REDVET - Revista electrónica de Veterinaria - ISSN 1695-7504
Vol 25, No. 1S (2024)
http://www.veterinaria.org
Received: Revised: Accepted :

The Use Of Ayurveda In Preventive Cardiology

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Abstract:
Even contemporary medicine now recognizes that a number of modifiable risk factors are the primary cause of cardiovascular illnesses. In order to avoid cardiovascular illnesses by lifestyle adjustment, Ayurveda has used a variety of preventive strategies, including Dinacharya (daily regimes), Ritucharya (seasonal regimes), Ratricharya (night regimen), and Sadvrtta (right code of conduct). A sincere effort has been made to compile disparate data on CVD prevention in this article. Dietary modifications are raising the risk of cardiovascular diseases in the context of cardiology. Ayurvedic prophylactic measures in the field of cardiology, such as Rasayan treatment, Panchakarmachitiksa, diet and lifestyle adjustment, yoga, and pranayam for cardiovascular disease prevention, should be implemented in order to prevent additional difficulties.Numerous medications, herbal remedies, Rasyana, PathyaApathya, and various yoga methods are listed in Ayurveda as having amazing preventive and therapeutic effects on heart conditions. Additionally, since everyone needs to be healthy, all Ayurvedic branches can cooperate to prevent heart disease and other illnesses. We will talk about it in this paper. Ayurvedic Use in Cardiology Prevention.

Keywords: Ayurveda, Preventive, Cardiovascular Diseases, Dinacharya, Ratricharya, Diet, Lifestyle, Rasayan Therapy, PanchakarmaChitiksa, Pranayam, Guggulu, Arjuna, Ashwagandha, Ahara

Introduction:
In Ayurveda, "Hrudaya" is a topic of conjecture. Hrudaya's references are dispersed and frequently make reference to various organs depending on the situation. However, in the case of Hrudroga, Hrudaya should be interpreted as uroHrudaya (Heart). Hrudroga (heart disease) is the general term for the vyadhi (diseases) associated with Hrudaya. Since hrudaya is one of the trimarma (important points), it has received particular attention in the CharakaSamhitha'sTrimarmiyaChikitsaAdhyaya. According to the doshic dominance, Charaka has identified five different kinds of Hrudroga. On the other hand, Hridroga has its own chapter in AchrayaSushruta. Even though several treatment techniques have been described for hrudroga, the preventive elements are as important.Heart and blood vessel illnesses are referred to as cardiovascular diseases (CVDs) in modern medicine. [1,2]
According to Ayurveda, the heart is one of the trimarmas, or essential organs, in humans. Heart and vascular system diseases are collectively referred to as cardiovascular diseases. Congenital heart disease, hypertension, and ischemic heart disease are the main ailments. In many poor nations, rheumatic heart disease remains a significant health concern. The nutrition and lifestyle patterns of the entire world's population have transformed in recent years. The incidence of cardiovascular disease has increased as a result of dietary and lifestyle changes, a lack of exercise, elevated stress levels, and environmental changes. In the instance of cardiology, Ayurveda has described Pranayam, Yoga, PanchakarmaChikitsa, diet and lifestyle changes, and Rasayan therapy as ways to prevent the disease.Ayurveda includes literature on the causes, pathophysiology, kinds, prevention strategies, and treatment of cardiovascular illnesses. [3]

Cardiovascular diseases (Hridroga)
Heart and vascular system diseases are collectively referred to as cardiovascular diseases. Ischemic heart disease (IHD), hypertension, cerebrovascular illness (stroke), and congenital heart disease are the main ailments. In many underdeveloped nations, rheumatic heart disease (RHD) remains a significant health issue. In Ayurveda, CVD is associated with Hridroga. According to AchryaSusruta, VikritaDosha enters the Hridya and also incorporates Rakta because of the repression of the natural desires, excessive consumption of Ushna, Rukshna, and Virudha food, as well as Ajirana (indigestion), etc. [4,5]

Review of Literature:
The most popular type of medicine in India is Ayurveda, a traditional medical system. Ayur, which means life, and Vedas, which means knowledge, are the two words from which the word "ayurveda" is derived. [6] Group studies of the body (sharia), sensory organs (indriyas), mind (manas), and soul (atman) are the foundation of Ayurveda, and the balance of these elements is linked to health. [7] A number of problems in the human body, including cardiovascular diseases, are caused by imbalances between them. Ayurveda offers a remedy for each of these illnesses, and it consists of a mix of medicines, food, exercise, and meditation.Many herbs are used in Ayurvedic medicine, and the mixture helps heal heart conditions. [8,9]

