 days ^[34]
18	Loha	Ayu, bala, kantanasha, hatpida, sharirshaithilya, Vatavyadhi, apasmar, gulma, shotha, kustha, udaroga, madhumeha, rajyakshama etc. ^[35]	Agasti patraswarasbhavitvidangasevan ^[36]
19	Naga	Prameha, kamla, kshaya, switra, twakroga, sandhi vedana, aanah, pakshaghat, bhagandar, gulma, shodha, agnimandya, udarshula ^[37]	Swarna bhasma+Haritaki+sharkara for 3 days. ^[38]
20	Vanga	Loss of sharirkanti, kustha, kilasa, gulma, prameha, kshaya, pandu, slesmajajwar, bhagandara, shotha, shukrasmar, raktajavikaraet ^[39]	Mesashringichurna + mishri for 3 days ^[40]
21	Yasada	Gulma, prameha, kustha ^[41]	Bala + haritakichurna + mishri ^[42]
22	Pittala	Bhrama, arsha, prameha, bhagandar, jwar, mrityudayak, gudaruk, taapa. ^[43]	Dhanyaka+sitapana for 3 days. ^[44]
23	Mauktika	Daridrayakara, putranashak, mrutyukarak, kastakara, akirtikara, saubhagyanashaka, saubhagyakshaya kara, pragyavidhvansakara, sarvasampattinasak, nirudyogakara.	
24	Vajra	Kustha, parsvavedana, jwar, bhram, murcha, pandu ^[45]	

6. CONCLUSIONS

In conclusion, the clear descriptions found in the classic demonstrate that the sensible application of Rasa Dravya was well established before the time of Charaka Samhita (more than 5000 BC). Most of the world's nations were only beginning to awaken during this time. It is true and powerful to state that, when considering the magnificent past, evidence from classical literature, contemporary practices, and preclinical studies, metals preparations are a boon to the suffering population, and that any concerns expressed are only a part of a larger plot. In light of all these issues, it is imperative that highly developed networks be established amongst Ayurvedic doctors, biotechnology experts, and advanced labs. Every opportunity for training that comes up for members of the scientific community might emphasize the concepts and effects of various classical procedures; this would raise awareness of the conventional pharmaceutical methods.

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