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Understanding Cardiovascular Disorders - An *Ayurvedic* Approach

Kulkarni Prasad, Gogate Vishwas[1]

Assistant Professor, [1]Associate Professor, Dept. of Kayachikitsa, Govt. Ayurved College, Nanded, Maharashtra, India.

ABSTRACT

The morbidity and mortality due to Cardiovascular disorders is increasing globally. Conventional approaches are efficient in the management of critical conditions like myocardial infarction etc. But the established therapeutic approach of the conditions like, hyperlipedemia, hypertension, Coronary Artery disease etc. is not cost effective. So, need of the hour is to understand the basic pathophysiology of cardiovascular disorders on *Ayuvedic* parlance. Heart is made of essence of *Rakta* and *Kapha*. So, vitiated *Rakta* and *Kapha* plays an important role in the pathophysiology of different heart diseases.

Key words: Cardiovascular disorders, Ayurveda.

INTRODUCTION

With urbanization and relative affluence, dyslipidaemia and cardiovascular diseases have emerged as an epidemic.[1] The global burden of disease study reported almost 25% out of total annual deaths due to cardiovascular diseases.[2] It is estimated that by the year 2020 there would be a 111% increase in cardiovascular death in India.[3] According to World Health Organization (WHO), 80% of World population is dependent on their Traditional system of Medicine for their primary health care needs.[4] Ayurveda is a rich heritage and vast scientific system.[5] Cardiovascular problems have been dealt in detail in Ayurveda, which describes *Hrudaya* (heart) as a body organ governing emotions and circulating blood to keep a person alive and healthy.[6]

Today's Ayurveda sector seems to be trapped in copying modern medicine protocols, many times without understanding the contrasting epistemologies and the principles of the respective systems.[7] So, the need of the hour is to understand disease pathology according to Ayurvedic parlance.

Terminology - *Hrudaya?*

In Ayurveda, disease nomenclature primarily focuses upon presenting system. The term *Hrudaya* itself has been controversial since ages and continues to be even today. The term *hrudaya* is coined for the two major organs viz. - Heart and brain.[8] *Hrudaydushti* is mentioned in *Hrudayaroga* and *Apasmara* pathology.[9] So, question arises how to solve this controversy?

Whenever there is vitiation of *Buddhi* (memory), *Mana* (mind), *Chetana* (sensory function) etc. then, the term *Hrudaya* indicates the organ Brain. Whenever there is a reference of *Rasa – Rakta Samvahana* (blood circulation), *Vyana Vayu* etc., then the term *Hrudaya* indicates the organ Heart.

Formation of *Hrudaya*

Hrudaya is formed from the superior essence part of *Rakta Dhatu* and *Kapha*.[10] So, pathological changes in

Address for correspondence:
Dr. Prasad V. Kulkarni
Assistant Professor, Dept. of Kayachikitsa, Govt. Ayurved College, Nanded, Maharashtra, India.
E-mail: kulk.prasad1@gmail.com

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Rakta and *Kapha* ultimately affects the physiology of the Heart.

Development of *Hrudaya*

According to *Ayurveda, Hrudaya* starts its functioning in the 4th month of intrauterine life.[11] *Hrudaya* is a *Matruja* (maternal) organ.[12] It is the first organ to start its functioning in utero, last to stop only at death.

Anatomical aspect of *Hrudaya*

Heart along with the umbilicus is mentioned as a landmark to demarcate the areas of three *Doshas* (humor) and also to demarcate the selective regions of some diseases.[13] In shape and size and also in color and appearance, *Hrudaya* resembles the lotus bud[14](*Pundarika Sadrusham*) hanging from a bent stem with its tip pointing downwards (*Adhomukham*). Its interior resembles a mesh work and is full of blood.[15] The heart is also compared with a root of tree (*Mahamool*) and its main trunks and big vessels are compared with the trunk and branches of a tree.[16]