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In Ayurveda, the term "Hrudaya" itself refers to the role of the body's most vital organ. "Hru" means "attraction of the blood from the body," and "Da" means "donation," which is a whole word. Numerous pieces of evidence support the effectiveness of different ayurvedic medications in the management of cardiovascular conditions. According to the clinical study, Arjuna has hypertension, chronic stable angina, and congestive heart failure. [10] In rats, the antioxidant activity of the arjuna and its components, such as arjunolic acid, has a cardioprotective impact. Allium ascalonicum bulb alcoholic extract has a positive impact on rabbits' protolytic and hypocholesterolemic activity. Curcumin, a component of the rhizome of Curcuma longa Linn (turmeric), has antithrombotic, antiatherosclerotic, and hypolipidemic properties. According to recent research, natural ingredients effectively prevent, regulate, and block significant risk factors for cardiovascular disease, including oxidative stress and inflammatory mediators. Congestive heart failure, systolic hypertension, angina pectoris, atherosclerosis, cerebral insufficiency, and venous insufficiency have all been treated with medicinal herbs. [11]

The numerous allusions to cardiovascular activity seem to suggest that ancient Ayurveda had a similar idea, even if the circulatory system was not envisioned by Ayurveda in the manner that it is currently defined in modern medicine. The Samhitas contain references to the actual act of circulation. Rasa is the name given to the fluid that flows through the body since it is constantly flowing. Like a revolving wheel, the Rasa moves throughout the body. According to Sushruta, the nutritional fluid moves through the body at varying speeds, similar to those of sound, light, and water. According to Bhela, the nutritional fluid circulates throughout the body via Siras after leaving the heart. [12]

Since the Ayurvedic classics don't discuss portal circulation, renal circulation, etc., their descriptions of circulation may be excessively vague. Sushruta's depiction of blood not flowing out easily in Siravyadha (venesection) highlighted a change in the degree of circulation to the peripheral locations. According to Charaka, a very poor prognosis is indicated if the areas where vascular pulsations are typically observed abruptly stop pulsing. According to KaphajaNanatmajavikara, DhamaniPratichaya is comparable to atherosclerosis. The most significant factor contributing to cardiovascular or cerebrovascular problems, hypertension, was not mentioned in Ayurveda and can be confused with a number of other ailments, including Siravata, Raktavata, Raktagatavata, KaphavritaVyana, and others. [13]

According to the global INTERHEART study, almost 90% of the risk for CVD can be attributed to nine modifiable risk factors: dyslipidemia, smoking, diabetes mellitus, hypertension, abdominal obesity, psychosocial stress, poor diet, physical inactivity, and alcohol use. Reductions in CVD mortality rates and the avoidance of nonfatal CVD events are the hallmarks of successful preventive cardiology. [14]

According to Ayurveda, ahara is one of the three most significant foundations of human health and illness. Individuals are given extensive advice in this regard depending on a number of variables, some of which do seem innovative. [15]

In Ayurveda, doing Suryanamaskara also has a significant impact on preventing heart disease. [16]

According to a survey by the Global Burden of Disease Study, cardiovascular disorders account for the majority of deaths globally. In 2010, these surveys were carried out. Additionally, it is estimated that by 2030, 24 million people worldwide would have died from cardiac arrest. Eighty percent of the world's population relies on natural products and traditional forms of therapy to treat any illness, according to WHO data. [17]

Commonly used plants including ginkgo biloba, ginseng, and ganodermalucidum are utilized in ayurveda formulations to treat a variety of cardiac conditions, including coronary heart disease, myocardial ischemia, and hypertension. Both atherosclerosis and hypertension, which are the primary causes of cardiovascular disease, can be effectively managed with the use of herbal extracts and their constituents. Herbal treatments have multiple cellular modes of action since they contain a variety of bioactive substances. Herbal treatments offer diuretic, anti-inflammatory, vasorelaxant, and antioxidant properties. Additionally, lipid peroxidation, ROS generation, macrophage atherogenicity, endothelial dysfunction, and platelet activation are all inhibited by herbal medicines. [18]

