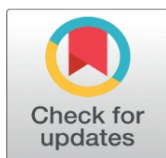
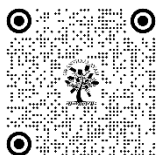


AYURVEDA DIETETICS IN THE MANAGEMENT OF HRIDROGA

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ABSTRACT

In the last few years, modernization and globalization of the lifestyle, diet and the environment have resulted in a staggering increase of cardio-vascular diseases (CVDs). Such heart related disorders are collectively known as *Hridroga* in Ayurveda. This category includes Coronary Heart Disease and other acute diseases such as heart attack, stroke, hypertension, peripheral arterial disease, Rheumatic Heart Disease, heart disease from birth and heart failure. The Mediterranean and DASH diets have been proven to effective in lowering cardio-vascular risk when taken with fruits, vegetables, whole grain and healthy fats. These diets also have potential to reduce cholesterol and blood pressure levels, particularly because of high dietary fiber and antioxidants in plant foods. On the other hand, low carbohydrate diets may help with weight loss and improve triglycerides but results in heart health may be less predictable. In Ayurveda, it is believed that the diet coupled with other interventions should relate to the *doshas* to solve cardio-vascular problems; a dietary plan should be formulated in relation to the locations of *dosha* in a human body. Ayurveda associates these disorders mostly to an ailment of the *thri-doshas* (*Vata, Pitta and Kapha*). All of them embody a concept that stands for physiological and psychological activity and their disruption is thought to cause many diseases. Rehabilitation as well as prevention of CVDs using Ayurveda, therefore involves balancing the *thri-doshas*, ignoring the ailments underlying causes and symptoms of the diseases. This paper provides an overview of traditional and non-traditional models for the delivery of heart healthy diets and reveals their respective strengths.

Keywords: Ayurveda, Hridroga, Cardio-Vascular, Diet, Pathya, Wholesome Food

1. INTRODUCTION

Increase incidences of cardio-vascular diseases due to what may be described as modern diet, lack of physical activities and increased mental stress remain one of the biggest health challenges the world over^[1]. NCD's are claimed to be a cause of more than 50% of all global deaths; CVD alone accounts for 1/5th of deaths per year^[2]. This is even more profound among the middle-aged people and countries with developed economies where heart disease and stroke are amongst the main killer diseases. Ayurveda has the concept of *Hridroga* provides a traditional background with regards to cardio-vascular ailments with an aim of making advantageous changes in diet regime, changing lifestyle and stress management that correspond to the cardio-vascular ailments of different aetiology with regards to pathogenesis^[3]. The most essential need of people is to have a healthy body which is highly associated with the dietary habits and Ayurveda directly related to it. In Ayurveda, three factors are stated as *Trayopstambha* (three pillars of life) which consist of *Aahara* (food), *Nidra* (sleeping) and *Brahmacharya* (celibacy)^[4]. Out of these, *Aahara* is considered to be the most important.

These three factors are important for building up the body for growth, providing strength and complexion. Nutrition plays dynamic role in formation of diseases as well as in the formation of human body according to *Acharya Charaka*. An Ayurvedic diet is rejuvenation of not only the body but also the soul. It is imperative to follow Ayurvedic dietary rules, because if there are any defects in the preparation and consumption of food, it would cause health disorders which should be of paramount interest to health scientists and practitioners of the twenty-first century^[5,6].

2. OBJECTIVE

To review the concept of *Hridroga* and its management through *Ayurvedic* diet.

3. MATERIALS AND METHODS

References are collected from different classical *Ayurvedic* texts like *Ashtanga Hridaya*, *Charaka samhitha*, *Sushruta samhitha*, *Yogaratanakara*, *Madhava nidhana*, *Bhojana Kutuhalam*, published research articles and research databases.

