



Review Article

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AYURVEDIC DRUGS IN MANAGEMENT AND UPAKARMA OF VATAJA HRIDROGA: A REVIEW

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ABSTRACT

Hridroga is the most critical ailment described in Ayurveda. Vataja (cardiovascular disorder) is a form of Hridroga that can be distinguished by pathological symptoms described in Ayurveda. It manifests as ruja in urah pradesha (chest discomfort) and other signs and symptoms such as alpanidrata, shvasavrodha, darah, hrutdrava, stambha, stabadha, akasmat deenata, shoka, bhaya, shabdasehsnuta, shunyata, vepathu, and vestana. Ayurveda has a deficit in assessing disease symptoms using standard parameters. In order to diagnose a disease, it is necessary to do an assessment. Vataj Hridroga symptoms include hritshunya bhava, hrit-shosha, bheda and stambha, and moha-murccha. It is primarily due to Vata vitiation. Shaman chikitsa is the most effective treatment for Vataj Hridroga. Classical literature on Vataj Hridroga and Haritakyadi ghritapaan from Charaka Samhita was studied as a source of information. The drugs used to make Haritakyadi ghrita from Bhavaprakasa Nighantu. The literature mentions observations on nidana, samprapti, Vataj Hridroga's rupa, Haritakyadi ghritapaan, and drugs.

Keywords: Ayurveda, Vataja Hridroga, Haritakyadi ghrita, Angina

INTRODUCTION

Hridroga is the leading cause of mortality worldwide and significantly lowers the quality of life. Hridroga is regarded as one of the interconnected aspects of Rasavaha srotas (cardiovascular system). It is the result of anything that affects Hridaya. Hridroga is divided into various types, such as Vataja Hridroga, Pittaja, Kaphaja, and Sannipataj. Rasa dhatu becomes afflicted due to the vitiation of Vatadi doshas, invading the components of Hridaya and inflicting structural and functional damage, resulting in Vataja Hridroga as there are no standard parameters in Ayurveda. Chikitsa using a traditional framework is needed for appropriate diagnosis and treatment¹.

Shodhan and shaman chikitsa are two types of Ayurvedic treatments for disorders in general. The chikitsa of Vataja Hridroga as paan and amla dravya siddha taila or Punarnavadi taila abhyanga are mentioned by Acharya Charaka.

In the symptoms of Vataj Hridroga, he also discusses the Haritakyadi ghritapaan. Haritaki, Shunthi, Pushkarmula, Vayastha (Guduchi), Kayastha, saindhav, and Hingu are some medications utilised to make ghrita in the form of kalka².

Multiple causal causes for Hridroga are highlighted in Ayurveda, including over-exertion excessive exercise, and excessive administration of shodhana treatments, such as vamana, virechana, and basti. General disorders that cause sosha and psychological reasons such as excessive worry, fear, stress, mental trauma, and physical trauma that directly affects the heart can all cause Hridroga.

Similarly, Hridroga is aided by suppressing natural urges (vegadharana) such as thirst, tears, shrama swasa, adhovata, and cough. Hidden natural impulses result in altered Vata functioning, which may eventually and insidiously lead to Hridroga. Ayurveda

defines metabolic syndrome in terms of Sthoulya and Prameha, which currently contribute to Hridaya difficulties.

Researchers have discovered various causes for the impact of psychological factors on the heart's function and health. Stress modifies functions such as adrenaline release, blood pressure and heart rate, which can harm the lining of the arteries, or there is an increased requirement for oxygen, which can induce angina in cardiac patients.

Hridroga: According to Sushruta Samhita, Hridaya, similar to pundarika, is facing downwards; it opens in an awake state and closes when the person sleeps.

Madhav Nidan asserts that because the heart is a critical organ, diseases affecting it are severe.

Various factors cause Hridroga:

- 1) Extensive exercise.
- 2) Extensive use of articles having tikshna attributes
- 3) Administration of excess purgation and emetic therapies and enema
- 4) Emesis, ama, and suppression of the manifested natural urges.
- 5) Emaciation
- 6) Trauma, extreme worry, fear and stress
- 7) Excessive consumption of hot and heavy diet.
- 8) Unrestrained consumption of diet having Kashaya and tikta rasa.
- 9) Repression of natural urges³

Types of Hridroga

Vataja Hridroga: Rooksha, shushka, and alpa aahar aggravates Vata and produces pain in the heart region due to shoka, uposhana, and ativyayam. shula (pain) is another prevalent Vataja Hridroga roga symptom. Angina is characterised by intense pain. Vataja Hridroga is related to angina from the perspective of pain.