One of the main components of Astragalusmembranaceous is Astragaloside, which is utilized as an antioxidant and to prevent cardiovascular illnesses linked to ischemia. In a reperfusion rat model of myocardial ischemia, a membraneous extract regulates heart function by enhancing energy metabolism and preventing the generation of free radicals. A well-known example of a plant used to treat and control cardiovascular diseases is Allium sativum, which offers several advantages against the occurrence of cardiovascular diseases, including inflammation, oxidative stress, hypertension, and hyperlipidemia. Lowering LDL and cholesterol levels lowers the amount of lipids in artery cells, which makes them useful in the treatment of hyperlipidemia and atherosclerosis. [19]

Cardiovascular disease, which includes peripheral artery disease, rheumatic heart disease, congenital heart disease, heart failure, elevated blood pressure (hypertension), cerebrovascular disease (stroke), and coronary heart disease (CHD) (heart attacks), is currently the leading cause of death for both men and women in both developed and developing nations. An poor diet, dangerous alcohol consumption, tobacco use, and physical inactivity are the main causes of cardiovascular disease. [20] Individuals of South Asian descent (those originally from the Indian subcontinent) are known to have a high prevalence of coronary heart disease. They are more likely to have certain metabolic disorders, such as elevated levels of triglycerides, elevated levels of total cholesterol and high-density lipoprotein ratio, type 2 diabetes, and central or visceral obesity. Cardiovascular risk is known to rise with age, smoking, blood lipid and glucose levels, hypertension, and central obesity in both men and women. [21] In both industrialized and developing nations, including India, coronary heart disease is the leading cause of mortality and disability among adults and the elderly. CHD may manifest itself in many

manifestations like a) Angina pectoris b) Myocardial infarction c) Irregularities of heart d) Cardiac failure e) Sudden death. [22]

There are two categories of risk factors for CHD: 1. Non-modifiable 2. Adaptable Genetics, age, sex, and family history are examples of non-modifiable factors. Cigarette smoking, high blood pressure, raised cholesterol, diabetes, obesity, sedentary lifestyles, and stress are all modifiable variables. The majority of families and the government in underdeveloped nations cannot afford the high expense of curative care, which is actually palliative care, such as balloon angioplasty, atherotomy, stents, and bypass surgery. Therefore, prevention is the key to addressing this CHD epidemic. In order to avoid coronary heart disease (CHD) by reversing, regressing, and retarding atherosclerosis, modern medicine has placed a strong emphasis on lifestyle factors such as nutrition, exercise, and mental calmness. The vegetarian diet, or satvikahara The concept and science of preventive cardiology for the management and prevention of congenital heart disease (CHD) are supported by two pillars: vyayama (regular exercise) and manasikavisranthi (mental relaxation) through dhyana (meditation). Ayurvedic classics have frequently cited the role of ahara, vyayama, manasikavisranthi, pathya, apathy, and avoiding mental ailments as ways to prevent heart disease. [23]

The symptoms include shaking, constriction around the heart, unconsciousness, stiffness, or lack of response. The clinical characteristics of unstable or stable angina presentations are similar to those of a vatajahridroga. These presentations can be caused by a number of circumstances, such as those that increase catecholamine secretions and, in turn, myocardial oxygen demand. This theory of the mechanism for the onset of angina pain is supported by a number of etiological factors that are mentioned in VatajaHridroga. [24]

Grandhi will grow inside vessels if a person with a potential tridoshakopa continues to consume tila, ksheera and its byproducts, guda, or similar drugs on a regular basis. Their touch with rasa causes this grandhi to progressively liquefy. Various krimis sprout from this liquid portion of grandhi and finally consume the heart. [25]

The growth of atheroma, the formation of a lipid-rich necrotic center among atheromatous lesions, and plaque rupture to produce micro thrombi or huge occlusive or non-occlusive mural thrombi are all very comparable to this description of Krimijahridroga. The development of infraction occurs when thrombi obstruct an artery lumen. It is believed that krimijahridrogalakshanas have an immediate onset and are characterized by pain that is cutting or piercing. It is challenging to control and calls for immediate action. These characteristics are comparable to those of an acute myocardial infarction. [26]

"More than 90% of incident myocardial infarctions and strokes are caused by common major risk factors, such as smoking, lipid abnormalities, hypertension, obesity, diabetes, sedentary lifestyle, low fruit and vegetable intake, and psychosocial stress," according to case-control studies conducted in India. [27]

"Persistent oral infections, like periodontitis, are a continual source of infection and have been identified as independent risk factors for low birth weight, peripheral arterial disease, cardiovascular disease, cerebrovascular disease, and respiratory diseases." The prevalence of coronary heart disease (CHD) in younger men is linked to chronic periodontitis. There is growing evidence that atherosclerotic cardiovascular disease and periodontal infection are causally related. [28]