Hetu/Nidana (Aetiological factors)^[7,8]:

Ayurveda states that consumption of high amounts of *kashaya rasa* (astringent taste) and *katu rasa* (pungent taste) along with the food that is *rooksha* (dry), *khara* (rough) can cause the aggravation of *vata dosha*. Those lifestyle factors like *vyayama-adhikya* (excessive physical exercises) or *ratha-kshobha* (excessive journey / moving around rapidly), *diwaswapna* (day sleep) or *adhika maithuna* (excessive sexual indulgence) or *vega-dharana* (suppression of natural urges) or mental stress has been described to be causative for *Hridroga*. This leads to the disturbance of *vata dosha* and *kapha dosha*. Emotional distress- the fear, anxiety, anger can upset the balance of catecholamine levels and that in turn lead to high blood pressure, hyper-lipidemia causing atherosclerosis and coronary artery disease. Again, both systems of medicine acknowledge the importance of lifestyle and stress on cardio-vascular health.

Samprapthi^[9]: (Pathogenesis)

Rasavaha / praanavaha and *dasha damanis* are said to have central point in *Hridaya*. Self-analysis of the *Hridroga* indicates that in the light of *Bhavaprakash*, *Acharya Sushruta* and *Madhav Nidana*, *Hridroga* is related with *Dushya* in *rasa dhatu*. Also *Acharya Charaka* identifies *Hridroga* to be in the form of disorder arising from variations in *rasa dhatu*. So it's also the seat of *prana* and *vyana vayu*, *sadhaka pitta* and *avalambaka kapha* and therefore, any pathology in *rasa dhatu* or the heart itself will upset the *rasa* and *rakta* circulation throughout the body. *Acharya Sushruta* states that *aharja nidana* and *viharaja nidana* cause disturbance in *avalambaka kapha*, *pachaka pitta* and *vyana vayu*; *mansika nidana* affects *sadhaka pitta* affecting the heart. These imbalances have certain implications on formation of *ahara rasa* and its functions and results have been seen in *agnimandya* and abnormal form of *rasa dhatu*. Hypersensitivity of *mala-rupa kapha* with excessive *kelda* interferes with the right *Srotas* producing a condition known as *Sroto-sanga*. This can be equated to atherosclerosis or plaque formation in contemporary, if persisted, leads to *srotorodha* (blocking of body channels) and *vimarga gamana* (mis-direction of *dosha*) and finally affect the *hridaya* leading to *hridroga*.

Samanaya Lakshana (Symptoms)^[10]:

The major symptoms are *vaivarnya* (cyanosis), *murcha* (syncope), *jwara* (fever), *kasa* (cough), *hikka* (hiccough), *shwasa* (dyspnea & orthopnea), *mukha vairasya* (better taste of mouth), *trishna* (excessive thirst), *pramoha* (stupor), *chardi* (vomiting), *kaphotklesha* (nausea), *ura-shoola* (pain in chest) and *aruchi* (anorexia)

Bheda:

Acharya Charaka and *Vagbhata* describe five types ie, *vataja*, *pittaja*, *kaphaja*, *sannipaatika* and *krimija*.^[11] In contrast, *Acharya Sushruta* does not classify a *tri-doshaja* type of disease, which means that *Acharya Sushruta* has a different point of view or focus in relation to the nature of heart diseases, which might have been different depending on the severity or types of diseases that characterized a patient^[12]. *Vatika hridroga* is characterized by different types of pain due to an aggravated *vata dosha*. *Paitthika hridroga* involves symptoms like *trushna*, *daha*, *chosha*, *murcha*, *moha* etc. Whereas *kaphaja hridroga* presents with *gaurava*, *kapha-srava*, *agnimandya*, *madhuryam asasya*, typically *kaphakara ahara* and a sedentary lifestyle. *Krimija hridroga* is associated with parasitic disorders of the heart with inflammation and functional disorders described in ayurveda as *bhrama*, *klama*, *sada*, *shosha*.^[13]

