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Review Article

VALVULAR HEART DISEASES: AN INSIGHT THROUGH AYURVEDA

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ABSTRACT

Cardiovascular diseases have a large share amongst non-communicable diseases. Valvular heart diseases constitute a significant part of cardiovascular diseases which cause morbidity and mortality in India. India is currently heading towards becoming a heart disease capital of world. This puts a tremendous pressure on available resources of medical and surgical management. Thus, it would be a great asset if these diseases could be managed through traditional systems of medicine like *Ayurveda*, which would prove to be a good conventional treatment and prevent the development of complications and need for surgery. This article aims at understanding of VHD (Valvular heart diseases) through an *Ayurvedic* perspective and critically analyzes the treatment options in *Ayurveda*. It is noticed that though no single disease can be directly correlated to VHD, many of the clinical features of '*Hrida roga*' mentioned in *Ayurvedic* classics are similar to that of VHD and can be adequately managed by classical herbs and formulations.

KEYWORDS: Valvular heart disease, *Hrida Roga*, Treatment of VHD in Ayurveda, Cardiovascular diseases.

INTRODUTION

The word '*Hridaya*' in Ayurveda refers to heart. It is derived from two verbs, '*Hri*' which means to bring back forcibly and '*Da*' which means to donate.[1] '*Hridaya*' thus is an organ which supplies blood to all parts of the body and in which blood is collected back. This provides a functional definition of heart. *Acharya Sushruta* has opined that appearance of heart is similar to an inverted bud of lotus.[2]The narrow apex of the heart is directed downwards and broader base is directed upwards when the individual is standing. This observation is reflected in this explanation saying that the heart looks like an inverted bud of lotus.[3]

According to Ayurvedic classics, Heart originates from the essence of *Rakta* and *Kapha* and develops into a muscular organ.[4] It is a *Matrija Bhava* i.e. genetically, in the development of heart, maternal influences predominate.[5] Movements of all the valves in the heart and blood vessels are controlled by *Vyana vayu*.[6] Thus valvular disorders like stenosis & regurgitation result from disturbances in functioning of *vyana vayu.* Embryologically, endocardium is derived from *Rasa* & *Rakta*, myocardium from *Mamsa* and pericardium from *Meda*. The *Vataja* disorders of endocardium lead to valvular affections. So the treatment is directed towards strengthening of *rasa* and *Rakta dhatu* and restoring the balanced state of *Vata*.[7]

Valvular heart diseases constitute a significant part of cardiovascular diseases. Valvular heart disease is more prevalent in underdeveloped and developing countries than in developed countries and among the population with multiple social issues such as poverty, low socio-economic status, overcrowded dwellings, under-nutrition, poor sanitation, and suboptimal medical

care.[8] It has continued to be major health care concern in the developing countries even in the 21st century. In India, the prevalence of RHD among school children is 2-11 per 1000 with a mean of 6 per 1000 whereas adult average ranges between 123-200 per 100,000 population.[9] Mostly valvular heart disease is of rheumatic in origin. Other causes include congenital anomaly, valve prolapse, trauma to valve, damage to papillary muscle, myocardial infarction, calcification and may be functional also (associated with left ventricular hypertrophy, cardiomyopathy, coronary artery disease). VHD is characterized by damage or a defect in any of the heart valves. Normally functioning valves ensure that blood flows with proper force in the right direction at the proper time. In valvular heart disease, the valves may be narrowed (stenosed) to open fully, or it may fail to close adequately (incompetent) thus permit regurgitation of blood. To compensate for poor pumping action, the heart muscles get hypertrophied, thereby losing elasticity and efficiency. In addition, in some cases, blood pooling in the chambers of the heart has a greater tendency to clot, increasing the risk of embolism. The severity of valvular heart disease varies. In mild cases there may be no symptoms, while in advanced cases, valvular heart disease may lead to congestive heart failure and other complications. Valvular heart disease most commonly affects the mitral valve (70 to 75%) followed by combined mitral & aortic involvement (20 to 25%).

