

## Management of Cardiac Emergencies through Ayurveda

**Dr.Dinesh R. Bahirwad** MD Ayurved

Assistant Professor; Department of Agad Tantra  
at S.S.V.P Ayurved College & Research Institute Hatta,  
Tq Basmat, Dist- Hingoli;  
Email: dineshbahirwad1990@gmail.com.

### Abstract:

*Myocardial Infarction is one of the emergencies in Cardiac. Most of the time it may be lethal. Role of Ayurved in certain conditions till date has remained. Ayurveda described that Vata and Rakta is the principle participant to be vitiated, and hence pacifying Vata and Rakta with properly acting medicines is required for management of cardiac emergency. Shuddhu Hingu and Shadadharan Yog (Sushrut samhita) are drugs which can soothe Vata and Rakta immediately and thus be the drug of choice. It is required to be studied with details and experimental data to prove utility of Ayurveda in the field of cardiac emergency.*

### Introduction:

Cardiac emergencies include myocardial infarction, complete heart block, heart block, bundle branch block, LBBB, RBBB, Triple-vessel disease (TVD), VSD etc. Due to hypertension, diabetes and Metabolic disorder leads to many cardiac disorders i.e. MI, Coronary artery blockages extra. It has been observed that one out of every four patient receiving emergency in cardiac. This shows the graveness of the disease.

There is two type of classification one is low risk and second is high risk, usually low risk patient has better chances of survival than the high-risk factors. Overweight, metabolic illness like diabetes mellitus, Hypertension, stressful life style, family history, are identified as high-risk factors for the disease. It is believed that such condition needs to be attended only by modern medicines, but Ayurved has also a key role to play in such a critical condition. Modern investigations are helpful in Ayurvedic management and improve patient's emergency condition.

Charaka describes cardiac emergencies. In most of cases Charaka described its management. Susruta whilst describing Hrida Rogas used the word Hridgraha which is very near meaning to heart block. Here an attempt is made to provide knowledge

regarding the condition and its ayurvedic management.

### Ayurvedic Approach to Disease:

In Myocardial infarction most common is occlusion in any of the coronary vessels; this may be due to dyslipidemia, atherosclerosis, arteriosclerosis, thrombus, embolus, or plaque. Decrease in blood supply to Myocardium damages cardiac muscle. If the blood supply is not restored or if the condition remains untreated it leads to permanent changes in myocardium. It is characterized by typically radiating chest pain to left arm & neck, shortness of breath (sign of pranavaha sroto dusti) [1], vomiting and/or nausea, sweating, palpitations, compression in chest, etc.

Heart diseases in Ayurveda are of five types, viz. Vataj Hrid Roga (angina like pain dominant), Pittaja Hrid Roga (suppurating or inflammatory condition involving heart or nearby), Kafaja Hrid Roga (Organic disorders), Tridoshaja Hrid Roga and Krimija Hrid Roga (may be interpreted as Valvular heart disease) [2,3]. It is believed that Hridaya is embryonically made up from Prasada Bhaga of Shonita (Rakta) and Kapha [4]. Thus, the first group of heart disease is due to Aprasada or derangement in these components. Shonita Aprasada means qualitative and quantitative changes in Rakta, derangement or vitiation of Rakta with Doshas. Rasa is considered as circulating medium and hence the

vitiation in the quality of Rasa also accounts to the changes in the quality of Rakta and thus produces disease for instance hyperlipidemia, hypercholestermia, etc.

Susruta in the samprapti of Hridroga has specially mentioned Rasadushti, and Charaka enlisted Hrid Roga in Rasa Pradoshaja Vikaras. Vitiation of Rakta is characterized by distinct, clear, and frothy in case of Vata vitiation, yellowing, warmth, delaying in coagulation in case of Pitta, increased viscosity, fiber like appearance, in case of Kapha [5]. In case of Vata vitiation, vitiated Vata imparts its qualities over Shira & Dhamni, leading to sclerosis in these organs, due to sclerosis and hardening of Arteries, blood flow is affected, Kapha responsible for the correcting and imparting unctuousness and smoothness in body, localizes in the area (Ek Deshya Vriddhi), tries to repair the sclerosis, but due to heaviness and vitiation of Vata, gati of Kapha is affected and remains even afterwards, making the area of lowered vitality and due its cohesive and adhesive actions it catches other Kapha Vargiya Dravyas, thus blocking the pathway and decreases lumen. This produces Sanga Janya Avarana, Vyan Vayu is thus vitiated. The vitiation of Rakta means that biochemical parameters of the blood are deranged, may be hypercholesterolemia, hypertriglyceridemia, dyslipidemia, changes in coagulation factors etc.