Ayurveda puts the importance of *ahara* for *hridaya* to work efficiently. Regular healthy diet maintains the *tri-doshas* which is an essential factor to combat and avoids heart disorders. To avoid formation of *ama* that causes cardio-vascular

problems adequate digestion coupled by the right foods is encouraged. A Mediterranean diet's functions include supplying basic nutrients to support the heart and arteries, control cholesterol quantities, regulate body weight and improve vigour. Also, it is documented that a properly selected diet can also prevent stress, which affects the cardiovascular system. Hence, according to Ayurveda, diet plays an important key role not only in cardio-vascular wellness but also in handling of heart related ailments.

4. MANAGEMENT THROUGH AYURVEDA^[14]:

1) Treatment of *vataja hridroga*:

Snehapana (unctuous) followed by emesis (*vamana*) with *dwi-panchamoola* with *sneha and lavana*. After purification patient is given *pippali, ela, vacha, hingu, yava-kshara, sauvarchala, shunti* and *ajamoda* along with fruit juice *phala, dhanyamla, kulattha and asava*. *Vata* pacifying *taila* is used in enema (*basti*). After that, *pathya aahara* such as *shaali* (rice), *jangala-mamsa* and *ghrita*.

2) Treatment for *pittaja hridroga*:

Initially *vamana* is given with *shriparni, madhuka, madhu, sita, utpala* along with water. *Kashaya* prepared with *madhura gana dravya* and *grihta* can be used. *Madhuka siddha taila* along with honey (*madhu*) can be given as *basti*. *Pittaja jwara kashaya* can be used. *Pathya* told as *mamsa rasa* (meat soup) along with *ghrita* (ghee) processed with *madhuradi gana dravya*.

3) Treatment for *kaphaja hridroga*:

Vamana given with *vacha* and *nimbu*, powder mentioned for *vatika* can be given as a post drink. *Phaladi, mustadi, triphaladi ghrita* mixed with paste of *shyama trivrit* advised for purgation (*virechana*).

4) Treatment for *krimija hridroga*:

Initially *snehana* is advised followed by *mamsa rasa* along with rice mixed with *tila choorna* (sesame powder) and curd for three days. *Virechana* is given with *sughandhi dravya* along with *ajajai* and *sharkara*. As a post drink *dhanyamla* along with *vidanga* is given. Once the *krimi* has cleared out, edibles can be given prepared out of *vidanga* and barley.

Pathya ahara ^[15] (wholesome diet):

Shali, mudga, yava, jangala mamsa with *maricha, patola, karavellaka* are to be advised. Dash diet generally concentrated on fruits, vegetables, nuts, low fat dairy products, fish and limiting to saturated fat, sugar and beverages.

Apathya ahara-vihara (un-wholesome diet / re-recreational activities)^[16]:

Taila, takra, amla and *kashaya rasa, guru ahara, shrama, atapa, maithuna, chinta, krodha* etc are considered as *apathya*.

The reference for the cardiac diet has been taken from Ayurveda science (Ayurveda dietetics), which has clinically proven in hypertension which had shown similar in case of *hridroga too*^[17,18].