Ruksha and laghu increases Vata, causing arterial wall hardening or calcification. Arteriosclerosis, for example, has been associated with the Vataja Hridaya roga.

Pittaja Hridroga: Pitta dosha aggravates and produces scorching heat, bitter taste, vamaana, trishna, murcha, and sweda in the body due to ushna, amla, lavana, kshara, katu rasa's food and excessive consumption of alcohol.

Kaphaja Hridroga: Kapha aggravates and produces symptoms of Kapha dosha in the heart region, such as heaviness and numbness in the chest, anorexia due to excessive food consumption, snigdha, guru food, and a lack of physical exercise. Myocardial infarction also causes heaviness in the chest; Kaphaja Hridroga can be linked to the condition of myocardial infarction³.

Sannipataja Hridroga: It is caused by Vata, Pitta, and Kapha, and it manifests the symptoms of all three doshas at the same time. Acute chest pain has been associated with Sannipataja Hridroga.

Krimija Hridroga: If the patient has Kaphja Hridroga, tila, or guda, rasa dhatu and dusthi rasa will cause granthi utpatti. This granthi krimi appears and spreads throughout the heart, causing intense cutting pain, itching, and other symptoms. It can potentially result in death; hence Acharya Charaka advises treating it as quickly as possible. Krimija Hridroga is related to myocardial infarction because myocardial infarction causes extreme discomfort and necessitates immediate treatment, similar to Krimija Hridroga⁴.

Hridyata, Hridroga, Hridayamaya and Hridaya sula are the terms used in Vedas. Charaka Samhita has the oldest detailed description of Hridrogas, followed by Sushruta and Vagbhata.

While Charaka and Vagbhata mention Hridroga in another chapter, Sushruta has an entire chapter dedicated to the ailment³.

Symptoms of Hridroga

Following are the symptoms of Hridroga

1. Vaivarnya - Cyanosis
2. Murcha - Syncope
3. Jwara - Fever
4. Kasa - Cough
5. Hikka – Hiccough
6. Shwasa - Dyspnoea and orthopnoea
7. Mukha vairasya - bitter taste of mouth
8. Trishna - Excessive thirst
9. Pramoha - Stupor
10. Chardi - Vomiting

Nidana (Etiology)

According to Ayurveda, the etiological aspects of Hridroga, like any other disease, revolve around the type and mode of food consumed and one's lifestyle. They can be divided into three categories:

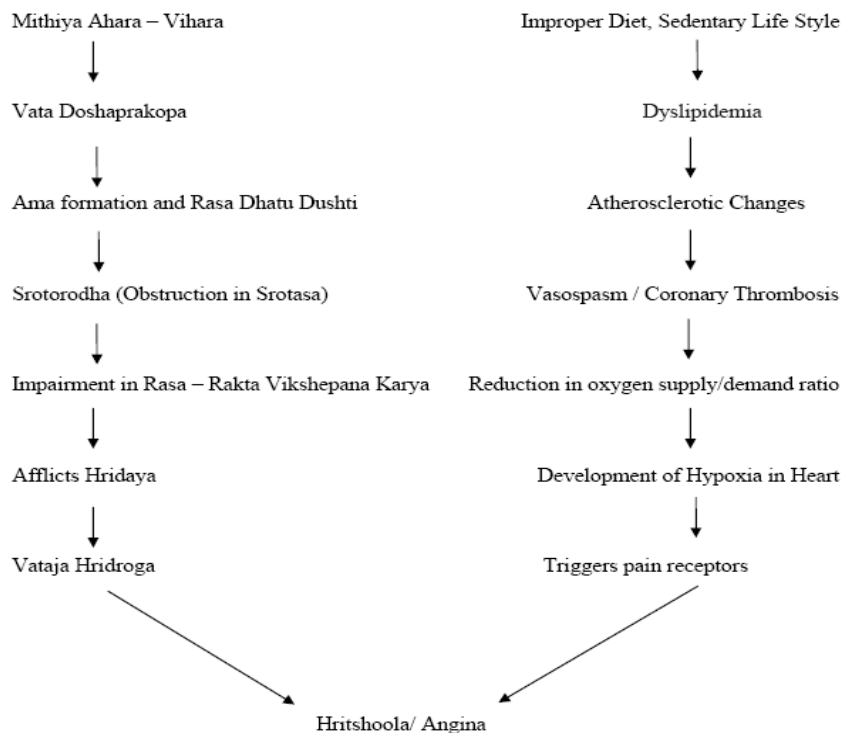
Diet factors: Ushna, guru, kashaya, tikta sevana

