



ROLE OF AYURVEDA IN PREVENTION OF HRIDROGA (CORONARY HEART DISEASE)

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Abstract

Atherosclerotic cardiovascular disease (CVD), especially coronary heart disease (CHD), is the leading cause of premature death worldwide. It is on the rise and has become a true pandemic that respects no borders. Within the coming decades the disability-adjusted life years (DALYs) estimate due to CVD is expected to rise from a loss of 85 million DALYs in 1990 to a loss of 150 million DALYs globally in 2020, thereby remaining the leading somatic cause of loss of productivity. The major CVD risk factors include unhealthy dietary practices such as high consumption of saturated fats, salts and refined carbohydrates and tobacco use in the form of smoking or chewing as well as low consumption of vegetables and fruits along with physical inactivity.

In Ayurvedic literature, features of CVD correlate with *Hridroga* which has been stated to be caused by intake of faulty diet such as Guru (heavy) foods and faulty stressful life style as well as excessive exertion which in turn cause provocation of *Doshas* and vitiation of *Rasa Dhatu*, thereby leading to the development of *Hridroga*. The primary aim of Ayurveda is the maintenance of optimal health and well being through a comprehensive approach that involves body, mind and environment. Diseases result from the disturbance in homeostasis of *Tridosha* (*Vata, Pitta, Kapha*) which are affected by dietetic factors, lifestyle as well as environmental factors. Chronic and non-communicable diseases such as CHD are preventable with changes in diet, lifestyle, and environment. Ayurveda emphasizes regulation of *Ahara -Vihar* in the form of *Ashtaharvidhi Visheshayatanani, Dwadasha Ashanpravicharana, Dinacharya, Ratricharya, Ritucharya* and *Sadvritta*. Various researches have proved that Ayurvedic dietetic and lifestyle measures have definite role not only in primordial and primary prevention of CHD but these are equally beneficial as a supportive measure in secondary and tertiary prevention.

Key Words: Prevention, *Ahar, Vihar, Hridroga*

INTRODUCTION:

The increasing stress during the work and rapid industrial growth, changing dietary habits and various types of foods such as preserved food items and fruits, excess amount of soft drinks and beverages, canned foods along with lack of exercise result into the disturbance of *Agni* or metabolism and ultimately cause various chronic and non communicable diseases. Coronary Heart Disease (CHD) or Ischemic Heart Disease (IHD) is one of such disease which denotes the myocardial impairment due to imbalance between coronary blood flow and myocardial requirement. The most common cause of IHD is the atherosclerosis of coronary artery which is multifactorial in origin and includes involvement of various factors such as cigarette smoking, high blood pressure, elevated serum cholesterol, diabetes, obesity, sedentary habits and stress. ¹ The incidence of IHD is 3-5 times higher in smokers who smoke 20 cigarettes per day compared to non smokers. A diet which is rich in saturated fat and cholesterol is associated with increased incidence of atherosclerosis. Although our life expectancy has doubled in the last 150 years- but too many people still die prematurely from, or are disabled by, CHD. Within the coming decades the disability-adjusted life years (DALYs) estimate due to cardiovascular disease (CVD) which includes IHD, hypertension, cerebrovascular disease,

congenital heart disease and rheumatic heart disease, is expected to rise from a loss of 85 million DALYs in 1990 to a loss of 150 million DALYs globally in 2020, thereby remaining the leading somatic cause of loss of productivity. Obesity, insulin resistance and type 2 diabetes mellitus are increasing and are strong risk factors for CHD. In the light of the projection of large increases in CHD throughout the World, CHD is likely to become the most common cause of death Worldwide by 2020.²

In Ayurvedic classical texts clinical features of heart diseases of modern era are mentioned in the context of *Hridroga* and feature of CHD especially resemble with those of *Vatika Hridroga*³ and *Krimija Hridroga*⁴. The role of diet and lifestyle have been well considered as etiological factors responsible for generating heart diseases. Careful obeying the rules mentioned under *Swastha Vritta* (preventive medicine and Hygiene) such as proper dietary habits, *Dinacharya* (day regimen), *Ratricharya*⁵ (night regimen) and *Nidra*⁶ (sleep), *Ritucharya*⁷ (seasonal regimen), *Sadvritta*⁸ (good conduct) and *Achara Rasayana*⁹ (promotive ethical practices) and use of *Rasayana*¹⁰ (rejuvenation therapy) are some of the measures which can prevent IHD at all levels.