Ahara varga (Food group)	Pathya ahara (Food to be consumed)	Apathya ahara (Food not to be consumed)
<i>Shooka dhaanya</i> (Cereals)	<i>Puraana dhaanya</i> (More than one year old stored cereals will not increase the <i>kapha</i> and it is light for the digestion) such as <i>Shaali</i> (Rice), <i>Yava</i> (Barley), <i>Godhuma</i> (Wheat)	Finely processed flour of rice (<i>Pishtanna</i>), maida; <i>Naveena dhaanya</i> (Consumption of newly harvested cereals increases the <i>kleda & kapha</i> . So, these are not to be consumed)
<i>Truna dhaanya</i> (<i>Siri</i>) (Millets)	<i>Raagi</i> (Finger millet), <i>Navane</i> (Foxtail millet), <i>Sajje</i> (Pearl millet), <i>Kodrava</i> (Kodo millet), <i>Saame</i> (Little millet), <i>Oodalu</i> (Barnyard millet), <i>Jawar</i> (Graet millet), <i>Baragu</i> (Proso millet): With these millets, one can prepare recipes like upma, idli, dosa, roti and also used in place of rice.	
<i>Shimbi & Shami dhaanya</i> (Pulses / Legumes)	<i>Kulattha</i> (Horse gram), <i>Mudga</i> (Green gram), <i>Masoora</i> (Lentils), <i>Makushtaka</i> (Mothbean), <i>Aadhaki</i> (Redgram), <i>Chanaka</i> (Chik pea), <i>Groundnut</i> . Soup can be prepared from these pulses.	<i>Harenu</i> (Green Pea), Field bean, Soyabean, <i>Rajamasha</i> (Kidney bean), <i>Masha</i> (Black gram), <i>Nishpava</i> (Cow pea).
	Patra shaaka: (leafy vegetables)	<i>Bhindika</i> (Lady's finger)