To create a rasadushti tool for individuals at risk for CVD, a study was carried out. Psychometric investigation of 26 rasadushti symptoms in this study revealed comparatively good findings. Angamarda, aalasya, tandra, agnisaada, swaasa, tama, alpacheshta, saitya, pandutva, hrullasa, jwara, nidra, srotorodha, praseka, arochaka, sthaulya, and so on are all included in this. Nearly every lakshana exhibits rasa-kaphadushti. (Radika Rani RK, 2017) [29]

Numerous causes of hrdroga are highlighted by Ayurveda, including excessive exertion, excessive exercise, and overuse of sodhana remedies, such as vamana, virechana, vasthi, etc. Certain psychological reasons, such as excessive worry, fear, stress, mental trauma, and physical trauma that directly affects the heart, as well as general disorders that cause sosha, can all result in hrdroga.6. Similarly, hrdroga is also caused by the suppression of natural desires (vegadharana), including thirst, tears, sramaswasa, adhovata, and cough. [30]

When natural desires are suppressed, Vatha functions erratically, which might eventually and subtly result in hridroga. The metabolic syndrome is explained by Ayurveda in relation to sthoulya and prameha, which are factors in today's hridaya issues. When examined closely in the context of contemporary physiology, these variables indicate that a number of additional clinical problems can eventually lead to hridroga. [31]

The active ingredients in herbal treatments have been isolated and subsequently employed commercially to manufacture drugs. Examples of herbal products that have been used globally to treat CAD and other CVDs include digitoxin from foxglove (Digitalis purpurea), ephedrine from ma-huang (Ephedra sinica), reserpine from snakeroot (Rauwolfiaserpentina), salicin from willow bark (Salix alba), and others. [32]

With mortality rates of 11% in Indian cities and about 5% in rural regions, CAD is the leading cause of death in the country. Chronic disease is quickly spreading throughout the world. By 2020, this will account for the majority of deaths worldwide, with CHD accounting for almost 71% of all fatalities. According to studies conducted worldwide, industrialized countries will account for about 60% of cardiovascular disease-related mortality. However, compared to other economically developed nations worldwide, cardiovascular illnesses are less common in China and India. [33]

Known as "the science of life," Ayurveda is among the world's oldest medicinal systems. Its roots can be found in the Indian subcontinent during the Vedic period, which began thousands of years ago. Life, or "ayu," according to Ayurveda, is the union of the mind, body, spirit, and senses, and health is the result of these elements being in balance. [34]

REDVET - Revista electrónica de Veterinaria - ISSN 1695-7504
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http://www.veterinaria.org
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Charaka Samhita, Sushruta Samhita, and AshtangaHridaya are the three main classical works upon which Ayurvedic wisdom is founded, together with six smaller texts. In addition to descriptions of several ailments, diagnostic techniques, and food and lifestyle advice, these ancient writings provide comprehensive descriptions of over 700 plants and 6000 formulas. Through dietary and behavioral changes, medication administration, and detoxification and rejuvenation therapies, Ayurvedic treatment aims to restore the equilibrium of the disrupted body-mind matrix. Dravyagunavigyan is the name of the area of Ayurvedic research that studies plants and their properties. Based on this understanding, ayurvedic formulations are made, which mostly consist of herbs.A single herb or combinations of several plants in any form—juice, extract, powder, pill, or decoction—can be found in traditional and proprietary Ayurvedic formulations. [35]

Around one-third of deaths globally are attributable to cardiovascular disease. In recent decades, both industrialized and developing nations have seen an increase in the burden of sickness. Atherosclerosis and/or high blood pressure are common causes of cardiovascular disease (CVD), a general term for a variety of conditions that impact the heart and blood arteries and can have fatal consequences. [36]

The vitiated state of Rasadhatu, one of the seven types of functionally different tissue elements in the human body, has been thought in Ayurveda to be the origin of ailments pertaining to the heart and other bodily channels. One of the numerous clinical structures listed in Ayurveda that must be deduced from observable clinical symptoms is Rasadhatudushti (RD), also known as vitiated Rasadhatu. The prevalence of RD was higher than that of any other Dhatus (functionally separate bodily components) in an observational research conducted in 2010 among 250 instances of acute coronary artery disease (Appendix 1). [38] Both CVD and contemporary lifestyle disorders are Santarpanothavyadhis (diseases caused by over-nutrition), according to Ayurveda. A sedentary lifestyle (Avyayama) combined with excessive calorie intake (Atipurana) causes a disordered metabolism of macronutrients, primarily lipids and carbs. In Ayurveda, several elements have been identified as specific causes of RD. There was insufficient actual data about the relationship between RD and CVD, despite the fact that the literature review offers a reasonable theoretical correlation. The study was an effort to investigate this understudied field in order to determine the importance of RD, if any, in those at risk of CVD. [39]

