

## A CRITICAL REVIEW ON HRIDAYARNAVA RASA - AN HERBOMINERAL FORMULATION

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## ABSTRACT

*Hridroga* is a broad entity considered in Ayurveda, covering all cardiovascular diseases. According to current studies, 17.5 million people die each year from cardiovascular diseases, with an estimated 31 per cent of death worldwide. Among them 7.4 million died due to coronary heart disease, 6.7 million due to stroke, atherosclerosis etc., hence it is needed to discover effective drugs which can prevent death due to cardiovascular diseases and other cardiac disorders. **Methods:** Statins and fibrates are the most prescribed medications for cardiac disorders. Though there is extensive evidence about their safety and efficacy, but the use of these synthetic drugs has certain adverse effects; Myalgia, hepatopathy, renal failure, increased risk of diabetes and rhabdomyolysis are the most common side effects from statin use. Considering the wide magnitude of cardiac disorders in the Indian subcontinent and the absence of promising therapy with safety in conventional systems; the suffering population is turning towards certain other alternatives for safe and effective remedies. *Hridayarnava rasa*, one such Herbo-mineral compound formulation containing *Kajjali* and *Tamra bhasma* as an integral component indicated in the treatment of abnormal lipid levels. **Results:** *Hridayarnava rasa* is thereby useful in tackling *Hridroga* in specific, Atherosclerosis. Therefore, this formulation can be enforced in place of statins of conventional medicine. **Discussion:** This review is mainly focused on different aspects of Herbo mineral ayurvedic formulation *Hridayarnava rasa*. It is well recognized in Ayurveda that most cardiac disorders run a chronic course and are difficult to treat, there are many formulations in the market for *Hridroga* yet there is scope for drugs in this disease, *Hridayarnava rasa* is one such

formulation that is designed perfectly for *kaphaja Hridroga*, which is also cost-effective, easy to prepare, as it is hidden all these days its efficacy was not discussed so here an attempt has been made to address the critical review of *Hridayarnava rasa*.

**Keywords:** *Hridayarnava rasa*, Cardiovascular diseases, *Hridroga*.

## INTRODUCTION

Nowadays, life has become so stressful, that the fast & stressed lifestyle leads to many serious diseases such as Diabetes, Cardiovascular diseases, Hypertension, Stroke etc., cardiovascular diseases are the leading cause of death globally, hence there is a need to explore formulations that will help to prevent cardiac ailments. *Hridroga* is a disease of the heart either due to structural or functional damage. Because of the causative factors like *athi ushna*, *guru*, *kashaya*, *tikta rasa* *Ati sevana*, *atishrama*, *abhighata*, *adhyashana*. *atiprasanga*, *vegadharana*. *adhika Chinta* causes *tridosha prakopa*, reaches *Hridaya* and does *dushana* of *hrudayagata rasa* and causes *ama utpatti* further causes *avarodha* of *srotas* (atherosclerosis, coronary artery disease, plaques), *Atipravutti* of *vata* (fibrillation, vessel enlargement, palpitations) hence produces the disease *Hridroga*. Ayurveda being the ancient science of life provides various formulations which can take care of cardiovascular diseases without any complications. *Hridayarnava rasa* is one such formulation described in most of the Rasashastra texts and widely

used in practice for the prevention and cure of *Hridroga*.

The main objective of this review article is to discuss the therapeutic uses of *Hridayarnava Rasa* and to discuss the different pharmacological properties and therapeutic uses of isolated constituent drugs of *Hridayarnava Rasa*. The authentic subject material has been reviewed from Ayurveda and modern medical literature. Different research and review articles were searched in different journals. This review is mainly focused on different aspects of Herbo mineral Ayurvedic formulation *Hridayarnava Rasa*.

