

RELEVANCE AND PERSPECTIVE OF INDIAN SYSTEM OF MEDICINE IN PREVENTION AND MANAGEMENT OF CARDIOVASCULAR DISEASE - A REVIEW

Punita Pandey

MD, Ph.D., Professor, Department of Kayachikitsa Uttarakhand Ayurveda University, Harrawala (Dehradun), Gurukul Parisara, Haridwar, Uttarkhand, India

Email: pandey.punita62@gmail.com

ABSTRACT

Past few decades have witnessed tremendous advancement in every walk of life. Despite remarkable advancement there is no end of sufferings of mankind. Non-communicable diseases especially cardiovascular diseases have taken the form epidemic and it is inferred that graph of cardiovascular disease will still take an upward trend. Sincere contemplation reveals that unwholesome development is the root cause behind this irony. The inner core of human being has been neglected so far, growth and development was aimed only at providing comfort to physical body. Such pathetic situation can only be overcome by practicing preaching and principles of Indian system of medicine. As this system envisions life and health in broad perspective and fabricates its principle and philosophy in holistic manner and provides tools to enhance each determinant of health effectively. As a matter of fact this system of medicine is not merely a medical science rather it is a complete life science and dictates the right way of living. It educates people and makes them self-reliant and encourages individual as well as society to observe *dharm*a (universal law of nature) and live a life well-tuned with nature.

Keywords: Cardiovascular Disease, Health, Holistic, Nature.

INTRODUCTION

Cardiovascular disease is an umbrella term and comprises the group of disorders of the heart and blood vessels. Cardiovascular diseases (CVDs) today are responsible for approximately one-third of deaths worldwide, and that figure will surely increase in both developing and developed countries.^[1]

Over the last 100 years, cardiovascular disease (CVD) has shifted from a relatively inconsequential disease worldwide to a leading cause of morbidity and mortality. At the beginning of the 20th century,

CVD accounted for less than 10% of all deaths worldwide. At the beginning of the 21st century, it accounts for nearly one half of all deaths in the developed world and 25% in the developing world; by 2020, it will claim 25 million deaths each year and will surpass infectious disease as the world's leading cause of death and disability.^[2]

Sincere contemplation over the pathetic situation reveals that in present era majority of people are leading unhealthy lifestyle and are consuming unwholesome diet throughout life. Besides they are

bound to face stress of diverse origin in their day to day life. Sometime the stress is due to one's being over ambitious, impatient, greedy or one's attitude of gaining success in short time while at other time one become victim of other's wrong deeds and behaviour. In either situation stress is common factor. Wrong dietary and lifestyle choices as well as long duration stress in one's life serves as potential risk factor and eventually manifest in form of cardiovascular diseases.

REVIEW OF LITERATURE

AYURVEDA VIEW

Indian system of medicine envisions life and health in holistic manner. Our sages propound its principle and philosophy in such a way that cover every aspect of human existence and enrich its inner core. In the opinion of *Aachary Charak* life is sum union of *sharir* (gross physical body), *indriy* (sensorial faculty), *sattv* (mental faculty) and *atma* (spiritual faculty).^[3] In his opinion for a state of perfect health all these four component either of gross or subtle nature requires a state of optimum health. Derangement in structure or function of any of these four is responsible for ill-health. *Aachary Sushrut* endorsed the view of *Aachary Charak* and says that a person is called healthy only when his bodily structure and physiological functions in terms of *dosh*, *dhatu*, *mal* and *agni* are functioning properly and the individual is experiencing sensorial, mental and spiritual well-being and enjoying a state of bliss.^[4] Thus it becomes evident that Indian system of medicine considers gross as well as subtle component responsible for optimum health whereas modern system of medicine ignores subtle component of human existence. Similarly modern medicine provides measures which aimed at physical component of body. On the other hand literature of Indian medicine abundantly describes and prescribes measures which heals both gross as well as subtle component of body.

Heart, the centre of cardiovascular system is virtually responsible for pumping of blood and in providing oxygen and nutrients to every cell of body.

Modern medicine view heart as a vital organ for its ability to pump blood continuously in an uninterrupted manner and sustaining life. While Indian system of medicine not only gives importance to heart because of the above reason but also recognises it as a seat of *mana* and *chetana* (consciousness)^[5] and consider it as site of emotional mind.