17.3 million cardiovascular fatalities occurred in 2008, with 7.3 million attributable to myocardial infarction and 6.2 million to stroke, according to the World Health Organization's (WHO) worldwide status report on non-communicable illnesses [40]. Additionally, compared to middle- and high-income nations, CVDs have been seen to be more common in low-income nations like India [41]. Although the exact cause is unknown, many biological processes, social factors, and their interplay could be to blame for India's higher death rate. It seems that the percentage of deaths in India that are attributed to CVDs will present a significant socioeconomic issue for both caregivers and the healthcare sector [42]. Therefore, it's critical to comprehend the biological and social factors and find therapy approaches that are both affordable and show promise. Furthermore, hyperlipidemia is linked to diabetes and atherosclerosis, and it is known to rise with age, stress, sedentary lifestyle, and poor diet [43]. Early-onset atherosclerotic cardiovascular disease (ASCVD) has increased exponentially, according to the Lipid Association of India's 2016 consensus statement [44]. Risk factors for CVD include smoking, poor eating habits, physical inactivity, and hyperlipidemia [45].

Objectives:

- To assess the role of Ayurved in prevention of cardiovascular diseases.
- To assess the Ayurvedic literature in various cardiovascular diseases.
- To assess Ahara, Vihara, Yoga, Rasayan, Panchakarma having role in preventing various cardiovascular diseases.

Research Methodology:

This section, which includes a chapter on the prevention and management of CVDs in Ayurveda, was completed by consulting many Ayurvedic classic texts, research articles, and periodicals.

REDVET - Revista electrónica de Veterinaria - ISSN 1695-7504
Vol 25, No. 1S (2024)
http://www.veterinaria.org
Received: Revised: Accepted :

Result and Discussion:
IMPORTANCE OF HRIDAYA:

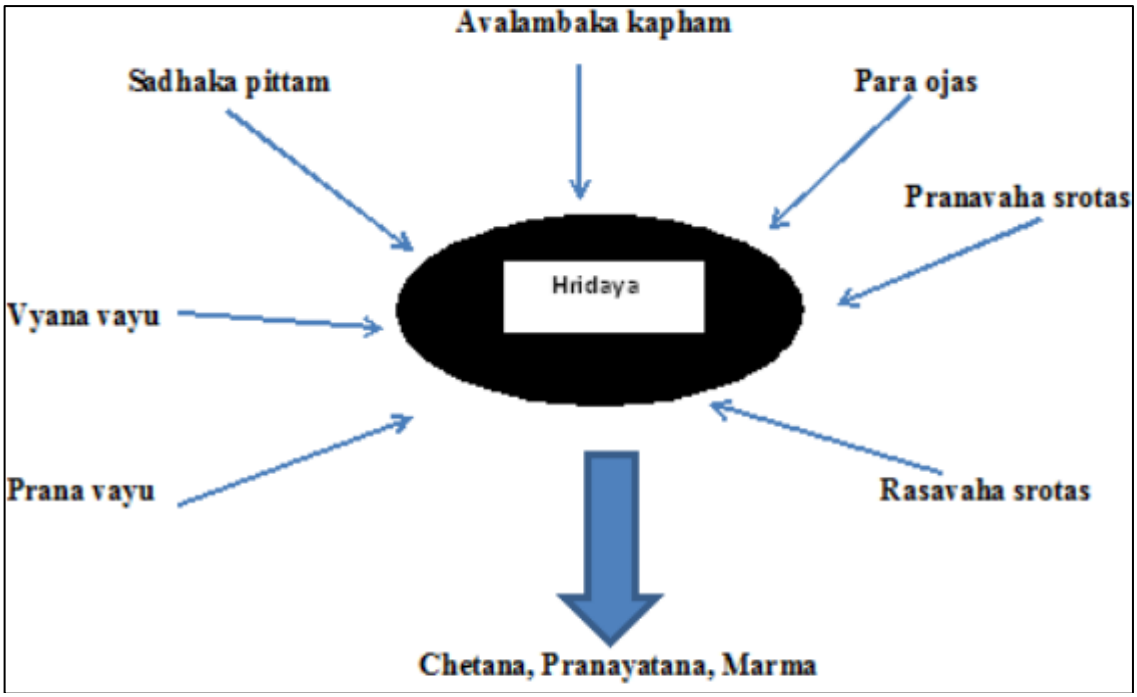

Figure 1: Factors making Hridhay vital

Ayurveda has a variety of herbal remedies that can help prevent and manage a number of CVD symptoms. [46]

