

IMPORTANCE OF RASA CHIKITSA IN AYURVEDA THERAPEUTICS

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ABSTRACT

Rasa Chikitsa is a branch of Ayurvedic therapy that involves treating diseases using specially prepared herbo-mineral and metallic formulations. It involves the therapeutic application of drugs from metal and mineral origin, animal products, and poisonous plant drugs in Ayurveda. The misconception regarding the application of *Rasaushadhi* that patient examination is not required before the therapeutic application of these drugs. The therapeutic benefits of *Rasaushadhi* are unique and need expertise for application. The objective of this article is to interpret the principles of therapeutic application of *Rasaushadhi* and to discuss on the principles for overcoming the misconceptions regarding their therapeutic application. There are specific principles and rules for the application of these drugs. For example, *Rasaushadhi* is prescribed in very small doses. These principles include proper examination of the patients, types and course of the disease, preparation of *Rasaushadhi*, and dose, duration, and selection of *Anupana* with *Rasaushadhi* during application. Many references are available about the examination of *Prakriti*, *Dosha*, and others for the therapeutic application of *Rasaushadhi*. Proper examination of patients and diseases is essential in the therapeutic application of metal- and mineral-based medicines (*Rasaushadhi*).

KEYWORDS: *Dosha*, *Anupana*, *Rasashastra*, *Rasaushadhi*.

INTRODUCTION

In the context of *Rasa chikitsa*, the word “*Rasa*” denotes the medicines used in the therapeutic application of *Rasa shastra*. It is a branch of Ayurveda dealing with the preparation and therapeutic application of mercurial, metallic, mineral, poisonous plant formulations, and some animal products.^[1] The raw material is processed through various pharmaceutical processing such as *Shodhana*, *Bhavana*, *Marana*, and others. The processed metals and minerals are applied in therapeutics in various forms such as *Bhasma/Sindura* (~incinerated/ sublimed), etc., forms. These formulations are commonly not used alone but rather are used in combination with specified plant drugs effective in that particular system of the body (*Dosha* or *Dhatu* or *Srotas*) and with specific *Anupana*. These medicines are called *Rasaushadhi* in the parlance of *Rasa shastra*.

The importance of the subject *Rasashastra* is mentioned in terms of the therapeutic benefits, not for pharmaceutical utilities. Those are *Alpa matra*, *Aruchi*, and *Kshipra arogya dayi*.^[2] *Rasaushadhi* are having *Deepana* and *Pachana* properties.^[3] To indicate the importance of *Rasa chikitsa*, it is mentioned in the texts of *Rasa shastra* that for the treatment of curable diseases, *Bheshaja chikitsa* is considered best, whereas for the treatment of incurable diseases, *Rasa chikitsa* is considered better therapeutic options.^[4]

A perception is prevailing from times that following the principles of therapeutics during the application of *Rasaushadhi* is not needed. Here, the principles of therapeutics indicate the examination of *Dosha*, information of place and season, examination of disease, examination of patients, and others.^[5] Some scholars opine that the examination of these factors is required in the management of *Asadhya vyadhi* (~incurable diseases); whereas, others opine that patient examination is not essential for the therapeutic application of *Rasaushadhi*. However, the existing principles for the application of *Rasaushadhi* indicate that patient examination is essential for *Rasa chikitsa*.

In this review article, an attempt has been made to compile the principles regarding the therapeutic application of *Rasaushadhi* mentioned in different texts of *Rasashastra*. Emphasis has been given on the rational application of these principles for obtaining the claimed benefits of these formulations by following the Ayurvedic therapeutic principles, i.e. *Dosha*, *Dushya*, *Rogi pariksha*, and *Roga pariksha*, and to overcome the misconception

regarding therapeutic application of *Rasaushadhi*.^[6]