Aetiological Factors:

Healthy diet, lifestyle and positive emotions all are held responsible for heart health. Violation of dietary and lifestyle related rules and negative emotions disrupt *agni* (digestive, metabolic and assimilative energy), vitiate *doshas* (body humours) and produce *ama* (free radical, intermediate metabolite, toxic substance). Such an aberrant physiological state further vitiates *rasa dhatu* (fluid part of blood) and culminates in various sorts of heart diseases.^[6]

Viewing the classics it becomes evident that excessive and repeated use of hot, salty, acidic/ basic food article, alcohol, spicy food, non-use as well as excess use of unctuous substances play crucial role in precipitation of cardiovascular disease.^[7] Habitual practice of *adhyashana* (eating before digestion of previous meal), *virudhashana* (taking food articles which are qualitatively or quantitatively antagonistic to each other), *samashana* (mixing of wholesome and unwholesome food articles) *asatmya* (non-congenial food) food also becomes instrumental in manifestation of cardiovascular disease. Excess of exercise^[8] or lack of exercise^[9], excessive sleeping^[10], habit of holding physiological urges^[11], mental conflicts and suppressed emotions^[12] is also considered as causative factors of cardiovascular disease.

Besides these dietary and lifestyle factors ever increasing stress and environmental pollution s also viewed responsible for malfunctioning of heart. Psychological factors such as depression, chronic stress and anxiety, chronic hostility and anger, social isolation, and perceived lack of social support have consistently been linked with the risk of coronary heart disease.^[13]

MODERN VIEW

Cardiovascular disease is a class of diseases that involve the heart and blood vessels. Cardiovascular disease includes coronary artery disease (CAD) such as angina and myocardial infarction. Other CVDs include stroke, heart failure, hypertensive heart disease, rheumatic heart disease, cardiomyopathy, heart arrhythmia, congenital heart disease, valvular heart disease, carditis, aneurysms, peripheral artery disease thromboembolic disease and venous thrombosis.

Cardiovascular disease is leading cause of death globally. Most cardiovascular disease affects older adults. Coronary artery disease and stroke account for 80% of CVD deaths in males and 75% of CVD deaths in females. Deaths at any given age, from CVD are more common and have been increasing in much of the developing world while rates have declined in most of the developed world. The average age of death from coronary artery disease in the developed world is around 80 while it is around 68 in developing world.

Risk factors

There are many risk factors for heart disease: age gender, tobacco use, physical inactivity, excessive alcohol consumption, unhealthy diet, obesity, genetic predisposition and family history of cardiovascular disease, raised blood pressure, raised blood sugar, dyslipidaemia, obesity, psychological factors, poverty, low educational status and air pollution. Some of these risk factors are immutable; however, many important cardiovascular risk factors are modifiable by lifestyle changes, social change, and drug treatment (for example prevention of hypertension, hyperlipidaemia, and diabetes).

Sign and Symptoms of Cardiovascular Disease:

- Some patients may have no discomfort at all
- Chest pain
- Fatigue and weakness
- Change in ability to perform routine daily activities
- Arrhythmia
- TIA

- Stroke
- Sudden cardiac death
- Dull or cramping leg pain, which get worse on walking and gets better with rest
- Hair loss on the legs and feet
- Numbness or weakness in the legs
- Persistent ulcer on the feet and legs

REMEDIAL MEASURES

Literature of Indian medicine abundantly described and prescribed measures which heals both gross as well as subtle component of body. Below is a brief mention of such remedial measures prescribed in Indian system of medicine which are crucial in heart disease prevention and management.

A. Dietary Modification: Faulty nutrition is a major contributor in precipitation of heart disease. Indian system of medicine elaborately dictates the right way of eating. Its dietetics is quite well developed and enormously described all component of eating viz. what to eat and what not to eat, how to eat and when to eat. Dietetic rules regarding heart disease could be summarised as follows-

- Food should be taken regularly on time and practice of *adhyashana* (eating before digestion of previous meal), *virudhashana* (taking food articles which are qualitatively or quantitatively antagonistic to each other), *asatmya bhojana* (non-congenial food) should be discarded.
- Quantity of food should be in moderation as excessive fasting^[14] or overeating both are conducive to heart disease.^[15] As both conditions may precipitate heart disease by different mechanism:
 - Excessive fasting can lead to an electrolyte imbalance. This can make heart unstable and prone to arrhythmias.^[16] Excessive fasting results in loss of muscle mass, both of the skeletal and cardiac muscle mass, which can develop mitral valve prolapse. This can give the symptom of sharp pain beneath the sternum. A much weakened heart could result in congestive heart failure. Certain nutritional deficiencies such as magnesium and thiamine are also rarely

known to cause cardiomyopathy. Severe cardiomyopathy can lead to heart failure or be a risk factor for a heart arrhythmia.^[17]