Various Rasashastra texts have depicted *Hridayarnava rasa*, the most widely used formulation taken from the text *Rasendra Sara Sangraha* in *Hridroga chikitsa*, detailed review of the same is undertaken in the present study. Other references are quoted from *Rasakamadhenu*, *Rasachandamshu* etc. having similar ingredients but different drug designs in relation with parts of *Tamra* in the formulation.

## MATERIALS AND METHODS: INGREDIENTS:

**Table 1:** Showing the Ingredients of *Hridayarnava Rasa* in various texts

References	Parada	Gandhaka	Tamra bhasma	Bhavana Dravya
<i>Rasendra Sara Sangraha</i>	1 part	1 part	2 parts	<i>Triphala Kwatha &amp; Kakamachi swarasa</i>
<i>Rasa chandamsu</i>	1 part	1 part	2 parts	<i>Triphala Kwatha &amp; Kakamachi swarasa</i>
<i>Rasatarangini</i>	1 part	1 part	2 parts	<i>Triphala Kwatha &amp; Kakamachi swarasa</i>
<i>Rasendra Chintamani</i>	1 part	1 part	1 part	<i>Triphala Kwatha &amp; Kakamachi swarasa</i>
<i>Yogaratakara</i>	1 part	1 part	1 part	<i>Triphala Kwatha &amp; Kakamachi swarasa</i>
<i>Rasakamadhenu</i>	1 part	1 part	1 part	<i>Triphala Kwatha &amp; Kakamachi swarasa</i>
<i>Bhaisajyaratnavali</i>	1 part	1 part	1 part	<i>Triphala Kwatha &amp; Kakamachi swarasa</i>

## METHOD OF PREPARATION:

- *Kajjali* is prepared by adding equal parts of *Shuddha parada* and *Shuddha Gandhaka* in a clean *khalwa yantra*.
- After proper *Mardana of Kajjali*, 2 parts of *Tamra bhasma* is added and *Mardana samskara* is carried out until it becomes a homogeneous mixture
- Then it is subjected to *Bhavana* with *Triphala Kwatha* and *Kakamachi swarasa* one day each,

followed by preparing vatis of *chana Matra pramana*, later it is dried in shade.

**DOSAGE:** 125 to 250 mg

**ANUPANA:** *Kakamachi phala-1 Karsha*

*Triphala-1 Pala*

*Jala-32 tola*

Above mentioned quantity is taken and *Kwatha* is prepared by

Reducing it to 1/8th is used as *Anupana*.

There is a difference of opinion regarding *Anupana* for *Hridayarnava rasa* by various authors, which is mentioned as follows.

**Table 2:** Showing the Difference of opinion regarding *Anupana*, of *Hridayarnava rasa* in various texts

References	Dose	Indications	Anupana
<i>Rasendra Sara Sangraha</i>	<i>Chana Matra</i>	<i>Kaphaja Hridroga</i>	<i>Kwatha prepared out of Triphala and Kakamachi</i>
<i>Rasa Chandamsu</i>	<i>Chana Matra</i>	<i>Kaphaja Hridroga</i>	<i>Kwatha prepared out of Triphala and Kakamachi</i>
<i>Rasatarangini</i>	<i>Raktikapaada</i>	<i>Hridroga</i>	Not mentioned
<i>Rasendra Chintamani</i>	<i>Chana Matra</i>	<i>Hridroga</i>	<i>Madhu and Tambula Patra swarasa</i>
<i>Yogaratnakara</i>	<i>Chana Matra</i>	<i>Hridroga</i>	Not mentioned
<i>Rasakamadhenu</i>	<i>Chana Matra</i>	<i>Hridroga</i>	<i>Madhu and Arjuna Kwatha</i>
<i>Bhaisajyaratnavali</i>	<i>Chana Matra</i>	<i>Hridroga</i>	<i>Arjunadi Kwatha</i>