Table no. 1: Cardio protective single drugs in Ayurveda

Agnideepana & Vata anulomana	Lekhaneeya	Hrdya	Other beneficial drugs
Ajamoda, hingu, pippali, sunti etc	Vaca, haridra, guggulu, daruharidra etc	Amra, amrataka, lakucha kuvala, matulunga karamardaka etc.	Gokshura, pushkaramoola, arjuna, silajatu, punarnava, brahmi, rasona, vanapalandu

Table no. 2: Examples of formulations with action on Hridaya

Ghrtm	Kwatam	Gutika	Coornam	Rasayana	Arishtam
Pipplyadi Ghrita, sunti ghrtm, arjuna ghrtm	Pathyadi Kwatha, dasamoola ks, Rasonadi kwatha Vidaryadi kwatha	Shilajitwadi vati, Chandraprabha vati, Prabhakara Vati Hridayarnava rasa	Arjuna twak churna, Pippalyadi churna haritakyadi churna, Hinguvachadi churna Dwiruttara churna	Amalaki rasayana Agasthya rasayana, Bhallataka Pippali rasayana	Parthadyarishtam Arjunarishtam

Prevention of Cardiac Diseases – Ayurvedic Wisdom
The prevention and development of a number of clinical diseases are caused by the consumption of both wholesome and unwholesome foods. Ninety percent of cardiovascular illnesses are thought to be avoidable. As the cornerstone of preventive medicine, one should be required to adhere to a daily diet that follows the guidelines for food consumption while taking into account the aaharavidhi described in the classics. Population strategy, primordial, primary, and secondary prevention are the categories under which the preventive approach to cardiology falls.

Population Strategy: A preventive strategy targets the entire population, not just specific individuals. Through public awareness at all levels, starting with primary education, Ayurvedic principles like nidanparivarjan, daily routines that include regular physical exercise, proper control of sareera as well as manasavegas, sadvritta (following the right conducts of life), and dietary rules can be spread throughout society.

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Nidanparivarjan encompasses viharajhetu, aaharajhetu, ojaparirakshan, strotasprasadanm, and nidanparivarjan of manashetu. The foundation of life, Hridaya, is the location of para oja. Rasayan can be administered to the body to protect it. Aacharrasayan ought to be incorporated into daily living. Strotasprasadanamdravyas are dravyas that clean strotas and prevent pore clogging, which helps avoid atherosclerosis. Rasona, for instance, helps reduce triglycerides and cholesterol. Stay away from manashetu like bhaya and chinta. A person who has more self-confidence is likewise more optimistic about life. Additionally beneficial for lowering stress and enhancing optimistic thinking is meditation. Asanas such as Padmasana, Siddhasana, Simhasana, Shavasana, and Sooryanamaskar aid in blood circulation regulation and heart muscle strengthening. Heart conditions can benefit from yoga mudras like Hridaya, Shoonya, and Aakasha. The heart rate rises with excessive physical exercise. Atrial fibrillation could result from it. Therefore, it is important to exercise properly. [47]

Primordial Prevention: The fundamental idea of primordial prevention for heart diseases is a lifestyle based on constitutional principles and seasonal adaptation. By syncing with nature, Ayurveda offers adequate options to restore the actual rhythm of the natural world. By preventing potential danger factors, the proper administration of Dinacharya, RituCharya, and Sadvritta, as well as Aachararasayana, which encompasses personality development and mental health care, contributes to this primordial prevention level.

Primary Prevention: By delaying or preventing the onset of disease, dietary changes such as consuming less salt and more fruits, vegetables, pulses, and cereals, as well as lifestyle modifications like regular exercise, controlling hypertension, abstaining from alcohol and tobacco, etc., are all part of primary prevention. For people who have a family history of CVD, this is extremely important.

Secondary Prevention: The goal of secondary prevention is to stop the disease from getting worse and from recurring. According to Ayurveda, there are various medicines that support optimal hridaya function. In order to prevent a recurrence, it is also crucial to treat the Khavaigunya in a person who has had a Hridroga. HrudyaAushadi, Pathya-Apathya, and RasayanaPrayoga are useful for this. Ayurveda recommends aahara and vihara, which include psychological aspects and consistent use of the right medications. A better control of the conditions of hridaya is the goal of various ganas found in classical writings, including Vidaryadigana by Vagbhata, Parushakadigana by Susruta, and Hridyamahakashaya (dashemaani) by Charaka.

