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Case Study

MANAGEMENT OF TRIDOSHAJA HRIDROGA WITH RESPECT TO SPECTRUM OF CORONARY ARTERY DISEASE WITH DEEPANA-PACHANA, VIRECHANA, HRIDBASTI AND RASAYANA YOGAS

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ABSTRACT

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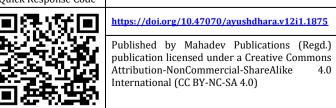
Tridoshaja Hridroga, Coronary artery disease, Virechana, Hridbasti, Hridyarasayana.

Coronary Artery Disease (CAD) is a leading cause of premature death. The incidence of cardiac disease is increasing in an alarming rate in our society due to sedentary lifestyle, faulty diet and mechanical life as an impact of western culture. One in 4 deaths in India is due to CAD. Objective: To assess the efficacy of Deepana-pachana, Virechana, Hridbasti and Rasayana-prayaga in spectrums of CAD. Methodology: Prospective, randomised, open labelled modern controlled clinical experimental study. Diagnosed cases of CAD with conditions were treated with Deepana-pachana with Shaddharana Yoga, Mrudu-snehapana with Punarnavadi Taila followed by Virechana, Hridbasti with Punarnavadi Taila, and Rasayana Yoga like Shilajatuguggulu swarnamakshika Rasayana and Arjuna pushakara moola chatushparni Churna in above said spectrum of CAD. Result: Subjective parameters like Hridshoola, Swasavarodha, etc and objective parameters like lipid profile, blood pressure, homocysteine, ECG and ECHO have shown improvement as shown in the table. Conclusion: Coronary artery disease is a clinical syndrome in which atherosclerotic coronary arteries are responsible for inability of cardiac muscle to pump the blood throughout the body and is a leading cause of MI, ACS, heart failure, and other complications. In this cases series encouraging results were reported. This treatment protocol can be adopted in CAD with respect to Kapha-vata-pradhana Tridoshaja Hridroga in routine Ayurvedic practice.

INTRODUCTION

Coronary Artery Disease is a pathological process characterized by obstructive or nonobstructive (NO) plaque accumulation. Two facets of CAD have been well recognized and traditionally described as stable and unstable CAD^[1]. The disease can have long, stable periods or become unstable due to an acute atherothrombotic event. CAD taken as Hridroga^[2] Sannipataja with Kapha Vataja predominance and it occurs due to Pranavaha-Rasavaha Srotodushti. The causative factor can be understood as *Agni-mandya* (poor metabolism) leading to Ama which is then reflected in Dhatvagni leading to its Mandyatva which impairs Dhatu-parinama.

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Thus, it leads to Rasa Dushti and which may in turn lead to Upalepa (coating), Sanga (obstruction) in Rasavaha-srotas (vessels) and Dasha Dhamani which hampers Vyana Vayu leading to Hridroga. This disease results from affection of the coronary arteries by all the three Doshas. The increased and vitiated Vata gives rise to dryness, roughness, thinness of the coronary vessels and degenerative changes. Increased or vitiated Pitta gives rise to chronic inflammatory changes in the coronary vessels. Increased or vitiated Kapha results in thickening of the coronary vessels. In spite of research and development in cardiology there is no satisfactory treatment in contemporary science and patients often search for alternate treatment instead of bypass surgery and stenting. Hence there is scope for research in Ayurveda.

MATERIALS AND METHODS

Prospective, randomised, open labelled modern controlled clinical experimental study.

Case 1

Male, diabetic and hypertensive patient of 54 yrs, with complaints of *Arohana Hridshoola, Arohana Ayasa, Bhrama, Shwasa.*

ECG shows ST depression,

ECHO showed with LVEF of 36%,

Raised lipid profile and homocysteine level.

Angiogram- CAD

Case 2

Male, diabetic and hypertensive patient of 38 yrs, with complaints of *Hridshoola* on exertion, *Arohana Ayasa*, occasionally *Padashotha*.