Sources of *Rasaushadhi*

The *Rasaushadhi* is obtained from metals, minerals, nonmetals, precious stones, animal parts, and some poisonous plants. The most used metals are mercury, gold, silver, copper, iron, tin, lead, zinc, and others. Many minerals are used as medicine after proper processing such as mica, chalcopyrite, iron pyrite, peacock ore, smithsonite, hematite, cinnabar, litharge, and others. Some nonmetals such as sulfur, orpiment, realger, and others are used. Gemstones (such as ruby, emerald, topaz, diamond, sapphire, zircon, cat's eye, and others), different animal parts (as shell of molluscs, deer horn, cattle fish bone, pearl, coral, eggshell, and others), some poisonous plant drugs (like aconite [*Aconitum chasmanthum* Stapf ex Homes], nux-vomica [*Strychnos nux-vomica* L.], marking nut [*Croton tiglium* L.], and others), and some plant salts (like *Kshara*) are also included in this system.^[7] All these metals, minerals, animal products, and plant parts are converted to formulations after proper processing.

Processing of *Rasaushadhi*

The *Rasaushadhi* are prescribed in therapeutics with other drugs in two forms: one form is specifically treated form called as *Shuddha* drug, while another form is incinerated ash called as *Bhasma* or *Sindura*. For *Shodhana*, in general, the drugs are heated to red hot and quenched immediately or boiled in liquid media or triturated with some liquid and others. The *Bhasma* and *Sindura* are obtained after repeated levigations with herbal extracts or juices and incineration or sublimation by heating of the metals and minerals. The *Bhasma* is prepared by *Putapaka* method; the *Sindura* is prepared by *Kupipakwa* method.^[8]

MODE OF ADMINISTRATION

Systemic application

Regarding the administration of these preparations, it is mentioned in the *Rasashastra* texts that “*Aruchera ap rasangata*,” means these drugs do not cause anorexia in the patients; rather as a whole, these preparations are palatable. Most of the *Bhasma* or *Sindura* or *Shuddha rasa* preparations are administered through the oral route. These preparations are mixed with some other drugs and are levigated by juices or decoctions of specified plant drugs. From the levigated mass is dried and used or rolled into pills of desired size. The prepared pills are then prescribed to administer through the oral route with specific adjuvant. Some water-soluble *Rasaushadhi* are made into aqueous solutions and are administered through

rectal route to indulge *Basti karma*. For example, a solution of *Shuddha kasisa* (ferrous sulfate) or solution of *Shuddha sphaatika* (alum) is applied as *Basti* through rectal route to treat the patients of *Arsha* and *Gudabhramsa*.^[9]

Local application

Some *Rasaushadhi* are applied locally in four forms. The water-soluble drugs are made into solution form and applied locally. The solution of an equal amount of *Shuddha sphaatika* (alum) and *Shuddha tankana* (borax) in water is prescribed to apply locally for the treatment of *Vicharchika*.^[9] Few pastes are prepared by triturating the drugs with water and applied locally for the treatment of skin diseases. A paste prepared from powder of *Bakuchi* (*Psoralea corylifolia* L.) seeds, *Shuddha kasisa* (ferrous sulfate), and *Shuddha gairika* (red ochre) is indicated as local application for the treatment of *Switra*.^[10] Ointments are prepared using ghee or a mixture of sesame oil and bee wax called "*Siktha taila*" as base. An ointment prepared by mixing *Shuddha mriddarashringa* and *Siktha taila* is indicated to apply locally for the treatment of skin diseases.^[11] Oil preparation of *Rasaushadhi* is also mentioned. *Suta taila* is advised for local application for the treatment of *Shirakampa*, *Ekangavata*, and others.^[12]

The local applications are also applied on mucus membranes and other parts except skin. Mixture of *Bakula* (*Mimusops elengi* L.) bark powder and *Shuddha sphaatika* (alum) is prescribed as tooth powder for the treatment of loosening of teeth. Tooth powder prepared by mixing sugar candy powder, *Shuddha sphaatika* (alum), *Lavanga* (*Syzygium aromaticum* L.), and *Ela* (*Elettaria cardamomum* Maton) powder is prescribed to apply in dental caries. A solution prepared by dissolving *Shuddha sphaatika* (alum) in water is prescribed for gurgling for the treatment of *Mukhapaka* (stomatitis). Solution of *Shuddha sphaatika* in water is used as eye drops for the treatment of *Abhishandya* (conjunctivitis). Solution of *Shuddha sphaatika* in cow's milk is prescribed to take as nasal drop to stop nasal bleeding. The solution of some inorganic preparations is administered through vaginal route. For example, the solution of *Shuddha sphaatika* (alum) is administered through vagina to treat the patients of *Shweta pradara* (~leukorrhea) and *Yoni bhramsa* (~vaginal prolapse). Many preparations as collyrium are mentioned in Ayurvedic classics for the treatment of eye diseases. Collyrium of *Shuddha samudraphena* (cattle fish bone) and sugar candy are applied in *Klinna vartma* (eyelid ulcer). Wicks prepared from *Sarjarasa* (resin of *Shorea robusta* Gaertn.), rock salt, *Rasanjana*, and *Shuddha samudraphena* are applied locally to grow eyelashes.^[13] Fine