The mitral valve is most commonly affected because it withstands a high left ventricular pressure. Approximately 25% of all patients with rheumatic heart disease have pure mitral stenosis, and an additional 40% have combined mitral stenosis and mitral regurgitation.[10] The age of presentation in India is usually second decade whereas in western countries it is third or fourth decade. Many of the symptoms are similar to those associated with congestive heart failure and pulmonary hypertension, such as dyspnea on exertion, orthopnea, paroxysmal nocturnal dyspnea, cough often associated with hemoptysis, edema of feet and sometimes ascites. Other symptoms include palpitations, chest pain, fatigue, syncope and fever (in case of bacterial endocarditis). Characteristic sign of VHD is the presence of murmur and sometimes a thrill over the valve area. Doppler Echocardiography is the most useful technique for assessing patients with valvular heart disease. Treatment depends upon the extent of the disease. Patients with minor symptoms should be treated medically.[11] Lifestyle changes and medicines can relieve many of its symptoms and complications. Medicines include diuretics, vasodilators, digoxin, beta blockers, anticoagulants & prophylactic treatment of rheumatic fever with benzathine pencillin. But the definitive treatment is surgical like valvuloplasty, valvotomy or valve replacement.

As far as the name of disease is concerned, no specific term is found for VHD in *Ayurvedic* classics. Though many diseases of current era do not find mention in *Ayurvedic* texts, yet they can be successfully treated due to deep insight provided by the *Ayurvedic* principles. According to *Acharya Charak* - "A physician shouldn't feel ashamed of, if he can't name a pathological condition or disease because it is almost impossible to give nomenclature to each and every disease. Instead, he should lay emphasis on comprehending the possible pathogenesis and treat accordingly".[12] With the use of herbal drugs described in our ancient texts, the disease can be well managed.

Ayurvedic texts mention *Hridyavishuddhi* and *Hridgraha* as the complications of *Amavata*.[13] These two terms may indicate towards impaired functions of heart which results from accumulation of *Ama* in the heart. Accumulation of *ama* in the endocardium gives rise to rheumatic endocarditis including valvular disorders.[14] Hridyavishuddhi is also mentioned in symptoms of *Aam Jwara*.[15] The majority of

general manifestation or clinical features of *Hridroga* mentioned in *Charak* samhita[16] may correspond to that of valvular heart disease. '*Vaivarnya'* is discoloration of skin which may be due to cyanosis and malar flush. '*Kasa'* is a clinical feature of *hrida roga* which may be same as cough with hemoptysis seen in VHD due to development of pulmonary edema. '*Shwasa'* (breathlessness) is an important feature which may be exertional dyspnea, orthopnea and paroxysmal nocturnal dyspnea also present due to pulmonary edema in VHD cases. '*Murchha'* can be understood as the syncope seen in aortic stenosis cases due to low blood pressure causing cerebral hypoperfusion. Chest pain, a clinical feature of aortic stenosis and aortic incompetence may be considered as '*Ruja'* (pain) in classical text. Another physical sign '*jwara'* may be considered as fever presented in bacterial endocarditis.

Ayurvedic medicines can be utilized to treat valvular heart disease either before surgery or in patients who cannot be operated for various reasons. *Ayurvedic* medicines are helpful in preventing, treating, or relieving the symptoms and protecting the valves from further damage. These medicines may reduce regurgitation of blood and improve the overall pumping action of the heart thereby the major clinical symptoms can be controlled well.