ECG shows ST depression with bradycardia.

ECHO – IHD with Reduced LVEF – 30%.

Raised lipid profile and homocysteine level.

Angiogram – CAD.

Case 3: Female, hypertension patient aged about 53yrs, with chief complaints exertional *Hridshoola*, *Arohana Ayasa*.

OBSERVATIONS AND RESULTS

ECG showed ST depression with bradycardia.

ECHO showed IHD, EF- 37%.

Intervention

- 1. *Shaddharayoga*^[3] 500mg 2BD, with *Ushnajala* for 5 days.
- 2. *Mrudu-snehapana* with *Punarnavadi taila*^[4] for 4 days i.e., day 1– 30ml, remaining 3 days 50ml/day. *Vishrama Kaala- Abhyanga* with *Punarnavadi taila* for 3 days.

Virechana with *Gandharvahastadi* castor oil^[5] 50ml.

- 3. *Hridbasti*^[5] with *Punarnavadi taila* for 15 days with intermittent gap of 7 days.
- 4. Along with *Hridbasti Rasayana Prayoga Shilajatu guggulu swanamakshika Rasayana*^[6,7,8] 500mg 2TID

Arjunapushkara moolachatushparni Rasayana^[9-11] Yoga 1 TID.

Investigations	Subject 1		Subject 2		Subject 3	
	BT	AF	BT	AF	BT	AF
Blood pressure	150/100	130/90	130/80	120/80	160/90	120/70
Total cholesterol	220	169	171	151	193	164
Triglyceride	499	246	148	139	212	190
HDL	36	44	52	57	40	54
LDL	76.2	85	82	70	91	84
Homocysteine	16	10	6	4	7	5
ECG	ST depression	Isoelectric ST segment	ST depression, with bradycardia	ST depression, no Bradycardia	ST depression, with bradycardia	ST depression, no Bradycardia
EF%	36	42	30	35	37	40

Assessment of ECG, ECHO, blood pressure, homocysteine, lipid profile parameters are important while diagnosing and treating CAD. Cholesterol plaque results in hardening or narrowing of coronary arteries, leads to improper blood supply to myocardium, causing myocardial necrosis and MI. Shaddharana Yoga improves the status of Agni, possesses qualities like Katu Tikta Kashaya Rasa, Laghu Ruksha Guna, Ushna Veerya, Katu Vipaka, Kapha Vatahara and Deepana-pachana. These Guna of Shaddharana Yoga helps to remove Leena Dosha from Dhatu, Medohara. *Virechana* improves *Aqni*, it regulates the intake of raw material for the production of lipids, and it also improves the functioning of liver there by regulating the endogenous production of VLDL. Rasayana Yoga contains Shilajatu, Guggulu, Swarnamakshika having properties like anti-hyperlipidemic property antioxidant, anti-platelet aggregation action. Elevated homocysteine promotes atherosclerosis through increased oxidant stress, impaired endothelial function and induction of thrombosis^[13] and also in some

studies it is reported that homocysteine reduces plasma HDL cholesterol concentration by inhibiting hepatic synthesis of apolipoprotein^[12]. As the Shaddharana Yoga which has properties like Laghu, Ushna, Teekshna, Amapachana thus reduces the process of atherosclerosis and Virechana and Rasayana due to Srotoshodhana, removes the oxidative stress thus reducing the further damage of endothelium by slowing down the progress of atherosclerosis. The Rasayana Yoga which reduces the oxidative stress, act as immune-modulator hence reduces homocysteine level. Administration of Shaddharana Yoga and Virechana which corrects the Pitta and Vata Dushti and removes the Avarana in Dhamani there by resulting in proper supply of blood to the myocardium through the coronary arteries. Hence, this enhances the circulation to heart muscle and improves the EF. The *Hridbasti* helps in vasodilation and improves the tonicity of coronary arteries and increases the LVEF. Rasayana Yoga which contains *Shilajatu* and *Guggulu* which does Kapha Meda-nashana, Sroto-shodhana and Rasayana

action of *Swarnamakshika* improves arterial tonicity thus improves the circulation to heart and improver LV function and EF there by improves the pumping action of heart.