<p><i>Shaaka varga</i> (Vegetables)</p>	<p><i>Sheegru patra & phala</i> (Drum stick leaves), <i>Methika</i> (Methi leaves), <i>Shefu / Sabbasige</i> leaves, <i>Baala-Moolaka patra</i> (Radish leaves), Knolkol leaves, <i>Tanduleeyaka patra</i> (Red amaranthus), Cabbage, <i>Upodika \ Paalak</i> (Spinach), <i>Jeevanti</i>(leptadenia reticulate), <i>Vastuka shaka</i> (Chenopodium album). Soup can be prepared from these vegetables. Phala shaaka: <i>Sheegru phala</i> (Drum stick fruit), <i>Kaaravellaka</i> (Bitter gourd), <i>Patola</i> (Snake gourd), Tomato, <i>Brinjal</i>, <i>Koshaataki</i> (Ridge gourd), cluster beans, Broccoli, Green chilli, <i>Bimbi phala</i> (Ivy gourd), <i>Kushmanda</i> (Ashgourd) Kanda shaaka (tuber): <i>Moolaka</i> (Radish tuber), Knolkol, Red beetroot <i>Garjara</i> (Carrot), <i>Grunjanaka</i> (shallot) Naala shaaka (stalk): <i>Palandu naala</i> (onion stalk)</p>	<p><i>Aaluka</i> (Potato) Cauliflower <i>Urvaaruka/Trpusha</i> (Cucumber) Pumpkin Soorana Sweet potato Bottle gourd</p> <p>Note: Consumption of these will increase kapha in the body.</p>
<p><i>Phala varga</i> (Fruits)</p>	<p>Madhura phala: <i>Amra</i> (Mango fruit), <i>Draaksha</i> (Dry Grapes), <i>Pakwa madhu-karkati</i> (Papaya), <i>Sapota</i> (Chikku), Watermelon Madhura-amla phala: <i>Daadima</i>(Pomegranate), <i>Pakwa Kapittha</i> (Wood apple), <i>Pakwa Chinchaa</i> (Tamarind), Pineapple Kashaya-madhura phala: <i>Sincheetika</i> (Apple), <i>Jambu</i> (Jamun fruit), Dates (dry), <i>Kharjura</i>, <i>Apakwa Amruta phala</i> (Un-ripened Guava fruit) Amla phala: <i>Amalaki</i>, <i>Naaranga</i> (Orange), Mosambi, <i>Nimbu</i> (lemon), Gajalimbe or Citrus lemon, <i>Maatulunga</i> (Citrus medica) Shushka phala: <i>Vaatama</i> (Almond), <i>Abhishuka</i> (Cashew nut), <i>Akshota</i> (Akhrota), <i>Phalgu</i> (Anjeera), <i>Udumbara</i> (Figs)</p>	<p><i>Pakwa Amruta phala</i> (Ripened Guava fruit) <i>Pakwa kadali phala</i> (Ripened Banana) <i>Panasa</i> (Jack fruit) <i>Kola / badara</i> (Jujuba fruit) Muskmelon <i>Mridwika</i> (wet Grapes) <i>Seetaphala</i> <i>Ramphala</i></p> <p>Note: These fruits will increase the kapha in the body</p>
<p><i>Ksheera & Go-rasa varga</i> (Milk & Milk products)</p>	<p>Toned milk, Pasteurized milk; Milk should be boiled before its consumption; Ghee, Butter, Samskaarita takra (Buttermilk processed with garlic, <i>jeeraka</i>, <i>sanidhava lavana</i>, curry leaves)</p>	<p>Raw milk, thick buttermilk & Lassi; Sweet dishes made out of dairy products such as pedhaa, kunda, burfi etc should be better avoided.</p>
<p><i>Aharopayogi varga</i> (Spices / Condiments)</p>	<p><i>Rasona</i> (Garlic), <i>Aardraka</i> (Ginger), <i>Haridra</i> (Turmeric), <i>Kaidarya patra</i> (Curry leaves), <i>Jeeraka</i> (Cumin seeds), <i>Ajamoda</i>, <i>Twak</i> (Cinnamomum), <i>Lavanga</i> (Clove), <i>Palaandu</i> (Onion), <i>Hingu</i> (Asfoetida). These are having <i>agnideepana</i> & high ORAC (Oxygen Radical Absorbance Capacity) values. Higher ORAC value, better will be oxygen carrying capacity of blood & lung oxygen capacity.</p>	<p>Too salty Too spicy food articles Artificial colouring agents & sweeteners better to be avoided.</p>
<p><i>Taila varga</i> (Cooking oils)</p>	<p>As per the area of practice: Ground nut oil, Safflower oil, Sunflower oil, Olive oil, Coconut oil (Habituated at coastal area)</p>	<p>Palm oil, Rice bran oil, Vanaspati (<i>Daalda</i>) should not be used</p>
<p><i>Mamsa varga</i> (Non-vegetarian foods)</p>	<p>Chicken & its soup, boiled egg (white part), soup (<i>mamsa rasa</i>) and meat of goat, sheep (lean meat); Fish</p>	
<p><i>Madya varga</i> (Alcohol)</p>	<p>These are to be consumed in <i>yukta maatra</i> (Appropriate quantity)</p>	<p>100% concentrated liquor / Spirit Beer (cold and chilled)</p>
<p><i>Krutaanna varga</i></p>	<p><i>Ashta guna manda</i>, <i>Panchakola peya</i>, <i>Kruta Yoosha</i>, <i>Krushara</i>, <i>Mamsa rasa</i>, <i>Saktu</i> (roasted flour);</p>	<p><i>Mantha</i> (cold infusion of dry fruits), <i>Yavagu</i> (thick gruel), <i>Vilepi</i> (lickable rice porridge). Too much animal protein and fat should not be consumed.</p>