- Exertional Dyspnea, Orthopnea and Cough can be well managed with formulations like *Swaskuthar-Rasa, Swaskasachintamani Rasa, Malla-Sindur, Sameer-Pannag-Ras, Mahalaxmivilas Rasa, Sutashekar Rasa, Abhraka Bhasma, Shringa Bhasma, Sitopaladi Churna, Talisadi churna, Vasavleha, Kantakari avleha, Agastya Haritaki avleha, Kankasava. Pippali* and *Pushkarmool churna* may also be used. According to *Acharya Charak*, *Pushkarmool* is the best medicament among those useful in respiratory discomfort, cough and pain in chest[17]; this indicates its usefulness in dyspnea as well as heart diseases.
- Cardiac Failure may be effectively managed with *Mutravirechaniya* and *Hridya* medicines. *Mutravirechaniya* drugs i.e. diuretics like *gokshura*[18] (*Tribulus terrestris*) and *punarnava* (*Boerhavia diffusa*) reduce the vascular overload. Moreover, chance of electrolyte imbalance is less with herbal diuretics and some of them contain in themselves potassium supplements. *Hridya* drugs possess cardiotonic effect and also reduce heart rate if there is tachycardia. The drugs which have effect similar to that of digitalis are *karavira* (*Nerium indicum*), *Arjuna* (*Terminalia arjuna*) and *Punarnava*.[19] *Arjuna* exhibits cardioprotective effect because of the antioxidant nature of several of the constituent flavonoids and oligomeric proanthocyanidins, while positive inotropic effects may be caused by the saponin glycosides.[20] Formulations like *Mukta pishti, Akika pishti, Punarnava mandoor, Karvir yoga, Sweta parpati, Jawahar mohra, Prabhakar vati, Makardhwaj, Siddha Makardhwaj, Arjuna Kshirapaka, Arjuanarista, Punarnavarista* may be advised to relieve the symptoms of cardiac failure. *Arogyavardhini vati* and other hepatoprotective formulations may also be given if tender hepatomegaly develops.
- Hemoptysis can be taken care of using medicines like *Bolabaddha Rasa, Kamdudha Rasa, Chandrakala Rasa, Praval pishti, Trinakantmani pishti, Vasavleha* and *Naagkeshar churna*.
- Palpitations can be treated on the line of *Hrid daurbalya* with *Mukta pishti, Akika pishti, Jaharmohra pishti, Nagarjunabhra Rasa, Jawahar mohra, Arjuna kshirapaka, Arjunarista, Siddha Makardhwaj, Brihat vatachintamani Rasa, Mahalaxmivilas Rasa.*
- Angina or chest pain can be treated on the line of *Hritshula* with *Mrigshringa Bhasma, Brihat vata chintamani Rasa, Yogendra Rasa, Nagarjurnabhra Rasa, Hridyarnav Rasa, Arjunarista, Dashmula*

Kwatha, Arjuna Kshira paka, Pushkarmula churna, Prabhakar vati.

- Syncope due to hypotension can be managed with *Makardhwaj, Siddha Makardhwaj, Nagarjunabhra Rasa, Kasturi bhairav Rasa, Navjeevan Rasa, Akika pishti, Ashwagandharista.*
- Clot formation can be prevented with anticoagulant drugs termed as "*shonit sanghat bhedan*" in ayurveda. They reduce the risk of systemic embolism and atrial fibrillation. According to ayurveda, *katu rasa* drugs are said to be *shonit sanghat bhedan*[21] i.e. break down the blood clot by their properties. *Lashuna* (*Allium sativum*), a drug of this category has proven effect as inhibition of platelet aggregation.[22] Also two other *katu rasa* drugs, *Ela (Elettaria cardamomum)* and *Pippalimula (Piper longum)* are indicated in *Hridroga* according to *Vangasena*.[23] *Ela churna* significantly increased fibrinolytic activity at the end of 12th week in twenty hypertensive individuals.[24] Also most of the *katu rasa* drugs are proved to reduce serum cholesterol and low-density lipoproteins. Other drugs like *Kustha* (*Saussuria lappa*), *Haridra* (*Curcuma longa*), *Pippali* (*Piper longum*), *Chitraka* (*Plumbago zeylanica*), *Shunthi* (*Zingiber officinale*), *Maricha* (*Piper nigrum*), *Mishreya* (*Foeniculum vulgare*), Green Tea (*Magnolia sinensis*) and Olive oil may also be used for this purpose.
- Medicines like *Swarrna-Bhasma*, *Abhrak-Bhasma* and *Suvarna malini vasant rasa* may be given to strengthen the therapeutic response of other medications.
- Prophylactic management of Rheumatic fever may be done on the line of *Amavata*.[25]
- Restriction of salt intake prevents edema and cardiac overload. Patients should also be educated about personal and environmental hygiene, lifestyle modification, and the importance of regular follow-up. All pregnant women should be examined for Rheumatic heart disease during their ante-natal visits.[26]

CONCLUSION

Thus the approach of *Ayurveda* in this field is essentially preventive and rehabilitative and is particularly helpful for chronic management and secondary prevention. *Ayurvedic* medicines can be provided as added treatment to improve the clinical condition, avert or delay heart failure and also avoid other late complications. In case of acute and emergency situation one should seek modern medical amenities.

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