Mode of Action of Shaddharana Yoga

The Shaddharana yoga is a poly-herbal formulation containing 6 ingredients such as *Chitraka*, Indrayava, Patha, Katuka, Ativisha and Abhava. All drugs should be taken in equal quantity, i.e., 1 Dharana (3.43gm). In this study, it is administered to the patient at the dose of 1gm TID, BF with warm water for 5 days before Snehapana. Chitraka belong to Deepaneeya, Shoola-prashamana, Lekhaneeya gana and also has anti-inflammatory action, anti-hyperlipidemic action by significant reduction in serum total cholesterol. LDL and triglyceride level, anti- coagulation action by preventing the platelet adhesion. Patha and Indrayavaby Katu Tikta Rasa, Katu Vipaka acts as Ama-doshahara and also antioxidant and anti-inflammatory. Katuki belongs to Lekhaneeya, Bhedhaneeya, Deepana-Pachana Gana act as Amahara, Agni Deepana, Medohara and is also Hrdya. It also has antihyperlipidemic action by reducing LDL, HDL, VLDL. Ativisha by its Tikta Katu Rasa, Laghu-Ruksha Guna, Deepaneeya, Pachaneeya and Sarva-doshahara and its anti-hyperlipidemic effect is clinically established (proven). *Abhava*^[18] or *Haritaki* has cardio-protective activity by preventing the myocardial damage, hypolipidemia and hypocholesteremia and antiinflammatory activity. The overall effect of these drugs can be taken as Kapha-vatahara, Deepana, Pachana, Vatanulomana. It does Rasaprasadana, Medohara, Srotoshodhana, Lekhana and Shoola-prashamana. In the stage of angina, we can use Shaddharana Yoga to rule out either it is stable angina or unstable angina, as Shaddharana Yoga is indicated in Amashayagata vata. If *Hridshoola* is due to gastric origin it does *Deepana*, Pachana, Vatanulomana and Hridshoolahara,

Virechana

Teekshna Shodhana is not advisable in subjects of hypertension and CAD due to the possibility of acute emergencies. Mrudu Virechana in CAD can be helpful due to the involvement of Rasa and Rakta, Pitta, Meda Dhatu. Correction of Agni inhibits the formation of Sama Meda and reduces the phenomena of Dhamani Pratichaya. Virechana also decreases the Drava Guna of Rakta Pitta and hampers Vriddhi. Through Vatanulomana it corrects the actions of Vata. Virechana karma clears the Margavarodha (obstruction), eliminates the morbid Dosha from Rakta and regulates the activity and movement of Vata. Thus, it controls the hypertension. The evacuation of the fluid from Rasa and Rakta by Virechana is direct process that leads to decrease in fluid volume hence

reduce the BP, it also improves the functioning of liver there by regulates the endogenous production of VLDL. *Hridbasti*

By applying *Hridva Basti* to the chest region, a constant heat is given to the particular area for a fixed time which regulates the function of Vvana Vavu. Ultimately gives result in proper Rasa Samvahana, pacifies the vitiated Vata Dosha and relieves the hypertension symptoms. IHD and are those pathological conditions, in which there is hampered blood supply to body and heart due to vessel constriction. In CAD the pathway becomes narrow due to atherosclerosis which causes improper blood supply to heart. In this situation the Hridya Basti correct the flow of blood to heart by dilating the blood vessels. In the same way, Hridva Basti can be done unstable angina. The Hridya Basti in this condition gives beneficial result by nourishing the cardiac muscle through proper blood supply. Similarly in myocardial dystrophy the Hridya Basti helps the condition by strengthening the cardiac muscle. Hridva Basti dilates the vessels by heating effect. Hridbasti with Punarnavadi Taila pacifies aggravated Vata Dosha in the Ura-pradesha, Vedana Sthapana, improves blood circulation, nourishes and strengthens the cardiac muscles. Thus, it rejuvenates the Hridava.