Nidana (Etiology) of Hridroga (CHD)

The following etiological factors are responsible for causing *Hridroga* as mentioned in *Madhava Nidana*¹¹:

1. Related to diet (Ahar)

Regular intake of foods having following properties causes *Hridroga* :

Ati Guru Anna (grains having excessive heavy property)

Ati Ushna Anna (grains having excessive hot property or potency)

Foods having *Kashaya* (astringent)

and *Tikta* (bitter), *Rasa* (taste)

2. Related to Lifestyle (Vihar)

The following factors and lifestyle may cause *Hridroga* :

Excessive hard work, trauma, taking a meal before complete digestion of previous one, anxiety and suppressing natural urges.

Table No.1. Risk Factors for CHD¹²

S.No.	Non modifiable	Modifiable
1.	Age	Cigarette smoking
2.	Male gender	High blood pressure
3.	Family history of CHD	Elevated serum cholesterol
4.	Genetic factors	Diabetes
5.	Personality	Obesity
6.	-	Sedentary habits
7.	-	Stress

Coronary risk factors for Asian Indians¹³

S.No	Non modifiable	Modifiable
1.	Male age > 35 years	Non Lipid - HT, cigarette smoking/tobacco use , DM /Insulin resistance syndrome, BMI >23, Homocysteine >10 mmol/L
2.	Female age >45 years	Lipid - Total cholesterol >150 mg/dl,Triglycerides >150 mg/dl, LDL Cholesterol >100 mg/dl ,HDL <40 mg/dl in males and < 50 mg/dl in females , TC/HDLc>4.5, LDLc/HDLc >3.5 and Apo A/ApoB<1.2
3.	Family history of Premature CAD at age <55 years	

Samprapti (Pathogenesis) of Hridroga (CHD)

Samprapti (pathogenesis) of *Hridroga* as mentioned in *Sushruta Samhita* can be interpreted as under^{14,15}:

Prevention of Hridroga (CHD)

Charaka gives the two main goals of *Ayurveda* as i) protection of health and promotion of vitality of a healthy person and ii) cure of disease of a patient¹⁸. *Ayurveda* recognizes differences in the nature of our physical bodies (*Prakriti*) and does not treat an organ / system in isolation. It gives special attention to individual peculiarities such as *Prakriti*, *Satmya*, *Sara*, *Samhanana* and so on while dealing with the patients.¹⁹

For emergence of diseases etiological factors are essential and the best way of their prevention is removal or avoidance of etiological/ risk factors. From the point of view of prevention, diseases can be classified as follows: *Nija* (Endogenous), *Agantuja* (Exogenous) and *Manas* (mental).²⁰ Endogenous diseases result from imbalance of three types of *Doshas* and exogenous diseases are caused by external factors such as *Visha* (poison), *Vayu* (air), *Agni* (fire), *Samprahar* (trauma) etc and involvement of *Doshas* occurs in later stages while *Manas* (mental) illness occurs primarily due to imbalance of *Manas Dosha* (*Raja* and *Tama*) resulting from failure to obtain favorable substances and obtaining substances which are unfavorable. According to *Ayurveda*, the three

pillars of healthy and long life are i) *Ahar*, i.e. proper diet ii) *Vihar*, i.e. proper activities and iii) *Brahmacharya*, i.e. divine lifestyle and control of sexuality.²¹ *Ayurveda* advocates specific rules for taking diet such as *Ashtaharvidhi Visheshayatanani*²² and *Dwadasha Ashanpravacharana*²³ and also specific regimens for regulating lifestyle such as *Dinacharya*²⁴, *Ratricharya*²⁵, *Ritucharya*²⁶ and *Sadvritta*²⁷. A person whose lifestyle is based on these principles and is truthful, liberal, forgiving and serves noble persons will never be sick²⁸. *Ayurveda* gives importance to *brahmacharya* which is usually translated as celibacy but *Brahamacharya* is not just celibacy. Its literal meaning is living a divine life for which control of sensuality and sexuality and right use of creative power are essential.