powder of *Shuddha samudraphena* is blown through the external orifice to stop *Karna srava* (ear discharge). Pills made up of *Shuddha kasisa* (ferrous sulfate), *Shuddha sphaatika* (alum), *Hingu* (*Ferula foetida* Regel), and *Devadaru* (*Cedrus deodara* G. Don.) powder are used as dental cones to treat the disease *Krimidanta*.

Parenteral application

Parenteral application of *Rasaushadhi* is also mentioned in the texts of *Rasashastra*. Formulation named *Suchikabharana rasa* is applied through the parenteral route. The name “*Suchikabharana*” indicates that the medicine is to be applied over the scalp with the help of fine needle after a small incision made by the help of knife. Medicine in very minute doses is taken at the tip of the needle; then the needle is inserted through the incision to release the medicine directly into the blood. This type of application is only indicated in emergency cases such as *Sannipata jwara*, *Atisara*, snakebite, and others.^[14]

Time of drug administration

Eleven different times are mentioned in the Ayurvedic classical texts for the administration of drugs. In the early morning, before midday meal (lunch), after lunch, before and after lunch, middle of the meal, mixed with morsels of food (with meal), with night meal (dinner), after dinner, in between meals, and in frequent intervals and at night (bedtime), these eleven times are mentioned in Ayurveda as the general time of drug administration.^[15]

Rasaushadhi is more effective in an empty stomach. Thus, those are advised to take before meals. Then those are able to cure the diseases quickly. However, to children, old ages, young women, and weak persons, medicines taken in an empty stomach may cause exhaustion and rapid loss of strength. *Rasaushadhi* is prescribed to such patients with or after food; then those are absorbed in the system quickly, and neither do weaken the system nor come out of mouth. The *Rasaushadhi* is generally not prescribed to the thirsty, weakened by fasting, and immediately after taking food or drink. Contravention of these rules may cause adverse effects.^[16] Medicines taken with or after food may cause food–drug interactions that lead to the formation of chelates or complexes causing inadequate absorption and antagonism.^[17]

Dose of *Rasaushadhi*

To indicate the dose of the *Rasa* preparations, it is mentioned in the classics of *Rasashastra* “*Alpa matra upayogitwat*”, means these preparations to be consumed in minute doses. The

dose of the *Rasaushadhi* depends on the nature of the substances. The dose is also altered according to the age and strength of the patients, season, and course of the diseases.

It is mentioned in the texts of *Rasashastra* that no consideration is necessary where the dose is mentioned in the classics. Otherwise, it should be decided upon with intelligence and discrimination. Where no dose is mentioned, the medicine should be prescribed in one *Ratti* (125 mg) per day dose. The dose of the *Bhasma* and *Sindura* is very less, i.e. half *Ratti* (65 mg) to two *Ratti* (250 mg) per day in divided doses; the general dose is considered to be one *Ratti* (125 mg). Four pills of one *Ratti* (125 mg) each are mentioned to be prescribed every day until recovery from the diseases.^[18] There are some exceptions; for example, dose of *Hiraka* (diamond) *bhasma*, i.e. 1/32nd *Ratti* to 1/16th *Ratti* (4 mg to 8 mg) and *Shuddha gauripashana* (arsenic trioxide), i.e. 1/120th *Ratti* to 1/30th *Ratti* (1 mg to 4 mg) dose are minimum, and dose of *Shuddha gandhaka* (sulfur), i.e. 8 *Ratti* (1 g) is maximum.^[19]

Dose of mercury preparations such as *Rasa parpati*, *Arogyavardhani rasa*, and others are started from minimum dose level. After a certain duration, the dose is fixed and continued for a specific duration and then decreased in a tapering manner to the minimum dose and stopped. This specific dose schedule is called as “*Mandala*” which means circular or a moon phase (28 days).^[20] The *Mandala* dose schedule may be prescribed to avoid the adverse effects of the overdose of the drug by producing prior tolerance into the body and to overcome the withdrawal symptoms of the drugs.