**Table 3:** Showing the properties of individual drugs of *Hridayarnava rasa*

DRUG	RASA	GUNA	VEERYA	VIPAKA	DOSHAGHNATA
<i>Parada</i> <sup>3</sup>	<i>Shadrasa</i>	<i>Snigdha, Sara and Guru</i>	<i>Ushna</i>	<i>Madhura</i>	<i>Tridoshaghna</i>
<i>Gandhaka</i>	<i>Madhura</i> <sup>4</sup> , <i>Katu, Tikta, Kashaya</i> <sup>5</sup>	<i>Ushna, Sara, Snigdha.</i>	<i>Ushna</i>	<i>Katu</i>	<i>Kapha Vatahara, Pitta-vardhaka.</i>
<i>Tamra bhasma</i>	<i>Tikta, Kashaya, Madhura, Amla</i> <sup>6,7</sup>	<i>Laghu, Sara</i> <sup>7</sup>	<i>Ushna</i> <sup>6,8</sup> , <i>Sheeta</i> <sup>7</sup>	<i>Madhura</i> <sup>6,8</sup> , <i>Katu</i> <sup>7</sup>	<i>Pitta-Kaphara</i> <sup>6,7,8</sup>
<i>Haritaki</i> <sup>9</sup>	<i>Kashaya, Tikta, Madhura, Katu, Amla</i>	<i>Laghu, Ruksha</i>	<i>Ushna</i>	<i>Madhura</i>	<i>Tridosha Shamaka, Vatashamaka</i>
<i>Vibhitaki</i> <sup>10</sup>	<i>Kashaya</i>	<i>Ruksha, Laghu</i>	<i>Ushna</i>	<i>Madhura</i>	<i>Kaphahara, Tridosha Shamaka</i>
<i>Amalaki</i> <sup>11</sup>	<i>Amla, Madhura, Kashaya, Tikta, Katu</i>	<i>Guru, Ruksha, Sheeta</i>	<i>Sheeta</i>	<i>Madhura</i>	<i>Pittashamak, Tridosha Shamaka</i>
<i>Kakamachi</i> <sup>12</sup>	<i>Tikta</i>	<i>Laghu, Snigdha</i>	<i>Anushna</i>	<i>Katu</i>	<i>Tridosha Shamaka</i>

DRUG	KARMA	ROGAGHNATA
<i>Parada</i>	<i>Yogavahi, rasayana, Vrishya, Balya, vayastambana, pustikaraka, deepana, agnivardhaka, deha and Loha siddikara, ropana, krimighna.</i>	<i>Vata roga, vali palita, jara, sarva akshi roga, krimi, kusta.</i>
<i>Gandhaka</i>	<i>Deepana, Pachana, Vishahara, Jantughna</i>	<i>Kandu, Visarpa, Krimi, Kustha, Kshaya, Pleeha, Rasayana.</i>
<i>Tamra bhasma</i>	<i>Netrya, Lekhana, Urdhwa-adha parishodana Kshutkarma</i> <sup>6</sup> , <i>Saraka, Ropana</i>	<i>Udara roga, Kusta, Sthoulya, Pandu</i> <sup>6</sup> , <i>Garavisha, Swasa, Kasa, Kshaya, Pinasa, Shula, Amlapitta, Krimi</i> <sup>7</sup> , <i>Arsha, Grahani</i> <sup>8</sup> , <i>Apasmara, Yakritvikara</i>

Haritaki	Anulomana, Mridurechana, Grahi, Vrishya, Hridya, Shonithasthapana, Rasayana, Medhya, Chakshushya	Vatavyadhi, Vrana, Rakatavikara, Vatarakta, Shwasa, Prameha, Swarabheda
Vibhitaki	shotahara, vedanasthapana, rakta stambana, deepana, vajikarana, jwaragna anulomana, bhedhana, rechana, krimighna	Shotha-Vedanayuktavikara, Hridhya, Charmaroga, Granthi, Visapa, Agnimandhya,
Amalaki	Dahaprashamana, Chakhushya, Keshya, Medhya, Balya, Rechana, Deepana, Hridya, Anulomana, Rasayana, Pramehagna, Jwaraghna	Mastishkadourbalya, Drishtimandya, Indriyadourbalya, Dourbalya, Vibandha, Kasa, Shwasa, Rakatapitta.
Kakamachi	Shotahara, Vranashodana, Raktashodana, Vishaghna, Chakshushya, Rasayana, Shwasahara, Jwaraghna, Hridya	Shotha, Urustamba, Vrana, Visarapa, Udara, Yakritshotha, Arsha, Pravahika, Atisara, Amavata

