CONCEPT OF DOSHAS AND DUSHYAS IN DIFFERENT CARDIAC DISORDERS

Hegde Gajanana
Bhat Priya
Dept. of Kayachikitsa, Govt. Ayurveda Medical College, Mysore, Karnataka, India

ABSTRACT

Ayurveda considers hrudaya (heart) as one of the vital organ of the body. As it is one among the trimarams, any injury to the hrudaya leads to severe complications & even death. Cardiovascular diseases are the largest cause of mortality. Overall, CVDs accounted for around one-fourth of all deaths in India in 2008. It will be the largest cause of death and disability by 2020 in India. It has been forecasted that 2.6 Million people will die from coronary heart disease, which constitutes 54% of deaths caused due to cardiovascular disease, making an impact to the society and the economy even more significant. Although many types of cardiovascular diseases are enlisted in contemporary science, only a few explanations are available in Ayurvedic classics. As heart diseases are the current burning problem in the society understanding the heart diseases with respect to dosha and dushya involved in them is very essential. An attempt has been made in this article for consideration of doshas and dushyas involved in the pathogenesis of various cardiac disorders.

Keywords: Hrudroga, Cardiovascular disease, Dosha, Dushya

INTRODUCTION

Hrudaya is an organ which draws blood from all over the body and then supplies it to all parts of the body. Embryologically, it originates from the essence of rakthadhatu and kapha dosha. The shape of heart has been described as ‘inverted lotus’. Hrudaya forms the seat of udana, vyana & prana vayu, sadhaka pitta, avalambaka kapha & ojas. In Ayurveda the word prana vayu is used for oxygen and functional component of nervous system controlling respiration and deglutition. Oxygen is required for very existence of all cells, organs and life. It is vital for functioning of heart, mind and intellect. Vyana vata controls all the movements of body both voluntary and involuntary. It controls contraction, relaxation and rhythmicity of heart. Sadhaka pitta represents enzymes in the heart eg: SGOT, aldose etc. whereas avalambaka kapha represents interstitial fluid in the heart and lungs. Embryologically endocardium is derived from rasa (body fluids) and rakta (blood). Myocardium is derived from mamsa dhatu (muscular tissue) and pericardium is derived from meda dhatu (fatty and connective tissue). Each of these layers can be affected by one or all the three doshas.

Equilibrium of these doshas present in the heart is responsible for normal functioning of heart. Vitiation of any of them is invariably necessary for causation of heart diseases. In general hetu (causes) can be broadly classified as doshaja hetu (that causing doshic vitiation) and vyadhi hetu (those directly causing vyadhi). Doshaja hetu can be further classified as shareerika hetu (physical factors) and manasika hetu.
(psychological factors). Improper treatment to any disease, trauma and improper purificatory therapies acts as vyadhija hetu for hrudroga. Ruksha shushka alpa bhojana and upavasa, Ushna amla lavana katu kshara pradhana ahara along with madya sevana and guru snigdha bhojana, achesa act as shareerika hetus for production of vataja, pittaja and kaphaja variety of hrudroga respectively. Whereas shoka, krodha and achinta (kapha prakopa kara) act as manasiidanas in causing hrudroga.

Pathogenesis of hrudroga begins with hetusevana causing doshadusti and agnidusti. Because of mandagni (agnidusti) there will be formation of ama, which in combination with vitiated doshas produces samadoshas. As there will be predisposition of kha vaigunyatva in hrudaya, these samadoshas takes sthana samshraya in hrudaya. The presence of samadoshas causes improper nourishment of hrudaya due to srotorodha or margavarodha (obstruction to channels carrying nourishment) leading to improper functioning of hrudaya producing symptoms like vaivarnyata, ruja, murcha, shwasa, shotha and atisweda. Thus causes hrudroga.