New approach towards the pathology of heart disease according to Ayurveda

As embryologically heart is developed from the essence part of *Kapha* and the *Rakta Dhatu*; heart diseases can be classified as – *Raktadushtijanya, Kaphadushtijanya, Vyan Vayu Vikrutijanya* and *Manovikrutijanya Hrudroga.*

Raktadhatu Dushtijanya Hrudroga (Heart disease caused by the vitiation of blood)

Yakrut (liver) and *Pleeha* (spleen) are the *Srotomula* of the *Raktavha Srotas.*[17] *Rakta Dhatu* is having following properties[18] – *Visrata, Dravata, Raga, Spandan* and *Laghuta*.

1. ***Visrata*** - *Visrata* means having specific odor. This property is due to presence of *Pruthvi Mahabuta* in the blood.
2. ***Dravata* (fluidity)** - Normally because of this property, *Rakta Dhatu* is *Pravahi* (flowing) in nature. This property is due to presence of *Aap (Jala) Mahabhuta* in the blood. When pathologically, this *Dravata* increases, it ultimately increases blood volume. This increased blood volume causes increase in cardiac output and finally increased blood pressure.[19] So, hypertension caused by increased blood volume can be understood as a pathology caused by increased *Dravata* in blood. When this *Dravata* in the blood decreases, it causes dehydration.
3. ***Raga* (redness)** - *Rakta* is having its specific red colour.[20] This property is due to the presence of *Teja Mahabutha* in the *Rakta*. In the conditions like polycythemia vera, this *Raga* property is pathologically increased; while in the disease like *Pandu* (anemia) this coloration property of blood is pathologically decreased.
4. ***Spandhan*** - *"Spandh"* means pulsation. This property is due to presence of *Vayu Mahabhuta* in the blood. When this *Spandh* (pulsation) in the *Rakta Dhatu* is increased it causes Trachycardia and when this *Spandh* in the *Rakta* is decreased it causes bradycardia. Hence, trachycardia can be understood as a result of provocation of *Vayu* in the *Rakta* (*Raktagat Vata*).
5. ***Laghuta*** - *Laghuta* is *Aakashiya Guna.*[21] For the normal physiological functioning of the heart this *Laghuta Guna* in blood is also essential. Specific gravity of the blood depends upon plasma content.[22] It contains protein and fatty material. This fatty content includes serum lipids and serum cholesterol. These can be correlated with *Meda Dhatu*. So, when *Laghuta* in *Rakta Dhatu* is diminished and *Guruta* in *Rakta Dhatu* is increased; it may produce conditions like Hyperlipedemia, dyslipedemia etc. So, to treat hyperlipedemia, we have to reduce abnormal *Guruta* in the blood and have to increase *Laghuta* in the blood.

So, the pathology of cardiovascular disorders can be easily understood on the basis of extent of *Rakta Dhatu* is vitiated. Conditions like coronary thrombosis, coronary insufficiency, hypertension, hypotension etc can be considered as a *Rakta Dhatu Dushtijanya Hrudroga*.

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Kaphadushtijanya Hrudroga

Here, *Kapha* means *Avalambaka Kapha*. *Avalambaka Kapha* is essential for the structural integrity of the cardiac muscle.[23] So, when this *Avalambaka Kapha* is vitiated it causes mostly structural deformities of the heart e.g. Ventricular hypertrophy, Valular heart disease etc. These deformities are mostly chronic in nature as compared with *Raktadhatudushtijanya Hrudroga*.

Furthermore, these *Kaphadushtijanya Hridroga* can be divided into;

1. ***Sajwar Hrudrog*** - Heart disease associated with fever as seen in rheumatic heart disease.
2. ***Hrudaya Visruti*** - Hypertrophy, cardiomegaly etc.

Vyanavayu Dushtijanya Hrudroga

Vyan Vayu is responsible for the normal contraction-relaxation of the heart muscle.[24] Because of the *Vyan Vayu*, normal and continuous circulation of the *Rasa - Rakta* occurs.[25] So, the conditions like Trachycardia, bradycardia, extrasystole, Articular fibrillation etc. can be incorporated in the *Vyan Vayu Dusthijanya Hrudroga*.