Somatic factors: Shrama, vegadharana, abhigata, ativerechana

Psychological factors: Chinta, bhava, trasa, mada

Samprapti (Pathogenesis) of Vataja Hridroga

Vataja Hridroga (Angina) is caused by a lack of blood supply to the heart. It can radiate to the neck, shoulders, and even the tips of the fingers if felt over the left side of the chest or, more typically, in the retrosternal region. It squeezes, stretches, constricts, presses, or crushes by nature and is increased by activity and heavy meals and relieved by rest⁵.



Comparative study of the pathogenesis of Hirtshoola (Ayurveda vs modern science)⁵

Treatment of Vataja Hridroga by Haritakyadi Ghrita

Hritshoola is listed in Ayurveda as a symptom of Vataja Hridroga under Hridroga vyadhi. Various research articles have proved the anti-anginal, hypolipidaemic, antioxidant, and anti-thrombotic activity of Haritakyadi ghrita ingredients.

Ingredients of Haritakyadi ghrita include,

Haritaki (*Terminalia chebula*)

Several flavonoids found in *Terminalia chebula* displayed vasodilatory actions.² The inhibition of protein kinase C appears to be the primary vasodilatory mechanism of flavonoids. Inhibition of cyclic nucleotide, phosphodiesterases, or reduced calcium ion (Ca²⁺) absorption could play a role in their vasodilatory actions.²

In rabbits, it had anti-hypocholesterolaemia and anti-atherosclerotic efficacy against cholesterol-induced hypercholesterolemia and atherosclerosis. There has been evidence of hypolipidemic effectiveness against experimentally generated atherosclerosis.

Through a variety of methods, oxidant stress causes atherosclerosis. *T. chebula* is high in antioxidants. It inhibited lipid peroxidation, prevented the production of superoxide radicals, and scavenged free radicals.² In albino rats, an ethanolic extract of *T. chebula* fruits reduced the amount of lipid peroxidase.

Sunthi (*Zingiber officinale*)

Antioxidant, cardioprotective, and hypocholesterolaemia properties have been documented for several ginger preparations. Some *Z. officinale* isolates were tested for antiplatelet aggregation and vasorelaxant bioactivities in a study. Gingerol and Shogaol were shown to have significant antiplatelet aggregation bioactivity among the substances studied. In high potassium (K⁺) medium, gingerol also suppressed calcium (Ca²⁺) dependent contractions.²

The crude extract of ginger had a cardio-depressant effect on the rate and force of spontaneous contractions in guinea pig paired atria. Phenylephrine-produced vascular contraction in rabbit thoracic aorta preparations was eased by it at a concentration ten times higher than necessary to relax K⁺-induced contraction. It is also responsible for altering the Ca²⁺ dosage response curves to the right, comparable to the impact of Verapamil, confirming its Ca²⁺ channel-blocking ability. In mice, the aqueous extract and methanolic fraction of *Zingiber officinale* exhibit impressive antioxidant activity as well as powerful hypolipidemic effects without causing acute toxicity.²

Pushkarmoola (*Inula racemosa*)

Patients with ischemic heart disease were given Pushkarmoola root powder. According to the post-exercise ECG, the powder reduced ST-segment depression and T-wave inversion. Within 75 minutes of oral treatment to albino rats, the petroleum ether extract of roots reduced plasma insulin and glucose levels and dramatically counteracted adrenaline-induced hyperglycaemia. On the frog heart, the extract had both inotropic and chronotropic effects. These studies point to one of *Inula racemosa* components having adrenergic beta-blocking properties.