The second group of disease is due to vitiation in qualities of Kapha. Kapha & Rakta makes the structural frame work of heart. Thus, due to vitiation of Kapha leads to the disease that is presented by any structural abnormalities. Usually, congenital heart disease may be included in this group like, VSD, ASD, etc. The examples of structural changes are

- 1) Inflammatory changes,
- 2) Hypertrophy,
- 3) dilation, etc.

Third group of disease is due to vitiation of Vyan Vayu. Vyan Vayu is responsible for imparting movement in Rasa Dhatu. Cardiac activity occurs from generation of an electrical impulse for a specialized tissue of SA node, electrical impulse travels through AV node, right & left bundle of his, purkin's fibers which in turn contracts heart muscle so as to throw (Vikshepa) blood into aorta for circulation. Some diseases are related to

malformation of the Gati or transmission of viz. RBBB, LBBB, auricular flutter, fibrillation, etc.

Fourth group of heart disease are not real heart disease, but according to Ayurveda they have their seat in Hridya like Apasmara, Unmad, etc. These are not associated directly with heart, but Ayurveda believes Hridya to be the Moola (root) of Indriya Vaha Srotos, Vata

Vaha Srotos, Manovaha Srotos, etc. These diseases originate from the vitiation of the Srotos and thus are considered here.

Fifth group of disease are not cardiac problems, but they are manifested in nearby regions and hence the name includes Hrid, like Hridrava, Hridaya, etc.

The above details are about Ayurvedic concept of Hrid Roga (heart disease). MI as discussed earlier is discussed by both the scholars of Ayurved, but Charaka has not dealt the condition with the description of Hrid Roga, but described elsewhere, which suggests that the emergency approach. Susruta uses the word, Hrid Badha. It is opined in Susruta Samhita that vitiated Rasa leads to Hrid Roga [6]. Rasa is the circulating medium according to Susruta [7]. Vyan Vayu takes this Rasa to whole body including heart [8-11]. Vitiation in Rasa means that the first nutrient fluid is vitiated, this is usually the effect of Ama. Ama is the unmetabolized or intermediate product of metabolism, resulting due to compromised activity of Agni (enzymes & hormones) at the three different levels i.e., Jathragni (Gastric digestion), Bhootagni (digestion & elimination for the conversion of constituent material into body accessible form) and Dhatvagni (metabolism at the level of body tissues). The impaired metabolic functioning fails to metabolize completely, thus producing intermediate compounds which can't be utilized by body tissues, moreover they impart their characteristics features on the tissues and it leads to hriday rog. Here one thing is also to be clarified that Rasa is circulating medium according to Ayurveda, whereas Rakta which is interpreted as blood corpuscles are mere floating in the media of Rasa and not its component (Rakta carries out function of Jeevana, which means to give livelihood, this can be very well be understood by studying the functions of these blood components). Changes in biochemical factors, increase in levels of

homocysteine, etc may be correlated with that of Rasa Dusti. Homocysteine is considered to be risk factor for cardiovascular disease [12].

Concept of cardiogenic emergency is described by Charaka in Indriya 6, Chikitsa 26 & siddhi 9. It is described that in Indriya Sthana 6, that patient certainly dies due to Hrid Shoola. It is usually presented with symptoms of compression type of chest pain, gastric motility is grossly disturbed due to circulatory disturbances i.e., food remains in undigested form for prolonged period, rapid decrease in physical strength (Bala decreases) & excessive thirst (Trishna) [13]. This description of Hrid Shoola is very much similar to massive cardiac arrest and mostly encountered in Anterior Wall Infarct. Anterior Wall comprises of approximately 70% of heart muscles. Thus, if the anterior wall is affected, usually it is having fatal outcome. It is clearly mentioned that physician shouldn't attend the patient as it is certainly leading to death. Symptoms mentioned above are also narrated in Udavarta, it is the second place where treatise mentions the disease. Udavarta is inverse movement of Vata due to willful suppression of Urges or pathologically suppression of natural movement due to Dosha vitiation, usually Vayu. Vayu is vitiated due two factors viz. Marga Avarana (Occlusion) or Dhatu Kshya [14].

The vitiation in case of forceful suppression of Urges leads to immediate vitiation of Vayu, that further moves up towards settles in tissues of lowered vitality, further vitiates Pitta, Kapha and then the Dhatus, leading to disease manifestation [15]. Vata vitiation here may be interpreted as occlusion of artery, thus disturbing cardiac muscle activity is due to Margavarodha Janya Vyan Vayu Dusti. This condition in most of the cases may be very well be managed by Ayurvedic medicines. It is presented by the symptoms of Doshabhigata Hrid Roga (Abhigata means trauma which may be interpreted as Myocardial Infarction). It is characterized by Stambha, Moha (loss of consciousness), Shvasa (Dyspnea on exertion), Hrid Shoola (chest pain), etc [16]. Factors that precipitate and causes heart disease includes Ati Vyayama (excessive exertion), Tikshna and Ati Virechana and Basti (improper uses of Virechana and Basti, it is also observed in abuse of purgatives) Chinta (Tension), Bhaya (fear), Trasa (Stress), - disturbance in mental faculty, leading non-