Some research works on Ayurvedic medicines useful in CVD:
Allium sativum is Rasona. The effectiveness of garlic in CVD was more promising in a number of clinical trials and experimental research. The main bioactive ingredient, allicin, has a number of positive effects on the cardiovascular system, including lowering blood pressure, preventing oxidative stress and related ultra-structural alterations brought on by myocardial ischemic reperfusion injury, reducing atherosclerosis, inhibiting platelet aggregation, and significantly preventing arrhythmias. To evaluate the impact of 7.2 g of aged garlic extract vs a placebo on males with moderately elevated cholesterol, a double-blind cross-over trial was carried out. According to this study, garlic reduced total serum cholesterol levels by 6.1% and LDL cholesterol levels by 4.6% when compared to a placebo.
Tribulusterrestris, or GokshuraTribulus's biological characteristics include its diuretic effects, increased nitric oxide production from endothelium and nerve endings, smooth muscle relaxation, and improved inhibition of the angiotensin converting enzyme (ACE), all of which lower blood pressure. It contains saponin, which widens the coronary artery and enhances coronary circulation. A rat investigation shown that enhancement of cardiac function reduces myocardial infarction 10. In the treatment of ischemic heart disease, our cardiology outpatient department frequently uses Hrdyacoorna, a mixture of gokshura, arjuna, and sthira, of which gokshura is one of the primary ingredients.
Guggulu (Commiphoramukul): According to Ayurvedic scriptures, guggulu has both a Kapha and a Medohara impact, and its resin content improves its hypolipidemic action. Numerous research have demonstrated the beneficial effects of Ayurvedic formulations such as NavakaGuggulu, PushkaraGuggulu, VyoshadiGuggulu, Amritadi Yoga, and SudhaGuggulu on hyperlipidemia. On effort, PushkaraGuggulu shown a notable decrease in pericardial discomfort, breathing difficulties and serum cholesterol levels. Together with Hareetakicoorna, Vyoshadiguggulu shown a significant reduction in serum cholesterol levels and obesity. According to an experimental study conducted on albino rats, SuddhaGuggulu has cardioprotective activity because it raises HDL levels. It also significantly lowers serum triglycerides, which has antiglycaemic effects. [48]
PushkarGuggulu: When it comes to heart conditions, PushkarGuggulu has some noteworthy effects. After six months of treatment with Pushkarguggulu, researchers have shown that serum lipid levels, pericardial discomfort, and effort-induced dyspnea have significantly decreased.
Arjuna: Arjuna enhances cardiac muscle function, which in turn enhances the heart's pumping action. It is believed that Terminalia's inotropic action may be caused by its saponin glycosides, whereas flavonoids offer vascular strengthening and antioxidant activity against free radicals.

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Arjuna enhances cardiac muscle function, which enhances the heart's pumping action. Bark powder decoction was found to be more beneficial in treating hypertensive heart disease than congestive heart disease. Research demonstrated that Terminalia arjuna was beneficial in treating heart failure, hypercholesterolemia, and coronary artery disease. Its cardioprotective properties were attributed to its purported ability to scavenge free radicals. Terminalia arjuna has a cardioprotective effect against the damage produced by caffeine treatment, according to an experimental investigation. According to research on animals, Terminalia may lower elevated blood cholesterol levels.
Racemosainula, Research has been done to determine whether Inula is more effective than nitroglycerin at preventing angina symptoms in patients who experience chest discomfort and ECG ST-segment depression when exerting themselves. ECG ST segment depression improved after pretreatment with Inula (3 grams root powder 90 minutes before testing) or nitroglycerin, with Inula treatment producing the most improvements.
Ashwagandhachurna: Ayurveda is used to treat myocardial ischemia, coronary artery disease, ischemic cardiomyopathy, and high blood pressure. [49]

Prevention of the CVD (Hridroga)
Ayurveda's guiding principle is that prevention is preferable to treatment. Therefore, in the case of Hridroga, prevention is crucial.
1. Avoidance of Manashetu
2. Diet & life style modification
3. Rasayana therapy for Hridroga- BrahmRasayana, AmalakiRasayana, ShilajeetRasayana, AgastayaHaritaki, ChayavanprashaRasayana