In Charaka Samhitha trimarmiya chikitsa, explanation regarding general signs and symptoms of hrudroga is stated as vivarnyata (cyanosis), shwasa (dyspnoea), shotha (oedema) and atisweda (sweating), murcha (syncope) & ruja (chest pain/chest discomfort). These samanya lakshanas very well matches with general signs and symptoms of cardiac diseases as mentioned in contemporary science.

CLASSIFICATION OF VARIOUS CARDIAC DISEASES

The general classification of diseases as explained in Sushruta Samhita can be applied to various cardiac diseases also. It is as follows:

- **Bijadosha (adibalapraavrutta)** - hereditary cardiovascular disorders
- **Douhrudaapacharaja (janmabalapraavrutta)** - congenital cardiovascular disorders
- **Sanghatabalapraavrutta** - heart disease due to trauma.
- **Upasargaja** - infective cardiac disorders
- **Doshabalapraavrutta** - vataja, pittaja, kaphaja, sannipataja

**Bija doshaja vyadhis** are those which manifest due to morbidity of shukra and shonita by vitiated vataidoshasi.e abnormal genome. It is nothing but hereditary cardiac diseases. These are the cardiac problems that run through the family. For eg: Brugada syndrome, Coronary artery disease, cardiac amyloidosis etc. One can also inherit risks for high cholesterol (hyper lipidemia), diabetes, high blood pressure (hypertension) and obesity, which further acts as potential risk factors for the manifestation of various cardiac problems.

**Douhruda apacharaja vyadhis** occur due to unwholesome behaviour of the mother during conception and pregnancy. This can be considered as congenital heart diseases. It is a problem with the heart's structure and function that is present at birth. For eg: Tetralogy of fallot, Total anomalous pulmonary venous return, Transposition of the great vessels, Aortic stenosis, Atrial septal defect (ASD), Ventricular septal defect (VSD), Patent ductus arteriosus (PDA) etc.

Prime dosha involved in bija doshaja and douhruda apacharaja vyadhi is vataidosha because vataidosha is responsible for all garbha vikruti.
Sanghata bala pravrutta vyadhis are those diseases which manifest due to assault or injury. Upasargaja vyadhis are those cardiac disorders caused due to infection for eg: Endocarditis, Myocarditis, Pericarditis etc.

Doshabala pravrutta vyadhis are those manifesting due to disturbed sharirika and manasadoshas. The causative factors for these are incompatible dietetics and erratic activities. They can be further classified as Vatajahrudroga, Pittajahrudroga, Kaphajahrudroga and Sannipatajahrudroga.

Vatajahrudogas are those cardiac disorders manifested due to deranged pranaor vyanavata. It is characterized by pain or alteration in the normal rhythemicity of heart. Diseases like angina pectoris, aneurysm, cardiac arrhythmia and hypertensive cardiomyopathy can be considered as vatajahrudroga. In addition it can be viewed that vataja diseases of endocardium leads to valvular affections like aortic and mitral stenosis and regurgitation. Vataja disorders of myocardium include atrophy or fibrosis of heart muscle and that of pericardium include constrictive pericarditis. Vataja disease of coronaries gives rise to angina pectoris.

Angina pectoris can be compared to Hrudshoola as described in Sushrutha Samhita where it is explained that kaphapitta avarodha leads to vataprapkopa. This prakupita vata further vitiates the rasa dhatu thus leading to hrut shola which is characterized by teevra shola (severe pain in heart) & uchwasaaavarodha (difficulty in expiration). A similar explanation is available in contemporary science regarding angina pectoris. Pathogenesis involved is vitiated vata leads to spasm of coronary vessels which results in temporary ischemia of heart and gives rise to severe pain. The predisposing factors being thickening of coronaries due to kapha (atherosclerosis) or pitta (inflammatory) and abnormalities of rasa & raktha (hypercholesteremia).