This concept of tapering dose is prevailing in Ayurvedic therapeutics, especially during the prescription of inorganic preparations. The general rule of dose for the inorganic preparation is four pills of one *Ratti* (125 mg) each should be prescribed everyday till recovery from diseases; then reduce the number to two pills a day; after which, prescribe only one pill a day, and then stop the medicine altogether only after complete cure.

Anupana

The use of specific adjuvants is a unique concept of therapeutics of the Ayurvedic system. In general, the drugs are accompanied with some liquids (juice or decoction of herbs, ghee, honey, and others) during administration in the Ayurvedic system of medicine is called as *Anupana*. Regarding its importance, it is mentioned in the texts that it helps in the rapid spread of the medicine all over the body, exactly in the same way as oil, sprinkled on the water surface spreads rapidly.^[21] Hot water, milk, honey, and ghee are considered general

Anupana. Besides this, the juice or decoction of herbs having the required efficacy, selected in due consideration of climate and season are prescribed as *Anupana* with *Rasaushadhi*. The physician has been given the priority in selection of *Anupana* in connection to the particular drug or disease.

The *Rasaushadhi* are given with honey or *Hingu* (asafoetida) fried with ghee or with *Jeeraka* (*Cuminum cyminum* L.) pasted with water as *Anupana* to pacify the diseases caused by vitiated *Vata*. In the diseases caused by vitiated *Pitta*, the medicines are prescribed with decoction of *Dhanyaka* (*Coriandrum sativum* L.) or with decoction of *Madhulika* (*Glycyrrhiza glabra* L.). In the diseases of vitiated *Kapha*, the medicines are given with juice of *Vasa* (*Adhatoda vasica* Nees) leaves.

It is mentioned in the texts of *Rasashastra* that a medicine prescribed with different *Anupana* will be effective in different disease conditions. For example, *Mrityunjaya rasa* pacifies diseases of *Pitta* origin, when it is given with *Shalmali* (*Bombax ceiba* L.) juice; pacifies diseases of *Kapha* when it is given with *Maricha* (*Piper nigrum* L.) powder; and *Vata* diseases when it is prescribed with *Pippali* (*Piper longum* L.) powder.^[22] It is given with curd water for management of *Vataja jwara*; prescribed with *Adraka swarasa* (*Zingiber officinale* Rosc. juice) for management of *Sannipatika jwara*; given with *Jambira swarasa* (*Citrus medica* L. juice) for management of *Ajirna jwara*; and is prescribed with *Jeeraka* (*C. cyminum* L.) powder and jaggery for management of *Vishama jwara*.^[23]

Studies inferred the synergistic effect of *Anupana*. *Shwasa kuthara rasa* (a formulation containing inorganic medicines, commonly used to treat *Shwasa roga*) with juice of betel leaves exhibited better activity profile in the patients of *Tamaka shwasa* in comparison to *Shwasa kuthara rasa* alone.^[24] A study reported better and quicker absorption of *Swarna bhasma* with *Maricha churna* (*P. nigrum* powder) and ghee as *Anupana* in comparison to *Swarna bhasma* alone in human participants.^[25]

Duration of Rasa chikitsa

The *Rasaushadhi* is applied according to the course of the disease. For acute disease such as *Vishama jwara* and others, those are applied for a short course until cure of the diseases. For example, *Mahajwarankusha rasa* in 2 *Ratti* (250 mg) dose with ginger juice is indicated for treatment of *Jwara*; 1 day for *Vataja jwara*; 2 days for *Pittaja jwara*; and 3 days for *Kaphaja jwara*.^[26]