Manovikrutijanya Hrudroga

Psychological factors like stress, anxiety plays important role in the manifestation of the heart disease.[26] According to Ayurveda, *Sadhaka Pitta* is responsible for the normal functioning of the mind.[27] So, while dealing with the patients of cardiovascular disorders, there is due consideration of the factors like vitiation of *Sadahka Pitta*.

General Symptoms of Heart disease

Acharya Charaka mentioned the various signs and symptoms occurring in heart disease.[28] These are,

1. ***Vaivarnya* (discoloration) –** Proper physiological *Varnya* (color) depends upon two factors;

a. *Bhrajaka Pitta* - which resides in the skin.[29]

b. *Asrukdhara Kala* [30] – Blood circulation occurs through *Asrukdhara Kala*. On modern parlance, it can be correlated with peripheral circulation. Psychological factors like fear, stress and anxiety vitiate this peripheral circulation.[31] Because of the contraction and relaxation of the *Asrukdhara Kala*, there fainting occurs in extreme fear condition and flushing occurs in extreme anger condition.

2. ***Murchha*** - This can be correlated with syncope. Syncope is due to a temporary reduction in the blood flow and therefore a shortage of oxygen to the brain.[32]
3. ***Jwara* (fever)** - In endocarditis, pericarditis like conditions there is febrile illness associated with cardiac anamoly.[33]
4. ***Shwasa, Kasa, Hiccha* (dyspnea)** - *Hrudaya* is the *Srotomul* of *Pranvaha Srotas.*[34] Blood purification occurs in *Pranvaha Srotas*. That's why, dyspnea on exertion occurs in different cardiac anomalies. Generally, in the last stage of *Hrudayroga*, there is a *Chinna Shwasa*[35] which can be correlated with chyne-stoke respiration.[36]
5. ***Ruja* (pain)** - Generally, in the *Raktdushtijanya Hrydayavikara*, there is a cardiac pain.

Congenital Heart Disease and *Ayurveda*

Acharya Shushruta described *Janmabal Pravrutta Vyadhi* (congenital disorders).[37] These disorders can be divided into, a) *Rasakrut* b) *Dauruhad Apavhar Krut*. Congenital heart disease can be considered as a *Raskrut Janmabal Pravrutt Vyadhi*.

Interpretation of "*Amla Hrudyanam*"

Acharya Charaka quoted that *Amla Rasa* is best for the *Hrudaya.*[38] Here question may arise why *Acharya* mentioned *Amla Rasa* as *Hrudyam* and not the other *Rasa*?

Udavarta is one of the main causes of *Hrudroga.*[39] Therefore, in *Charaka Samhita* after the description of the *Udavarta*, there is a description of *Hrudroga.*[40] In *Udavarta*, there is *Pratilom Gati* of *Vayu.*[41] So, to treat *Udavartjanya Hrudrog, Vatanulomana* is essential. *Amla Rasa* is called *Mudvatanulomana.*[42] *Amla Rasa* is useful for the *Anulomana Gati Vayu*. This is special quality possessing only *Amla Rasa* and not

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others. Hence, *Amla Rasa* is useful in *Udavartjanya Hrudroga*.

CONCLUSION

Morbidity due to cardiovascular disorders is increasing day by day. *Ayurveda* is traditional and most commonly practiced medicine in India. The need of hour is to understand the entire notion of cardiovascular disorders according to Ayurvedic epistemology. This article gives broad pathophysiological concept about different cardiovascular pathologies on Ayurvedic parlance. Understanding cardiovascular pathology on Ayurvedic parlance, will definitely find in future promising therapeutic solutions of cardiovascular morbidity. Quality of life and therapeutic efficacy in the cardiovascular disorders can be enhanced by adopting Ayurveda treatment protocols.

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