- Overeating is viewed in two ways i.e. occasional large meal consumption and consuming more energy than required. Occasional large meal or big holiday meal can have dangerous consequences in people who are at risk of having coronary heart disease. Eating and digesting food releases many hormones into the blood stream. Those substances increase the heart rate and blood pressure and may increase the substances that help form clots. The temporary rise in blood pressure increases the oxygen requirement and creates extra burden on the heart. High blood pressure may also rupture cholesterol plaques in the arterial wall, triggering the formation of a clot that can block a blood vessel, triggering a heart attack or stroke.^[18]
- Habit of overeating, and not doing appropriate physical activities makes a person obese. Obesity is associated with hidden inflammation. This sneaky inflammation and the inflammatory factors it releases increase risk of developing atherosclerosis and the build-up of plaque in the wall of the arteries. Obesity also releases substances in the blood that make plaque rupture, which is what leads to heart attack. In addition obesity can lead to enlargement of the heart, and atrial fibrillation. Atrial fibrillation can promote the formation of clots and leads to stroke, heart failure, or other heart related complications.^[19]
- Fat content of the food should be in moderation as total abstinence^[20] or overindulgence in fatty articles^[21] both may result in heart disease
- Diet rich in fresh fruits and vegetables, whole grain and milk is considered good for heart health.
- Certain specific food articles viz. *Puran shali* (a variety of rice), *mudga* (green gram), and *kulath* (horse gram), *parawal* (pointed gourd),

khadyush, ripened *kushmand* (winter melon or white gourd), *kanji*, *tambu*, mango, banana, pomegranate, honey, *etc.* are considered good for heart health and have been described in *bhaishajya ratnavali* 33/78-81.

B. Lifestyle Modification:

- Moderately active lifestyle is recommended as over-active turbulent lifestyle as well as sedentary lifestyle both in long run may culminate in precipitation of cardiovascular disease. Regular physical activity has been shown to reduce coronary oxygen demand and increase exercise capacity, lowers systolic and diastolic blood pressure, improves insulin sensitivity and glycaemic control, improve dyslipidaemia, vascular inflammation, C-reactive protein level, as well as haemostatic variables including tissue-type plasminogen activator, fibrinogen, Von Willebrand factor and plasma viscosity.^[22]
- *Ayurveda and yoga* elaborately described regimen for every season, for day and for night. To attain optimum health everyone is advised to judiciously follow these regimens. Conduct of balanced sleeping and waking is recommended for everyone. Timely discharge of various physiological urges is recommended for healthy living.^[23]

C. Stress Management:

To attain a healthy life Indian system of medicine sets some code of conducts and its teaching and preaching encourages everyone to follow these rules in day to day life. These codes of conduct have been described under *Yam*, *niyam*, *achar rasayan* and *sadvratt*. These codes of conduct when practiced in day to day life reduce stress, improve interpersonal relationship, community health and minimize the risk of heart disease. Below is brief mention of such practices which help in reducing stress and thus are good for heart health:

Om chanting and prayer

This sort of regular practice enhances *sattv* attribute (constructive, harmonious) over *raj* (passion, active,

confused) and *tam*(darkness, destructive, chaotic) attribute of mind. Such practices in turn provide tranquillity and peace of mind and make a person strong enough to deal with otherwise imposed stress of day to day life.

Pranayam

Mental and emotional states affect breathing. The mind, consisting of thoughts and emotions is closely related to the breath. When the mind is calm and relaxed, the breathing is smooth and slow. In stressful condition breathing is fast and shallow but mostly through chest. In *pranayam*, one should utilize the diaphragm efficiently to get more oxygen without making more efforts. The diaphragm is attached to the organs like heart and lungs, also the liver, spleen, pancreas and stomach from the bottom side. Efficient movement of the diaphragm makes the functioning of these organs more efficient.

The *pranayam* practice encourages the clear flow of *pran*-the vital force to each and every part of the body thereby provides proper nourishment to the cells for their normal functioning. During stress reaction, the *pranic*-flow get disturbs considerably and different *pranayam* practices help them bring back on the track. *Nadishodhan pranayama*, *chandrdhedan pranayama*, *ujjayi pranayama* and *bharamari pranayama* are very useful in heart diseases.^[24]

Meditation

Meditation is panacea for psychosomatic and stress related disorders. In meditation, a person learns to focus his attention and suspend the stream of thoughts that normally occupy the mind and perpetually drain the energy. The practice of meditation exerts its main influence on the nervous system in the body and is, therefore, so useful in hypertension as it calms the overexcited sympathetic nervous system, reduces the peripheral resistance and drops the blood pressure.^[25]

Mudra

The *Sanskrit* word *mudra* is translated as 'gesture' or 'attitude'. *Mudras* can be described as psychic, emotional, devotional and aesthetic gestures.