Mode of Action of Shilajatuguggulu Swarna makshika Rasayana

Clinical studies of on subjects hypercholesteremia associated with obesity, ischemic heart disease, hypertension, diabetes, shared a fall in total serum cholesterol when treated with Guggulu. Guggulu extracts have been reported to possess antioxidant properties possibly mediating to protection against myocardial necrosis. Guggulolipid has been found to inhibit platelet aggregation and increases fibrinolysis. Suddha Guggulu administered subjects besides improvement in anti-inflammatory and properties, also showed analgesic that oral administration of guggulosterone compounds signifies prevented damage to the cardiovascular apparatus as understood by the process of reversal of blood flow and biochemical cardiac parameters. Shilajatu has Ushna Veerya, Katu Rasa gives stimulation to the heart function. So Shilajatu acts as Hridya. Cardiac tonic are drugs which improves the action of heart by increasing the tone and nutrition of the cardiac muscle, whereas cardiac stimulants are used as an emergency measure to tide over a critical period. These may act either directly on the muscle, possibly by giving rest i.e. increasing the period of diastole and improving nutrition through better coronary circulation and improving the general health and condition of blood and Shilajatu was found to lower sr. cholesterol, liver, cholesterol, triglyceride. Swarnamakshika acts as

Tridoshahara, Rasayana. It contains lysyl oxidase a copper dependent metaloenzyme helps in crosslinking arterial collagen and elastin there by rebuild and maintains cardiac tissue. SOD also present in cardiac tissue which is an anti-oxidant promotes cardiovascular health. It has *Madhura Tikta Rasa, Katu Vipaka, Kleda Medo Upa-shoshana* action of *Swarnamakshika* makes it *Pramehahara.* Copper is proved to reduce plasminogen activator inhibitor type 1 which is one of the risks of atherosclerosis.

Mode of Action of Arjunapushkara moola chatushparni Rasayana

Stem bark of Arjuna possesses diuretic, inotropic, and chronotropic properties. The aqueous extract has demonstrated to cause an increase in the coronary flow. The aqueous extract of *Arjuna* increases the force of contraction of cardiac muscle. Dried. pulverized bark has been shown to augment endogenous antioxidant compounds of heart and prevent oxidative stress associated with ischemicreperfusion injury of the heart. Arjuna has also been found to possess prostaglandin E2-like activity with vasodilatation and hypotension. coronary *Pushkaramoola* helps alleviate chest pain and discomfort associated with heart diseases. Hridaya Kshaya (heart weakness): The herb strengthens the heart and improves cardiac function. In *Raktavaha* Srotas Vikara (blood vessel disorders) Pushkaramoola helps manage conditions like hypertension, atherosclerosis, varicose veins and also in Vata-Vikara, it alleviates Vata-related symptoms like palpitations, anxiety, and stress. Chatushparni Churna^[11] is not mentioned in classical text. It is taken from Anubhuta Yoga. It contains four drugs such as Shalaparni, Prishnaparni, Mudgaparni and Mashaparni. It is primarily used for the purpose of *Rasayana*. In general, *Chatushparni* or *Parnini-chatushka* acts as *Shothahara*, Hridva, Balva, Tridoshahara, Mutrala and Rasavana effects. It also acts as Vedanasthapana, Shothahara, Shwasaghna. Due to the action of Balya, it also improves pumping action of heart. By vasodilatation, anti-arrhythmic activity, maintenance of HDL and lowering LDL effects, reduces the load on heart and improves the cardiac muscle and vessel nutrition.

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Chatushparni is anti-oxidant, anti-hypertrophic and cardioprotective in nature which is essential in treating.

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