Sweets	<i>Madhu</i> (Honey), <i>Ikshu rasa</i> (Sugar cane juice), <i>Guda</i> (Jaggery).	<i>Ati-Sharkara</i> (too much sugar intake), <i>Paayasa</i> , Milk /ghee based sweets, Chocolates
Various rice preparations	<i>Haridraanna</i> (Turmaric added rice), <i>Gudaannam</i> (Jaggery added rice), <i>Rasodanam</i> (Meat soup with rice), <i>Siri dhaanya</i> (millets) <i>anna</i>	
<i>Jala</i> (water)	<i>Ushna jala</i> (Boiled water), <i>Sukhoshna jala</i> (luke warm water)	<i>Sheeta jala</i> (Cold water), old beverages; Ice creams, drinkables kept in freeze.
Various <i>Yoosha</i> preparations	<i>Pancha-mushtika yoosha</i> , <i>Navaanga yoosha</i> , <i>Mudga yoosha</i>	
Various <i>Ksheerapaka</i> (medicated milk) preparations	<i>Haridra-ksheerapak</i> (Turmeric or Golden milk) <i>Lashuna-ksheerapak</i> (Garlic milk) <i>Pippali-ksheerapak</i> (Long pepper milk) <i>Shunthi-ksheerapak</i> (Ginger milk)	
Various Medicated Tea preparations	Herbal tea Dry ginger + <i>Ela</i> tea Cinnamomum tea <i>Tulasi + ela</i> tea	
Medicated water	<i>Shunthi jala</i> (Ginger water), <i>Jeeraka jala</i> (Jeera water), <i>Saarodaka</i> (water boiled with <i>khadira</i>), <i>Madhudaka</i> (water mixed with honey), <i>Triphala rasa</i> (juice or decoction of <i>triphala</i>)	
Prebiotics & Probiotics	<i>Jawar / Raagi ambali</i> with <i>Trikatu choorna</i> ; Pickles (less oily), Curd with <i>Amalaki / Pippali choorna</i>	
<i>Apathya ahara</i>	<i>Kshipra ahara</i> (Fast food), <i>Apakwa anna</i> (uncooked food), <i>Ati-taila bhrashta ahara</i> (too much oily food / deep fried food), <i>Guru ahara</i> (Heavy food), <i>Medoja / kledaja ahara</i> (fatty food), <i>Viruddha ahara abhyasa</i> (such as eating milk & radish together; milk & egg together). These will produce more free radicals in the body. Hence these are not supposed to be practice.	
<i>Apathya vihara</i>	Late rise during the morning, sedentary habits and cold water bath should not be done.	
Mental health enhancing activities	Morning wake-up at 6 am 6-7 hours good sleep Mindful Yoga / Physical exercise Practicing DHYANA & YOGA-NIDRA One should not undergo anxiety / depression and should not afraid about the Covid-19 situation.	

5. DISCUSSION

According to Ayurvedic parameters of lifestyles *Vegadharna*, *Chinta* and *Krodha* with improper eating habits and consuming *kshara* (alkali), *lavana* (salt) *rasa* (taste) with *Viruddha bhojana* (un-wholesome food) leads to heart disease and its complications. Heart diseases are controlled in Ayurveda by *pathya ahara* and *vihara* which possess qualities such as *paachana*, *deepana*, *hridya*, *anulomana*, *rasayana* and *krimihara*. Stemming a number of critical features, the DASH (Dietary Approaches to Stop Hypertension) diet greatly decreases the incidence of cardio-vascular disease (CVD). Lowering high blood pressure is the goal of the dietary approach that focuses on reducing intake of sodium while increasing potassium, calcium and magnesium that helps the body maintain healthy blood pressure. Essential vitamins, minerals and anti-oxidants in the DASH diet are beneficial in boosting the health of the heart. Furthermore, it encourages lifestyles, regulate blood pressure and to reduce the chances of having high LDL (low density lipoprotein) cholesterol. In light of this it can be said that the DASH diet comes with a comprehensive approach on enhancing diet that would help in the prevention of CVD.

6. CONCLUSION

As per Hippocrates saying “*Let food be thy medicine and medicine be thy food*” and also according to Ayurveda when *hita-ahara* (wholesome food) is consumed, then no medicines are required. The dietetic rules can be considered also as

an *upaya* (treatment plan) for *vikara-prashamana* (curing the disease). So, one should consume balanced diet that should nourish both body and mind. As *ahara* is considered as *Maha-bhaishajya* (great medicament), consuming proper food would help in recovering from the disease and diet plays major role to improve the cardiac health. Combining these *Ayurvedic* concepts with contemporary methods allows for a more balanced and comprehensive treatment of cardiac disease.

CONFLICT OF INTERESTS

None.

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None.

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