

Management of Cardiac Emergencies in Ayurveda – A Clinico-literary Approach

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Abstract

Cardiac emergencies in most of the cases are fatal. Role of Ayurved in certain condition till date has remained to a limit only, but it has been observed in the texts that these types of conditions can very well be managed on Ayurvedic lines. Most common cardiac emergency is Myocardial Infarction, an occlusive disorder, leading to permanent damage to heart muscles.

All three treatises of Ayurveda described that Vata is the principal Dosha to be vitiated, and hence pacifying Vata with promptly acting medicines is required for managing the condition. Shuddhu Hingu is one drug which can pacify Vata 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 critical care management.

Introduction

Myocardial infarction also known as heart attack is one of the major cardiac emergency met. Other Cardiac emergencies include complete heart block, heart block, bundle branch block, etc. MI results of the occlusive pathologies, usually in coronary artery are blocked leading to insufficient blood and oxygen leading to MI. It is also one of the major complications of diabetes mellitus and hypertension, where micro-angiopathy and macro angiopathy changes leading to vascular changes, thus leading to complete or partial blocking in arteries. It has been observed that one out of every four patient receiving emergency cardiac care only survives. This shows the graveness of the disease. Other studies opined that prognosis in such cases are variable and depends on various factors, usually low risk patient have better chances of survival than the high risk factors. Over weight, metabolic illness like diabetes mellitus, Hypertension, stressful life style, positive 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. Here one thing is to be clarified that under no condition patient is to be made experimental guinea pig, but with due concentration and understanding the condition Ayurvedic management must be undertaken.

Modern investigative means and methods are useful if employed with Ayurvedic management can help in managing the condition efficiently. Charaka describes cardiac emergencies at three different places with different outcomes, in one occasion only Charaka referred it is fatal, but in rest of the cases management is described. 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. One such work on MI has been conducted at IPGT&RA, Jamnagar, it is for the sake of justifying the utility of the paper.

Ayurvedic Approach to Disease

As mentioned earlier Myocardial infarction is result of interruption of blood supply to the part of heart. The most common is occlusion in any of the coronary vessels; this may be due to dyslipidemia, atherosclerosis, arteriosclerosis, thrombus, embolus, or plaque. Macrophages and lipids are identified for the atherosclerotic changes in cardiac vessels. 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]. Dr. C. P. Shukla, an eminent scholar of Ayurveda, opines that there is another method of classifying heart diseases which is having more clinical importance, and in his practice and research he is using the same. Heart disease may be classified as 1) Shonita Aprasadaja Hrid Roga, 2) Kapha Aprasadaja Hrid Roga, 3) Vyan Vikriti Janya Hrid Roga (On the basis of the functional aspect, the function of heart takes place due to Vyan Vayu), 4) Diseases of Vata, Sangya, Indriya, Prana Vaha Srotaos 5) Diseases not primarily originated or localized in heart but are near to heart like Hridrava, Hridlasha, Hriddaha etc.

The said classification is based on the changes in Ayurvedic Anatomy and Physiology. 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, hypercholstermia, etc. Susruta in the samprapti of Hridroga has specially mentioned

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Rasadushti, and Charaka enlisted Hrid Roga in Rasa Pradoshaja Vikaras. Vitiating of Rakta is characterized by distinct, clear, and frothy in case of Vata vitiating, yellowing, warmth, delaying in coagulation in case of Pitta, increased viscosity, fiber like appearance, in case of Kapha [5]. In case of Vata vitiating, vitiating 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 vitiating 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 vitiating. The vitiating 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 vitiating in qualities of Kapha. Kapha & Rakta makes the structural frame work of heart. Thus due to vitiating 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 vitiating 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 vitiating 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, Hrilasha, 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 else where, which suggests that the emergency approach. Susruta uses the word Hrid Badha. It is opined in Susruta Samhita that vitiating 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]. Vitiating in Rasa means that the first nutrient fluid is vitiating, 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 also produce hindrance in their activities

thus leading to disease [12]. Here one thing is also to be clarified that Rasa is circulating medium according to Ayurveda, where as 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 [13]. It is observed that food stuff containing vitamins [folic acid, B6 and B12] to reduce homocysteine levels (corrects Rasa Dusti) significant reduces chances of stroke [14]. Homocysteine is believed to be responsible for structural damage of the artery architecture. It degrades & inhibits collagen, elastin and the proteoglycans (considered to relate with Vata) [15,16]. Homocysteine is a 'corrosive' of long-living proteins, i.e. collagen or elastin, or life-long proteins.

Concept of cardiogenic emergency is dealt 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) [17]. 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 vitiating, usually Vayu. Vayu is vitiating due two factors viz. Marga Avarana (Occlusion) and/or Dhatu Kshya [18]. The vitiating in case of forceful suppression of Urges leads to immediate vitiating of Vayu, that further moves up towards settles in tissues of lowered vitality, further vitiates Pitta, Kapha and then the Dhatu, leading to disease manifestation [19]. Vata vitiating 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 (Abhighata 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 [20]. Factors that precipitates 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 vitiating in Manovaha Srotos, further it vitiates Vata and Pitta [21], Chardi Vega Rodha (Udan Vayu Rodha), excessive Karshana (Karshana in dhatu) and Abhighata (Sharir and/or Manobhigata).

In Siddhi Sthana Charaka describes about in case of Abhighata 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, Hridaya 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) [22], Unmad (Insanity, etc), Pralap (delirium), Chit Nasha (loss of consciousness) [23].

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 ICCU. 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 of 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 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 [25]. Hridaya 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 Prasam (mental peace), and Gyana (knowledge) [26].

Drug Management

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

1. Hingu churna+Lavana+lemon juice or other sour material
2. Hingu churna+Lavana+other hridaya aushadha
3. Hingu churna+Lavana+Gokshru Panchamula
4. Hingu churna+Bilvadi Panchamula [27]
5. These four formulations may be taken collectively and can be prescribed, the drug is to be consumed at regular interval orally (muhu-muhu). As on today the combination of Hingvastak Churna (an Ayurvedic formulation) along with Dashmula Kwath may be the drug of choice.
6. Haritaki+Nagar+puskarmula+hibera+hingu
7. Puskarmula+shunthi+Shati+Kshra+lavana with sarpi
8. Decoction of puskarmula, Matulung, Palasha, Shati, Shunthi, Kshra, Vacha, Yavaani [28]

After the emergency condition other Hridaya, and Ojus increasers may be prescribed like Ashwagandha, Shatavari, Loha Bhasma, Abhraka

Bhasma, 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 is 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 health 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 attempt to understand 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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