From epidemiology point of view, diseases are the results of interaction of triads of epidemiology i.e. agent, host and environment.²⁹ On the basis of communicability, disease can be classified broadly as communicable and non communicable. The prevention of communicable diseases is based upon actions targeted towards specific agents and their modes of transmission and specific measures such as vaccination used to build host defenses. On the other hand, prevention of non communicable diseases is basically related to control and modification of risk

factors of the disease which relate primarily to *Ahar* (diet) and *Vihar* (lifestyle).

Role of *Ahar* in prevention of *Hridroga* (CHD)

Ahar (diet) and *Vihar* (lifestyle) are the key modalities of prevention and management of diseases in *Ayurveda*. In order to maintain health of a person *Ayurveda* advocates increment of *Dosha*, *Dhatu* and *Mala* which are below their equilibrium level and decrement of those having levels above their equilibrium state, although their levels have to be ascertained by *Anuman* (by estimation) on the basis of respective signs and symptoms visible in the person to be treated.³⁰

A good diet promotes good health and prevents the onset of disease. The right kind of food is the most important factor in the promotion of health and the wrong kind of food is the most important factor in the diseases. Food should nourish it should help to play a vital role fighting ailments and it should also be in good taste.

The importance of diet can be understood with the fact that it has been called as *Mahabhaishajya* (the super most medicine) in the *Kashyap Samhita*. There is no medicine like *Ahar* (diet) because it is possible to keep people free of the diseases and even after giving proper medicines a good diet is desired for the survival of the person, so the importance of the diet as *Mahabhaishajya* is self approved.³¹

In *Kashyap Samhita*, it has been mentioned that satisfaction, nutrition, patience, *Buddhi* (critical understanding), enthusiasm, virility, strength, good voice, *Ojas*, glow, geniusness and radiance etc. all such qualities in the human beings develop from only diet which is congenial, appropriate in quantity and time having six *Rasas*.³²

For the purpose of taking food, the stomach capacity should be divided into three parts. One part of it should be filled up with solid food, the second part with liquids and the third part should be left for *Vata*, *Pitta* and *Kapha*.³³

The entire benefit can not be obtained by taking food simply on the basis of the quantity of intake. There are eight factors – *Prakriti*, *Karana*, *Samyoga*, *Rashi*, *Desh*, *Kala*, *Upayoga* *Samstha* and *Upayokta* which determine the utility of food and are jointly responsible for bringing about the requisite benefits.³⁴

Heart is the seat of excellent *Ojas* (essence of *Dhatu*s) and reservoir of consciousness. In order to protect the heart, the great vessels and the *Ojas*, one should avoid particularly the causes of the affliction of mind. One should also take the measures which are conducive to heart and *Ojas* and cleansing of *Srotas* and also make efforts for serenity of mind and knowledge.³⁵

Dietetic regimen has certainly an important role in prevention of *Hridroga*. Vegetarian diets with less than 10% fat and no dairy products are beneficial. It is recommended to

limit saturated fat intake to less than 7 % of calories, trans fatty acids should be kept as low as possible and dietary adjuncts like dietary fiber dietary plant stanol /sterol esters etc should be used to improve the likelihood of attaining LDL-c goals. Alcohol consumption should be avoided and salt intake should be reduced to less than 5 gm daily or less.³⁶

Role of Vihar in Prevention of Hridroga (CHD)

The factors causing CHD which can be modified by proper *Vihar* (lifestyle) include cigarette smoking, diabetes, elevated serum cholesterol, obesity, sedentary habits, high blood pressure and stress.

Cigarette smoking may be the single most preventable cause of death and its cessation reduces risk of CAD mortality by 50% in one year. The coronary mortality risk is reduced to that of non smokers after a period of 10 years .³⁷

Cessation of smoking is generally not an easy task for a habitual smoker. For quitting smoking '*Padanshika Krama*' of gradual quitting of bad habit in parts and proportionate increase of good habit gradually and ultimately adopting the good practices and quitting the bad practices, can be beneficial for a smoker. It has been elaborated in *Ayurvedic* texts that a wise person should alienate himself from the habitual malpractices gradually. Adoption of good practices should also be in the similar way. In the first phase alienation and adoption

should be limited to the quarter portion. The second phase should be on the next day and succeeding phases at the interval of two and three days respectively. Demerits given up gradually and merits adopted in the same way become ever prevented and unshakable respectively. A smoker can get rid of bad habit of smoking by gradually replacing smoking with *Ayurvedic* medicated *Dhoompan* in above stated manner and it should be further used in a regulated manner as per indications in *Dincharya* (daily regimen).³⁸ Medicated *Dhoompan* being non habit forming can be quit as per requirement