Management of Heart Disease Prevention of Hridroga (cardiac disorders):
"Prevention is better than cure" is the fundamental tenet of Ayurveda. Therefore, the prevention of diseases has been given top priority in the therapy of all disorders, including hidrroga. acknowledging its significance as an essential organ that controls the circulation throughout the body. Ayurveda takes extra care to protect the heart from any damage, whether direct or indirect, as well as from other things that could cause heart disease. Avoiding certain stressors and engaging in cardio-promotional exercises are regularly advised. Ahara (diet) and Vihara (lifestyle) changes, as well as the suppression of Dharniyamansikavega (such as anger, fear, concern, etc.) are all variables that should be avoided in order to prevent emotional and mental disturbances, according to Acharya Charaka's profound vision. Because of its cardioprotective and cardiotonic qualities, several Rasayana medications for the heart (NaimittikaRasayana), such as Arjuna, Pushkarmula, and Tambula, reduce the risk of developing heart ailments when taken regularly. Anti-hyperlipidemic and antihypertensive properties, which are significant risk factors for coronary artery disease, ischemic heart disease, and heart attacks, are found in medications like Amalaki and Haritaki. AmalakiRasayana, Brahma Rasayana, AgastayaHaritakiRasayana, ChayavanprashaRasayana, and ShilajeetRasayana are beneficial Rasayana preparations for preventing heart disorders.
Prakriti (personal characteristics), Dinacharya (daily routines), Ritucharya (seasonal routines), Ratricharya (nightly regimen), and HitaaharaSevana are all emphasized in Ayurveda, which places a high value on prevention. Ayurveda therefore addresses a holistic approach to Hridaya care. Here, an effort is made to prevent CVD by avoiding modifiable risk factors. According to Ayurveda, nidanparivarjan is the most effective way to prevent illness. why prevention is preferable to treatment. Heart disease can be effectively prevented by following the dietary and lifestyle changes recommended by Ayurveda (Aahar, Vihar). Frequent exercise lowers blood pressure, cholesterol, and helps maintain a healthy weight. Doshas can be maintained at the same level by resisting natural urges. By purifying the strotas, receiving panchakarma treatment according to the right ritu helps to keep the heart healthy. In order to assist treatment and preserve health, Hridyadravya, strotoprasadandravya, and a balanced, nutritious diet are administered. [50]

Contemporary Evidences for Role of Ayurveda in Various Cardiological Conditions

- The VataKapha constitution type is seen in half of individuals with cardiovascular disease, according to a study on the "Association of Prakriri with CVD, inflammatory markers, and insulin resistance." It was determined that VataKaphaPrakriti predominates in inflammatory indicators, insulin resistance, cytokines (IL6), and risk factors for CVD. However, there is also a positive correlation between the Kapha reference group and IL6, TNF alpha, and hsCRP. Therefore, determining a person's VataKapha and KaphaPrakriti will assist in preventing cardiovascular illness in the future.
- According to preclinical research in contemporary medicine, Terminalia arjuna has potent antioxidant qualities and reduces ischemia perfusion injury. Additionally, it reduces oxidative stress and inhibits fibrotic activity. According to clinical investigations, patients with heart failure and ischemic heart disease may benefit from arjuna.
- In a recent clinical trial carried out in a tertiary care cardiology clinic, it was discovered that triphala greatly increases the cholesterol-lowering effect in patients when taken as directed as an adjuvant to atorvastatin (10 mg daily) for three months. It was determined that in patients taking statins for cholesterol management, triphala amplifies the lipid-lowering effects of the medication.

Conclusion:

Ayurveda describes Ahara, Vihara, Dincharya, Ritucharya, Yoga, and Rasayana as having beneficial effects on both preventing and curing CVDs. The studies on the above-mentioned cardioprotective medications are useful in treating CVDs. In Ayurveda, prevention and management can be accomplished effectively. Additionally, everyone may afford and benefit from Ayurvedic therapy. In Ayurveda, the concept of Hridroga is used to discuss and treat cardiovascular disorders. Cardiovascular disease can be prevented and treated with the help of a number of herbs and supplements. For the treatment of heart conditions, herbs including Rasona, Gokshura, Arjuna, Amalaki, and Guggulu, as well as their preparations, are safe and efficient. These medications reduce blood pressure, decrease platelet aggregation, have antihyperlipidemic, antiatherogenic, and cardioprotective effects.A balanced diet, regular exercise, abstinence from alcohol and tobacco, and stress management are all important ways to prevent heart disease.

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