However, for chronic diseases such as *Pandu roga*, *Amavata*, *Vatavyadhi*, *Prameha*, *Kushtha*, and others, the *Rasaushadhi* is prescribed for a longer duration. *Vatari rasa* is prescribed for 1 month for the treatment of *Vridhhi roga*.^[27] To pacify the chronic poisoning effects by *Rasayana* therapy, a formulation prepared from *Pippali* (*P. longum* L.), *Haritaki* (*Terminalia chebula* Retz.), *Chitraka* (*Plumbago zeylanica* L.), rock salt, *Abhraka bhasma*, and *Lauha bhasma* with *Bhringaraja* (*Eclipta alba* Hassk.) *swarasa* and *Amlaki* (*Phyllanthus emblica* L.) *swarasa* called as *Rasakalpa* is prescribed for 1 month.^[28] A mixture of *Tamra bhasma*, *Apamarga kshara*, *Sarjika kshara*, and *Yava kshara* is given with water in two *ratti* (250 mg) thrice a day dose for the treatment of *Udumbara kushtha* for 7 weeks. *Arkeshwara rasa* is given with honey for the treatment of *Mandala kushtha* for one month duration.

Principles of *Rasa chikitsa*

There is a need for proper understanding of the principles of the therapeutic application of *Rasaushadhi*. The effectiveness of *Rasa chikitsa* depends on these principles.

The therapeutic application of *Rasaushadhi* is based on three important factors. These are effective in very small doses; the average dose of *Rasaushadhi* is 125 mg. The patients can take these medicines easily; these drugs do not cause any type of anorexia and others, rather these are having *Deepana* (~carminative) and *Pachana* properties. In addition, these drugs act very fast, which is the need of time.

These drugs are having augmenting properties. It is mentioned in the texts of *Rasashastra* that these drugs may be mixed with the formulations already mentioned for the treatment of any disease to augment or synergize the therapeutic effect of that formulation. In the texts, this specific effect of *Rasaushadhi* is indicated by the word *Yogavahi*. The *Rasaushadhi* containing poisonous ingredients should not be given to the old patients above 80 years or more and to children below 9 years of age.

DISCUSSION

The definition of the word “*Rasa*” of *Rasashastra* as mentioned in the texts of *Rasashastra* clearly indicates the specific forms of the drugs for therapeutic application purposes. These are claimed as biologically produced nanoparticles. It is mentioned in the texts of *Rasashastra* that a *Rasaushadhi* will be applicable as medicine when it attains the absorbable, assimilable, and adaptable (*Rasibhavan*) form. Before the application of *Rasaushadhi*, a physician should have proper knowledge of the principles of *Rasashastra*. It is claimed in the

texts of *Rasashastra* that, a physician who does not know the proper application of *Rasaushadhi*, they should not be considered as the best physician. The management of adverse effects produced by raw materials or improperly prepared *Bhasma*, mentioned in classics of *Rasashastra* may prove boon to the environmental pollution, the various industrial hazards, and heavy metal poisoning. One recent study based on this principle reported that myrobalan (*Haritaki*) counteracts lead-induced hematological parameters, splenomegaly as well as lowers lead load through excretion in feces on lead-induced toxicity in mice. Another study reported that *Lauha bhasma* and *Mandura bhasma* at 11 mg/kg dose successfully alter the necrosis, fatty changes, and fibrosis in spleen and hemolytic anemia caused by mercuric chloride in rats along with that the drugs show very good cytoprotective effect.

CONCLUSION

Therapeutic application of *Rasaushadhi* is an integral part of Ayurvedic therapeutics. The application depends on several principles. The effectiveness of *Rasaushadhi* depends on proper understanding and application of these principles. These principles include proper examination of the patients, types and course of the disease, preparation of *Rasaushadhi* and dose, duration, and selection of *Anupana* with *Rasaushadhi* during application. The article is concluded with these words that *Rasashastra* is the branch of Ayurveda that deals with the preparation of medicines from metals, minerals, poisonous plants and some animal products, and therapeutic application of those medicines following the Ayurvedic therapeutic principles, i. e., *Dosha*, *Dushya*, *Rogi pariksha*, and *Roga pariksha*.

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