Pushkarmoola also had anti-lipidemic properties, lowering triglyceride levels in the blood. Albino rats were used to test the

antioxidant activity of a 70% ethanol extract from the roots. Because of its antioxidant characteristics, Pushkarmoola was found to be helpful.²

Guduchi (*Tinospora cordifolia* Miers)

Administration of *T. cordifolia* root extract (2.5 and 5.0 gm/kg body weight) for 6 weeks significantly reduced serum and tissue cholesterol, phospholipids, and free fatty acids in alloxan diabetic rats. Alkaloids like choline, palmatine, tetrahydropalmatine, magnoflorine, epicatechin, and an aromatic glycoside, secoisolariciresinol, give the plant antioxidant properties. N-trans-feruloyl tyramine, a phenolic amide, has been found to have platelet aggregation activity.²

Amalaki (*Emblica officinalis* Gaertn.)

The fresh juice of the *E. officinalis* fruit, which is high in Emblicanin-A and Emblicanin-B, protects the rat heart from ischemia-reperfusion-induced oxidative stress. It suggests that Amalaki may reduce oxidative stress and protect against hyperlipidaemia caused by ageing.

Amalaki fruit is high in vitamin C and hydrolysable tannins with a low molecular weight. Amalaki becomes a good source of antioxidants as a result of these contents. It also decreased low-density lipoprotein, total cholesterol, and triglyceride levels while increasing the synthesis of nitric oxide, a vasodilator.²

Saindhava lavana (Rock salt)

It prevents atherosclerosis pathogenesis due to its dissolving and disintegrating activities. It is an antioxidant that stimulates blood circulation, which aids in the removal of harmful minerals and refined salt deposits.²

Hingu (*Ferula asafoetida* Regel)

Frogs were given a water extract of dried gum resin, which was active on the vein and had a vasodilatation effect.

Anticoagulant action was found in water extracts of the gum given intravenously to dogs and rats at various doses.

Ether extracts of the dried gum and gum resin, given orally to 10 healthy participants who were fed 100 gm of butter to induce alimentary hyperlipidaemia, were found to have potent fibrinolytic activity.²

Goghrita (Cow Ghee/ Clarified butter)

Cow ghee intake increases only the amount of high-density lipoprotein [HDL], not the low-density lipoprotein [LDL]. This is because cow ghee can increase the range of fat-soluble vitamins, such as vitamin E, and decrease LDL oxidation. There will be no change in the lipid profile due to this. These increase the likelihood of avoiding atherosclerosis, stroke, or heart attack.²

CONCLUSION

Ayurveda provides descriptions of ahara, vihara, dinacharya, ritucharya, yoga, and rasayana, all of which are crucial in preventing and treating heart conditions. The above-mentioned cardioprotective drugs play a critical role in cardiovascular diseases. In Ayurveda, prevention and management are accomplished. Additionally, Ayurvedic treatments are both secure and efficient.