Aneurysm is an abnormal widening or ballooning of a portion of an artery due to weakness in the wall of the blood vessel. Aneurysm may be considered as gulma as it is explained as ‘sparshaupalabyaparipindita granthi’ (palpable mass) and ‘hrutnabhiantaraachalagranthi’ (immobile mass between heart and umbilicus). Also gulma is among raktapradoshaja vyadhi (disease caused due to vitiated blood). Some even consider it as sirajagranthi, the key feature of it being vruttaigranthi. These aneurysms are caused by weakness of Mamsa dhatu (muscular tissue) and an increase in Vatadosha.

Cardiac arrhythmia is characterised by abnormal electrical activity in the heart. The heartbeat may be too fast or too slow or even irregular. A heart beat that is too fast is called tachycardia and a heart beat that is too slow is called bradycardia. Vyanavata controls all the activities of the heart including its rhythm. Disturbance of vyanavata results in disturbance in the normal rhythm of heart. Its association with pitta leads to tachycardia & with kapha leads to bradycardia.

Hypertensive cardiomyopathy occurs when hypertension is sustained for an indefinite period of time leading to hypertrophy of the left heart ventricle. The most common symptoms include Chest pain during exercise, difficulty in breathing during exercise. Additional symptoms of mild hypertensive cardiomyopathy include:
loss of appetite, mild fatigue& increased Urinary frequency. Symptoms of severe hypertensive cardiomyopathy include: palpitations, fainting, severe difficulty in breathing, pedal oedema, chest congestion, wheezing. Ayurveda views that rasa dusti and vyanavatadusti are responsible for hypertension and hypertensive cardiomyopathy as vatadusti in initial stage which further involves kaphadosha in the later stage.

**Pittaja hrudroga**s are the cardiac disorders associated with inflammation. Those effecting endocardium cause endocarditis, myocardium cause myocarditis and that of pericardium cause pericarditis. Pericarditis associated with fluid accumulation (pericardial effusion) can be viewed as pitta associated with kapha and stiffness (constrictive pericarditis) with vata. Also pittaja disease of coronaries gives rise to specific and non- specific arteritis.

**Kaphaja hrudroga**s are the cardiac diseases caused by derangement of kaphadosha. Diseases like endocardinal fibroelastosis, corpulmonale, coronary artery disease and ischemic heart disease can be considered as kaphaja hrudroga. The same can be viewed as kaphaja disease of the endocardium includes endocardial fibroelastosis. Kaphaja disease of myocardium includes hypertrophy of heart muscle as well as storage diseases of heart like glyocgen storage diseases and that of pericardium includes thickening of pericardium. Kaphaja disease of coronaries gives rise to atherosclerotic changes.

Endocardinal fibroelastosis is a disease characterised by pronounced, diffuse, thickening of the ventricular endocardium and presents as unexplained heart failure in infants and children. The symptoms being breathlessness, cough, wheezing, feeding difficulty, excessive sweating, failure to thrive & recurrent chest infections. Here kaphadosha vitiating rasa and raktha which forms the endocardium may be explained as the prime factor causing Endocardinal fibroelastosis.

Corpulmonale is enlargement of the right ventricle of the heart as a response to increased resistance or high blood pressure in the lungs (pulmonary hypertension). When there is presence of lung disease like emphysema, COPD or pulmonary hypertension- the small blood vessels become very stiff and rigid. The right ventricle is no longer able to push blood into the lungs and eventually fails. This is known as pulmonary heart disease. Symptoms are shortness of breath, wheezing, ascites, raised JVP, hepatomegaly, pedal oedema. From an Ayurvedic perspective, there is kapha avarana leading to vata prakopa & thus manifestation of the disease.

Coronary artery disease is the result of the accumulation of atheromatous plaques (kaphavargeeyadravya) within the walls of the coronary arteries. This causes provocation of vata due to margavarodha. Symptoms are Chest pain or discomfort, also called angina, Shortness of breath when exercising or during any vigorous activity, a fast heartbeat, Weakness, dizziness, nausea &increased sweating. Ayurveda views atherosclerosis according to the symptoms. Degeneration of the blood vessels is caused by increased vata in the vessels, which make them hard, thin, dry and rough. Deposits of lipids and calcium represents deposition of kapha in the degenerated vessels resulting in irregular thickening of blood vessels, so from Ayurvedic point of view, it can be said
that this disease is caused by vitiation of *kaphadosha* associated with *vatadosha in raktavahasrotas* (blood vessels).