Mudras are a combination of subtle physical movements which alter mood, attitude and perception, and which deepen awareness and concentration. *Yoni Mudra* and *Hridaya Mudra* may be practiced as a preventive measure of heart disease. *Yoni Mudra* balance the energies in the body, it helps to balance the activities of the right and left hemispheres of the brain. *Hridaya Mudra* helps to release pent up emotion and unburdens the heart. It may be practiced during emotional conflict and crisis.^[26]

Yoga-nidra

Yoga-nidra is the *yogic* tranquilizer, the natural, means to establish harmony and wellbeing throughout the entire system. It is especially useful in overcoming psychosomatic diseases. *Yoga-nidra* practice helps to take out deep rooted anxiety and depression.

Yogaasan

Yogaasanas are special pattern of body that stabilizes the mind through static stretching. These are physical postures, both dynamic and static, which are designed to relax and strengthen the body-mind and mobilize *pranic* energy in right direction. *Yogaasanas* are psycho-physical in nature, having an effect on both body and mind. *Yogaasanas* are not mere physical exercise. *Yogaasanas* play a significant role in toning up the neuro-muscular and glandular system of the body to restore and to maintain vitality of different organs of the body. Out of wide range of *yogaasan*; *Tadaasana*, *katicakraasana*, *konaasana*, *uttanapadaasana*, *pawanamuktaasana*, *vajraasana*, *ushtraasana*, *shankaasana*, *bhujangaasana*, *dhanuraasana*, *gomukhaasana*, *ardhamatseyendraasana* and *shankaasana* are considered beneficial in prevention and management of heart disease.^[27]

CONCLUSION

Habit of eating unwholesome diet, erratic meal schedule, physical inactivity or over-active turbulent life, adoption of unhealthy lifestyle, negative thought processing, disturbed emotions, unresolved conflicts

and inability to deal with stress, as well as exposure to ever increasing environmental pollutants are important potential factors for manifestation of cardiovascular disease.

The good news about cardiovascular disease is that they are preventable in large number of cases. Eating habits, lifestyle choices, attitude towards life, mental disposition, state of emotions and interpersonal relationship serves as potential factors and thus needs constant vigilance.