adjustment to the stressful situations leading to vitiation in Manovaha Srotos, further it vitiates Vata and Pitta [17], Chardi Vega Rodha (Udan Vayu Rodha), excessive Karshana (Karshana in dhatu) and Abhigata (Sharir and/or Manobhigata). In Siddhi Sthana Charaka describes about in case of Abhigata to Hridya i.e., in MI. It is characterized by Kasa (coughing), Shvaas (dyspnea due to excursion), Bala Kshya (loss of strength), Kantho Sosha (dryness in throat region), Karshana, Jihvanirghama (tongue outward- so as to increase the oxygen supply to body), Mukha - Talu Sosha (dryness in mouth & palate - excessive thirst), Apasmara (convulsion or fits - usually these are due to compensated blood supply to brain leading to production of convulsions, Ayurved believes Apasmara to be resulting from the vitiation of Mano Buddhi Vaha Srotos, Hridya to be the seat of the Srotos thus in Hrid Abhigata, leads to the symptoms of Apasmara as well as Unmad. It is more commonly seen if the cause of the Hrid Abhigata is thrombus or embolus) [18], Unmad (Insanity), Pralap (delirium), Chit Nasha (loss of consciousness) [19].

It is required that the patient must be examined by the diagnostic measures so as the diagnosis is confirmed & management may be carried out. As best known today, ECG investigation is quite valuable STT changes i.e. ST-segment elevation (with compatible history, it is having specificity of 91%, sensitivity of 46%), in many cases changes in ECG are not evident and may appear normal. Serum markers like CPK-MB, Troponin T & I, Myoglobin, Glycogen phosphorylase isoenzyme BB, may be done. Even the simplest ESR also provides useful information for diagnosing the condition. Other investigations include angiography, histopathology, etc.

### **Ayurvedic Principle for Managing Cardiac Emergency:**

It is usually believed that, if the patient is presented with these symptoms, he is subjected to reference to the ICU. Here an attempt is made to look out for the Ayurvedic management for the condition. It is evident from the text the condition is narrated with almost all the details Pathogenesis, Symptoms and the management. Thus, the utility is discussed here.

As discussed above the condition is primarily due to vitiation off Vayu, usually due to Avarana or obstruction so the first and foremost requirement is to correct Avarana or obstruction. It is required because, before eliminating Avarana, the condition will be not be corrected, vitiation of Vayu will remain and thus may create complications [24]. The second goal management is to protect heart, as the localization of Doshas is in the heart, thus the drugs and management needed for the same may be employed [20]. Hridya drug is the drug of choice. Moreover, drugs that are increasing Ojas, Srotas cleaners and rejuvenators are of choice. It is also required to indulge Prasm (mental peace), and Gyana (knowledge) [21].

**Drug Management:**

Drug management of the cardiac emergencies may be summarized as follows:

1. Shadadharan yog+ Hingu churna+Lavana+ Amla ras dravya
2. Shadadharan yog + Hingu churna
3. Hingu churna+Lavana+Gokshru Panchamula
4. Shadadharan yog+Hingu churna+Bilvadi Panchamula
6. Shadadharan yog+ Haritaki+Nagar+puskarmula+hibera+hingu
7. Puskarmula+shunthi+Shati+Kshra+lavana with sarpi
8. Decoction of puskarmula, Matulung, Palasha, Shati, Shunthi, Kshra, Vacha, Yavaani [22]

After the emergency condition other Hridya, and Ojus increasers may be prescribed like Ashwagandha, Shatavari, Loha Bhasma, Abhakra Bhsma, Prabhakar, Swarna Bhasma, etc. Paachan and Anulomana if included with the drugs helps in correcting Vata activity and decreases chances of reoccurrence of the condition like Shankhavati, Hingvastak Churna, Shivakshara Churna, etc.

Meditation and pacification are necessary in post MI, IHD. It may be done by doing meditation; it is evident from the studies that meditation has positive effects on general heath as well as heart. It is observed that in one study that patients receiving and doing Yogic and meditative activities compensated well after CABG and lesser chances of devolving the occlusion in coronary vessels. Virechana and Raktamoksha are the methods of cleansing. This is to

be utilized after emergency i.e., MI. Basti may also be useful for cleansing the Srotos (micro channels of the body).

It is also known that heart has compensative mechanism i.e., collaterals are formed in cases of blockage in cardiac vessels. If any medicine can restore the blood supply by this means, and if the cardiac activity is restored then one can be saved from going to costly, painful and life-threatening surgery may be prevented.

Here it is attempted to understood role of Ayurveda in cardiac emergency also. This article is based on theoretical evidences, which may be examined by doing experimental and clinical trials.

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