Ischemic heart disease or myocardial ischaemia, is a disease characterized by reduced blood supply to the heart muscle, usually due to coronary artery disease (atherosclerosis of the coronary arteries). It presents as Angina pectoris (chest pain on exertion, in cold weather or emotional situations), Acute chest pain: acute coronary syndrome, unstable angina or myocardial infarction ("heart attack", severe chest pain unrelieved by rest associated with evidence of acute heart damage), Heart failure (difficulty in breathing or swelling of the extremities due to weakness of the heart muscle) and even as Heartburn. Ayurveda views it as *a kapha medo vrudhi* causing margavarodha pathology. Due to *santarpaneeya nidana and virudha ahara* there will be *kapha medha vrudhi* which causes *shonita abhishayandana*. Here *shonita pradhushana* can be considered as accumulation of excessive fat in blood vessels (dyslipidemia) which causes *rasa-rakta margaupalepa* and then *dhamanipratichaya* further leading to *rasa rakta marga varodha*. This *margavarodha* when takes place in heart causes ischemic heart disease.

**Tridoshajahrudroga** are the cardiac disorders which has multifactorial origin. There will be involvement of all *tridoshas* with predominance of one or two *doshas*. Congestive heart failure and Rheumatic heart disease can be considered as a *tridoshajahrudroga*.

Congestive heart failure (CCF) is a condition in which the heart's function as a pump is inadequate to deliver oxygen rich blood to the body. Heart failure may develop suddenly or over many years. The symptoms of congestive heart failure vary, but can include fatigue, diminished exercise capacity, shortness of breath, and swelling. Ayurveda recognises that a mild disturbance in the balance of *tridoshas* in the heart muscle results in the impairment of the cardiac function, which is usually compensated by augmenting the heart rate and increasing the force of ventricular contraction. Marked disturbance in the balanced state of *tridoshas* in the heart muscle give rise to uncompensated heart failure.

Rheumatic heart disease can be viewed as a *kaphapradhanatridoshajavyadhi*. The symptoms of this disease correlate with that of *amavata* such as *dourbalayata* (fatigability due to low cardiac output), *gatrastabdata* (due to arthritis, soft tissue & muscular inflammation) *aruchi* (anorexia) which occurs as a prodromal symptom of rheumatic fever, *allasya* (lethargy) also due to fatigability, *jwara* (low grade continuous fever), *shoonangata* (swelling of joints) due to polyarthritis.

**Upasargaja or Krimijahrudroga** is the cardiovascular disease caused due to parasite, viral or bacterial infections. The following conditions may be considered for *krimijahrudroga*- Infective Endocarditis caused from infection by different microorganisms and by fungi, pseudocyst of *Toxoplasma gondii* in muscle fibre of the heart causing myocarditis, hydatid cyst of the heart caused by *Echinococcus granulosus* infestation and acute infection by *trypanosoma cruzi* which terminates into myocardial infarction within 20 to 30 days.
Chronic form of this is characterised by disturbed cardiac rhythm (heart block and John Vorsternmans Adams syndrome). This occurs because of T. cruzi, which resides in the heart muscle during its infestation in the body.

**DISCUSSION**

The heart being a muscular organ derives its nutrition from *rasa*, its oxygen from *rakta* and its vital energy from *ojas*. Its movements are controlled by *vyanavata*. *Sadhaka pitta* represents intracellular enzymes in the cells of the heart and helps it to digest and utilise the nutrients and oxygen. *Avalambakakapha* represents the intracellular and interstitial fluid of the heart and chest. Any imbalance in these basic elements disturbs the normal function of the heart and thereby causes heart diseases.