Regulation of *Nidra* (sleep) is also important. *Sharir Dosha Kapha* along with *Mano Dosha Tama* are responsible for *Samyak Nidra*³⁹ and both of these are elevated at night in physiological manner. Ignoring normal sleep time of night aggravates *Vata* and *Pitta Dosha* ⁴⁰ and this increases *Rukshta* in body ⁴¹which too adds to *Vata Prakopa* and *Vata Prakopa* is known as mainstay in production of the disease EHT.

Sedentary habits contribute to the pathogenesis of Diabetes mellitus, obesity and hypertension which in turn increase the risk of CHD. In *Ayurveda* regular *Vyayam* (exercise) has been advocated as a part of *Dincharya* (daily regimen) and it should be performed till the appearance of signs of proper *Vyayam* characterized by appearance of perspiration, increased respiration, lightness of the organs and feeling of obstruction in cardiac region . ⁴²

Exercise conditions the skeletal muscles which decreases oxygen consumption for the same workload. It also lowers heart rate for any level of exertion. It is recommended that aerobic isotonic exercises with a goal of 85 % age predicted maximal heart rate for 20 to 30 minutes be achieved 3 to 4 times a week for secondary prevention.⁴³

Stress can be reduced regulating daily regimen, proper exercise and *Yogic* practices along with meditation.⁴⁴

Discussion

Modern medical science is materialistic having concern primarily with the body and drugs are the mainstay of its management. On the other hand, *Ayurveda* being a holistic system is concerned with development of physical, mental as well as spiritual aspects. With the advancement of the modern medicine powerful drugs have conquered many infections and decimated epidemics. Rapid growth of diagnostic techniques and advances in surgical procedures, molecular biology and genetic engineering are commendable. However, it primarily depends on drugs which have many harmful side effects. It does not have full answers for many chronic and degenerative diseases whose incidence is increasing rapidly. Many patients of chronic and non communicable diseases such as hypertension and heart disease have to take life-long treatment using drugs that are not only expensive, but have many undesirable side effects. In such situation the

only option that remains is the primordial and primary prevention of chronic and non communicable diseases with proper implementation of dietary and lifestyle practices. *Ayurveda* has vast scope in this area. *Ayurveda* considers improper and unnatural food habits and lifestyle as important factors in causation of disease. Undigested, junk food and accumulated wastes are considered toxic as they produce changes in blood, lymph and other body fluids resulting in imbalance of elements ⁴⁵. With regulated diet, many diseases can be prevented and cured and without that, drugs can not give a real / lasting cure. Ideal diet according to *ayurveda* should be nutritionally balanced, pleasing to senses, easily digested, fresh and natural, obtained, prepared, served and eaten with a pure and calm mind and taken in moderation.⁴⁶ Pleasantly agreeable, taken in appropriate amount at proper time and easily digestible diet satisfies our senses and nourishes our body. Such a diet is also heart-healthy.⁴⁷

Dietary habits are known to influence cardiovascular risk, either through an effect on risk factors such as serum cholesterol, BP, body weight, and diabetes, or through an effect independent of these risk factors. Regular physical activity and aerobic exercise training are related to a reduced risk of fatal and non-fatal coronary events in healthy individuals, subjects with coronary risk

factors, and cardiac patients over a wide age range.

A sedentary lifestyle is one of the major risk factors for CVD. Physical activity and aerobic exercise training are therefore suggested by guidelines as a very important non-pharmacological tool for primary and secondary cardiovascular prevention.⁴⁸

Conclusion

CHD is our modern epidemic affecting population. It is not an unavoidable attribute of aging. If it is prevented, life expectancy of men can be raised by 3.4 years to 9.4 years and even higher in women.⁴⁹ *Ayurveda* advocates proper use of diet and regulation of lifestyle from very early life, thus if followed as per instructions various *Ayurvedic* measures can prevent CHD in primordial and primary stages and progress of the disease to later stages can be stopped.

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