Other Plants used for the treatment of various Hridrogas^{6,7}

Name of Medicinal Plant	Mechanism of Action
Rasona - <i>Allium sativum</i>	The main bioactive compound, allicin, is responsible for the beneficial effects on the cardiovascular system, such as reduction of atherosclerosis, antihyperlipidemic effect, inhibition of platelet aggregation, lowering of blood pressure, significant anti-arrhythmic effect, and prevention of oxidative stress and associated ultra-structural changes caused by myocardial ischemic reperfusion injury.
Gokshura - <i>Tribulus terrestris</i>	Gokshura has diuretic qualities, increases nitric oxide production from the endothelium and nerve terminals, relaxes smooth muscles, and promotes angiotensin-converting enzyme (ACE) inhibition, all of which help to lower blood pressure. It contains saponin, which dilates coronary arteries and improves coronary circulation. Hridaya churna (a combination of Gokshura, Arjuna, and Sthira) is a popular treatment for ischemic heart disease in our cardiology OPD. Gokshura is one of the primary ingredients.
Arjuna - <i>Terminalia arjuna</i>	Arjuna enhances cardiac muscle function, which in turn promotes heart-pumping activity. Bark powder decoction was found to be more beneficial in hypertension than in congestive heart disease. Studies have shown that <i>Terminalia arjuna</i> has benefits in treating coronary artery disease, heart failure, and hypercholesterolemia, with the cardioprotective action attributed to its free radical scavenging capacity.
Amalaki - <i>Embilica officinalis</i>	Amalaki, one of the most efficient rasayana, is said to help with respiratory, cardiovascular, and rheumatic disorders, as well as diabetes, according to Ayurveda. Several experimental research has revealed that Amalaki has antioxidant and hypolipidemic properties. It also has substantial anti-atherosclerosis and anti-coronary artery disease properties. The medicine contains a considerable level of natural vitamin C and cytokine-like compounds known as zeatin, Z-riboside, Z-nucleotide, flavonoids, pectin, and 30% tannins. In investigations, flavonoids and pectin have been shown to lower serum cholesterol levels in humans ¹¹ .
Guggulu - <i>Commiphora mukul</i>	Guggulu has a better hyperlipidaemic effect due to the presence of resin, and it has both a Kapha and a Medohara effect, according to Ayurvedic scriptures. Various research has shown that Sudha Guggulu and other Ayurvedic formulations, including Amritadi Yoga, Navaka Guggulu, Pushkara Guggulu, and Vyoshadi Guggulu have a beneficial influence on hyperlipidaemia. Pushkara guggulu significantly reduced serum lipid levels, pericardial discomfort, and dyspnoea. Obesity and blood cholesterol levels were reduced when combining Vyoshadi Guggulu and Haritaki churna.
Triphala - Combination of <i>Embilica officinalis</i> , <i>Terminalia chebula</i> , <i>Terminalia bellirica</i>	Triphala is used to treat atherosclerosis and diabetes, as well as to decrease cholesterol levels. According to preliminary studies, it appears to lower total serum cholesterol, LDL, and triglycerides without changing HDL levels. It has the potential to help with atherosclerosis.
Cinnamon - <i>Cinnamomum verum</i>	According to preliminary studies, the cinnamon bark ingredient methyl-hydroxy chalcone polymer (MHCP) may increase insulin sensitivity. Cinnamon has been demonstrated to lower blood glucose levels. Cinnamon consumption of 1, 3, or 6 gm per day lowered serum glucose, triglyceride, LDL cholesterol, and total cholesterol in persons with type 2 diabetes, according to a study. This suggests that including cinnamon in one's diet or taking it as a supplement for patients with type 2 diabetes may lower diabetes-related risk factors and, as a result, cardiovascular disease.
Punarnava - <i>Boerhavia diffusa</i>	Punarnava is a natural antioxidant that has a lot of potentials. For a fortnight, two months, six months, or a year, a person who consumes 20 gm of fresh Punarnava paste with milk is revitalised. Researchers have also conducted phytochemical screening and in vitro bioactivities of extracts from the aerial portion of <i>Boerhavia diffusa</i> . Phytoconstituents were abundant in the plant extracts. The antioxidant, thrombolytic, and cytotoxic activities of the methanol extract of <i>B.diffusa</i> were higher than those of n-hexane and ethyl acetate extracts. The antioxidant activity was the most significant of the bioactivities.
Trikatu - Combination containing, <i>Piper longum</i> (fruit), <i>Piper nigrum</i> (fruit) and <i>Zingiber officinale</i> rhizome).	Trikatu affects body weight, blood and tissue (aortic, cardiac, and hepatic) lipids-total, free, and esterified cholesterol, low-density lipoprotein (LDL) and high-density lipoprotein (HDL) cholesterol, triglycerides, and phospholipids-as well as the atherogenic index. Trikatu has been reported to minimise the risk of hyperlipidaemia and atherosclerosis by lowering triglycerides and LDL cholesterol while increasing HDL cholesterol. As a result, Trikatu can be utilised as a powerful hyperlipidaemic medication that can help to prevent atherosclerosis caused by a high-fat diet.
Badi Elaichi - <i>Amomum subulatum</i> Roxb	The effect of cardamom fruit powder (seeds with pericarp) on various cardiovascular risk variables in individuals with ischemic heart disease was studied. Dietary supplementation with increased cardamom improves lipid profile, fibrinolytic activity, and overall antioxidant status in individuals with ischemic heart disease.

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