REFERENCES

1. Deaton CI et al. The global burden of cardiovascular disease. www.ncbi.nlm.nih.gov/pubmed/21762852. PMID:21762852. DOI: 10.1016/S1474-5151(11)00111-3
2. Ames W, Levenson, Md, MPH, Patrick J. Skerrett, Ms, J. Michael Gaziano, Md, MPH. Reducing the Global Burden of Cardiovascular Disease: The Role of Risk Factors. <http://www.medspace.com/review/article/446539>.
3. Agnivesh. Charak. Dradbal. Shastri, Kashinath (Com.). Dirghajeeviteey. In: Charak Samhita, Puravardha. Reprint ed. Varanasi: Chaukhamba Sanskrit Sansthan; 2015:CH.SU1/42.
4. Sushrut. Atridev (Com.). Doshdhatumalkshyvrddhi vijnana. In: Sushrut Samhita. Reprint ed. Varanasi: Motilal Banarasidas; Delhi; 2015: SU.S.U.15/41.
5. Agnivesh. Charak. Dradbal. Shastri, Kashinath (Com.). Shareersamkhya shaareer. In: Charak Samhita, Puravardha. Reprint ed. Varanasi: Chaukhamba Sanskrit Sansthan; 2015:CH.S.SHA.7/8.
6. Sushrut. Atridev (Com.). Hridrog pratishedh. In: Sushrut Samhita. Reprint ed. Varanasi: Motilal Banarasidas; Delhi; 2015: SU.S.U.43/4.
7. Bhav Mishr. Mishra, Bhramshankar. Hridya rogaadhikar. In: Bhavprakash Uttarardha. Reprint ed. Varanasi: Chaukhamba Sanskrit Sansthan; Vikram Samvat 2054. BHA.PU 34/1.
8. Madhavkar. Shastri, Suderashan (Com.). Hridaroga Nidan. In: Madhava Nidan. Puravardha. Reprint ed. New Delhi: Chaukhamba Publication; 2005; MA.NI.29/1.
9. Agnivesh. Charak. Dradbal. Shastri, Kashinath (Com.). Kiyantah shirsheeya. In: Charak Samhita, Puravardha. Reprint edition. Varanasi: Chaukhamba Sanskrit Sansthan; 2015: CH.S.SU.17/34.
10. Agnivesh. Charak. Dradbal. Shastri, Kashinath (Com.). Kiyantah shirsheeya. In: Charak Samhita, Puravardha. Reprint edition. Varanasi: Chaukhamba Sanskrit Sansthan; 2015: CH.S.SU.17/34.
11. Madhavkar. Suderashan Shastri (Com.). Hridaroga Nidan. In: Madhava Nidan Puravardha. Reprint ed. New Delhi: Chaukhamba Publication; 2005; MA.NI 29/1.
12. Agnivesh. Charak. Dradbal. Shastri, Kashinath (Com.). Trimarmiyachikitsa. In: Charak Samhita. Uttarardha. Reprint ed. Varanasi: Chaukhamba Sanskrit Sansthan; 2015: CH.S.CHI.26/77.
13. Ronald G. Victor. Risk Marker and the Primary Prevention of Cardiovascular Disease. In: Braunwald E, Zipes DP, Libby P (Eds). Braunwald's Heart Disease; 10th Ed. Philadelphia Elsevier; 2014:891-933.
14. Agnivesh. Charak. Dradbal. Shastri, Kashinath (Com.). Kiyantah shirsheeya. In: Charak Samhita. Puravardha. Reprint ed. Varanasi: Chaukhamba Sanskrit Sansthan; 2015: CH.S.SU.17/30.
15. Agnivesh. Charak. Dradbal. Shastri, Kashinath (Com.). Kiyantah shirsheeya. In: Charak Samhita, Puravardha. Reprint ed. Varanasi: Chaukhamba Sanskrit Sansthan; 2015: CH.S.SU.17/34.
16. <https://health.clevelandclinic.org>
17. www.mccallumplace.com
18. www.sciencedaily.com
19. www.everydayhealth.com
20. Agnivesh. Charak. Dradbal. Shastri, Kashinath (Com.). Kiyantah shirsheeya. In: Charak Samhita. Puravardha. Reprint ed. Varanasi: Chaukhamba Sanskrit Sansthan; 2015: CH.S.SU.17/30.
21. Agnivesh. Charak. Dradbal. Shastri, Kashinath (Com.). Kiyantah shirsheeya. In: Charak Samhita. Puravardha. Reprint ed. Varanasi: Chaukhamba Sanskrit Sansthan; 2015: CH.S.SU.17/34.
22. Ronald G. Victor. Risk Marker and the Primary Prevention of Cardiovascular Disease. In: Braunwald E, Zipes DP, Libby P (Eds). Braunwald's Heart Disease; 10th Ed. Philadelphia: Elsevier; 2014:891-933.
23. Agnivesh. Charak. Dradbal. Shastri, Kashinath (Com.). Abhyaamalaki Rasaayanpaad. In: Charak Samhita. Uttarardha. Reprint ed. Varanasi:

Chaukhamba Sanskrit Sansthan; 2015: CH.S.CHI.1-4/30-35.

24. Dr. Ishwar N. Acharya. Yogic Management of CAD and Hypertension. In: Yogic Management of Cardiovascular Diseases. Morarji Desai National Institute of Yoga. New Delhi. 2008. 19-38.
 25. Swami Shankardevanand. Aasana and Pranayaam. In: Yoga on Hypertension. Reprint edition. Munger, Bihar, India. Yoga Publicatoin Trust.2006.79-93.
 26. Swaami Saraswati Satyaanand. Introduction to Mudraa. In: Aasan Praanaayaam Mudra Bandh. Munger Bihar, India: Yoga Publication Trust; 2008. 421-467.
 27. Dr. Ishwar N. Acharya. Yogic Management of CAD and Hypertension. In: Yogic Management of Cardiovascular Diseases. Morarji Desai National Institute of Yoga. New Delhi. 2008. 19-38.
-

Source of Support: Nil

Conflict Of Interest: None Declared

How to cite this URL: Punita Pandey: Relevance And Perspective Of Indian System Of Medicine In Prevention And Management Of Cardiovascular Disease - A Review. International Ayurvedic Medical Journal {online} 2018 {cited June, 2018} Available from: http://www.iamj.in/posts/images/upload/1299_1305.pdf