## ANALYTICAL FINDINGS:

### Organoleptic characters

Colour-black

Smell - faint

Touch - fine

Taste-tasteless

### Quantitative estimation

- Free sulphur-- not more than 17.81%
- Combined sulphur-- not more than 5.95% not less than 4.05%
- Mercury-- not more than 25.3 not less than 22.3
- Copper as CuO not more than 2.53 not less than 24.6
- Calcium as Ca - not more than 1.33 not less than 1.24
- Iron as Fe2O3 -not more than 14.37
- Phosphate as Po4 not more than 1.0
- Sodium as Na - not more than 1.0
- Ash value-- not more than 58.17 not less than 51.04
- Acid insoluble ash- not more than 6.1 not less than 2.9
- Volatile matter - not more than 3.73 not less than 1.97

## DISCUSSION

The formulation that has been selected in the present study for review is first described by *Rasendra Sara Sangraha*. The same formula was adopted by *Rasachandamsu*, *Rasatarangini*, *Rasendra Chintamani*, *Yogaratanakara*, *Rasakamadhenu*,

*Bhaishajyaratnavali*. In *Rasendra Sara sangraha Rasachandamsu & Rasatarangini* the quantity of *Tamra bhasma* is 2 parts rest of the authors mentioned 1 part of *Tamra bhasma*. There is also difference of opinion regarding *anupana* for *Hridayarnava rasa*, In *Rasendra Sara sangraha* and *Rasa chandamsu*, *Kwatha* prepared out of *Triphala* and *Kakamachi* was mentioned as *anupana*, In *Rasendra Chintamani* it is administered along with *Madhu* and *Tambulapatra swarasa*, in *Rasakamadhenu* it is administered with *Madhu* and *Arjuna Kwatha*, in *Bhaishajyaratnavali* it is along with *Arjunadi Kwatha*, in *Rasatarangini* and *Yogaratanakara* no specific *anupana* is mentioned.

By reviewing the ingredients of the formulation, it is found that most of the drugs having *Madhura*, *Tikta*, *Kashaya rasa*, *Laghu*, *Ruksha*, *Ushna Guna*, *Ushna veerya*, *Madhura vipaka* so they neutralize the *kupitha Kapha dosha*, almost all the drugs having *Hridya* property hence *Hridayarnava rasa* is indicated in *Kaphaja Hridroga*.

- *Kajjali* owns properties like *Rasayana*, *Yogavahi*, *sarvarogahara*, these properties of *kajjali* are essential to enhance efficacy and potency in the prepared medicine, when mixed with other medicines they become more potent and act in low doses. *Kajjali* increases the bioavailability of the drug, which helps to obtain greater efficiency of the drug, it gives strength to the cardiac muscles by its *Rasayana* property, it subsides the *hridayashritha Vayu dusti*.
- *Tamra bhasma* is reported as *Medhopaha*, *Lekhana* and *Sthoulyahara* and it is helpful in

Hypercholesteremia and Dyslipidemia. *Tamra bhasma* has *madhura rasa, katu & madhura vipaka, sheeta virya, laghuguna, pittahara* and *kapha hara* properties. Due to *lekhana* and *karshana* properties, it removes atherosclerosis and platelet aggravation, rejuvenates the damaged tissue of heart muscles, it acts as a tonic to heart-lung apparatus. *Tamra bhasma* being a scraping agent it reduces untoward unusual or damaged parts; it clears micro-channel openings of the coronary arteries. Due to scraping properties, it reduces thrombolytic atherosclerotic changes. *Tamra bhasma* increases absorption of iron and acts on the liver and cures cardiorespiratory ailments.