*Rasa* carries all the essential nutrients to all the cells of the body. *Rasa kshaya* symptoms are encountered in dehydration or state of shock. The sluggish circulation of both these states acts as a precipitating factor for coronary thrombosis. Red blood corpuscles carry oxygen to all tissues. Increased blood volume can lead to hypertension and gives rise to fullness of veins which is a sign of congestive cardiac failure. Acute blood loss may lead to shock. And chronic anaemia can give rise to heart failure. All these are resultant of *raktadusti*. As heart is a muscular organ and factors which affect muscular tissue can affect the heart. Myocarditis, hypertrophy of heart owing to glycogen storage etc as well as tumour of the heart arises due to vitiation of muscular tissues of the heart. Poor contraction of heart leads to congestive cardiac failure.

**CONCLUSION**

No disease occurs without vitiation of *doshas* and heart disease is not an exception. *Avalambakakapha, pranavata* and *vyanavata* are the prime *doshas* taking part in the pathogenesis of *hrudroga*. *Dushyas* involved are the *rasa, rakta and mamsa*. Heart diseases can be classified according to sushruta’s *vyadhhiparibheda*. As complete establishment of etio-pathogenesis of the disease *hrudroga* is not available in Ayurvedic classics, it is inevitable to understand and manage *hrudroga* with the application of concept of *dosha* and *dushya*.

**REFERENCES**

1. Agnivesha: CharakaSamhita revised by Charaka and Dridhabala with Ayurveda Dipika commentary by Chakrapani Datta; Edited by Vaidya Jadavaji Trikamji Acharya; Published by Chaukhamba Prakashan; Varanasi; Edition-reprint- 2007; chikitsa Sthana 26/3; p-597.

2. Agnivesha: CharakaSamhita revised by Charaka and Dridhabala with Ayurveda Dipika commentary by Chakrapani Datta; Edited by Vaidya Jadavaji Trikamji Acharya; Published by Chaukhamba Prakashan; Varanasi; Edition-reprint- 2007; Siddhi Sthana 9/5; p-717.


4. Sushruta: Sushruta Samhita with Nibandha Sangraha commentary of Acharya Dalhana, Edited by Vaidya Jadavaji Trikamji Acharya and Narayana Ram Acharya
Hegde Gajanana & Bhat Priya: Concept of Doshas and Dushyas in Different Cardiac Disorders


6. Agnivesha: CharakaSamhita revised by Charaka and Dridhabala with Ayurveda Dipika commentary by ChakrapaniDatta ;Edited by VaidyaJadavajiTrikamjiAcharya; Published by ChaukhambaPrakashan; Varanasi; Edition-reprint- 2007; ChikitsaSthana 5/6; p-435

7. Agnivesha: CharakaSamhita revised by Charaka and Dridhabala with Ayurveda Dipika commentary by ChakrapaniDatta ;Edited by VaidyaJadavajiTrikamjiAcharya; Published by ChaukhambaPrakashan; Varanasi; Edition-reprint- 2007; Chikitsa Sthana 26/78; p-602.

8. Agnivesha: CharakaSamhita revised by Charaka and Dridhabala with Ayurveda Dipika commentary by ChakrapaniDatta ;Edited by VaidyaJadavajiTrikamjiAcharya; Published by ChaukhambaPrakashan; Varanasi; Edition-reprint- 2007; Chikitsa Sthana 12/8; p-79

9. Agnivesha: CharakaSamhita revised by Charaka and Dridhabala with Ayurveda Dipika commentary by ChakrapaniDatta ;Edited by VaidyaJadavajiTrikamjiAcharya; Published by ChaukhambaPrakashan; Varanasi; Edition-reprint- 2007; Chikitsa Sthana 11/9; p-184

CORRESPONDING AUTHOR
Dr. Priya Bhat
PG Scholar, Department of Kayachikitsa
Govt Ayurveda Medical College, Mysore, Karnataka, India

Source of support: Nil
Conflict of interest: None Declared