*Tamra bhasma* possess a rich source of copper, copper is one of the vital trace elements of the body required for normal physiological functions, copper deficiency leads to hypercholesterolemia leads to CVD, copper plays a special role in lipid metabolism. Diet rich in copper has a beneficial effect on blood cholesterol.

- *Triphala* is having *shodhana, rasayana* properties. *Haritaki* plays an important role in blood circulation and cleansing of macro and microcirculatory channels, it is having hypolipidemic and Hypocholesterolemic properties. *Vibhitaki* aids in purification and circulation of blood in the body, fruit extract of *Terminalia bellerica* shows hepatoprotective activity, it facilitates in controlling fat metabolism and blood cholesterol level, it aids in treatment of liver by reducing atherosclerosis. *Amalaki* regulates the liver and accelerates blood clotting, it is rich in vitamin c and acts as a powerful antioxidant agent by removing excess free radicals. Regular intake of *Amalaki* shows an increase in cardiac glycogen and decrease in serum GOT, GPT, and LDH which suggests a cardioprotective action. *Triphala* exerts a marked cardioprotective effect, reduces serum cholesterol, improves circulation, reduces high blood pressure helps in the management of cardiac disorders.
- *Kakamachi swarasa* is having *Bhedana, Hridya, Kaphahara, Pittahara, Rasayana, Vatahara,*

properties, the cardioprotective activity of methanolic extract of berries of the plant *Solanum nigrum* was evaluated by using global in vitro ischemia-reperfusion injury carried out using doses of 2.5 and 5.0 mg/kg for 6 days for 30 days. The results indicate that the extract exhibited significant ( $p < 0.001$ ) cardioprotective activity against the global in-vitro ischemia-reperfusion activity.

- *Arjuna* is an excellent cardi tonic and cardioprotector. It is potent in strengthening the cardiac muscles, improving the circulation of the coronary arteries and prevents cardiac muscles from ischemic damage. *Arjuna kwatha* as *anupana* for *hridayarnava rasa* by virtue of all the above properties thus helps to fortify the organ, prevents accumulation of plaque thereby beneficial in *Hridroga*.
- By considering specific actions of *Prabhakar Vati*, we can make out that it will work better in CVD's which require strength to the myocardium like Left ventricular hypertrophy and right ventricular hypertrophy, where we need more *Rasayana* properties. But in the case of IHD more we need to concentrate on the removal of blockages which may be because of atheroma, *Hridayarnava rasa* will work better by removing blockages and by preventing further accumulation.

## CONCLUSION

This review has presented a collective knowledge on therapeutic, pharmacological, and medicinal applications of *Hridayarnava rasa* and its constituent drugs. Cardio protectivity is classified as a physiological approach of cardio protectivity and a therapeutic approach of cardio protectivity. The same concept was explained in our texts thousands of years ago i.e., *Hridya* (physiological) and *Hridrogahara* (Therapeutic) *Dravya*. *Amalaki, Haritaki, Kakamachi* are having *Hridya* property and *Tamra bhasma* is having *Hridroga hara* property and *kajjali* as *Yogavahi* exerts best action in *hridayagata Vikaras*. *Hridayarnava rasa* is a best *rasoushadhi* indicated in *kaphaja Hridroga*. Quantity of *Tamra bhasma* is 2 parts acc to *RSS, R Cha, RT*. The rest of the authors mentions 1



part, *Kakamachi*, *Haritaki Amalaki* and *Tamra bhasma* are proved as cardioprotective. The *anupana* varies according to different authors. *Hridayarnava rasa* is safe for therapeutic use at its normal dose.

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