

## PREVENTIVE HEART CARE IN *AYURVEDA* THROUGH BEHAVIORAL INTERVENTIONS (*ACHARA RASAYANA*) WITH LIFE STYLE MODIFICATION (*SADVRUTTHA*)

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### ABSTRACT

*Ayurveda* bestowed positive health aspect to the mankind since the time immemorial, elaborate description of *Hrdaya*, its diseases and treatment is made in all *Vedas* and in all Ayurvedic text, *Ayurvedic* principle advocate prevention first and cure next, this slogan is true and essential in case of heart diseases. The burden of the “Coronary Artery Disease” is increasing in Indian population. Every 2<sup>nd</sup> person in India dies due to one of the heart diseases. Urbanization, affluence, wrong lifestyle and education increased the prevalence of cardiac diseases, in spite of all these, we can say heart disease is preventable. By adopting positive and preventive lifestyle, i.e. *Sadvrutta* and risk factor analysis and modification in the community, creating awareness in the society, participating in regular health check-up etc. contribute improves survival rates, reduce hospital admissions, improves cardiorespiratory fitness (CRF), and quality of life (QoL).

**Keywords:** *Ayurveda*, Behavioral Interventions, Preventive Cardiology, *Sadvrutta*

### INTRODUCTION

Heart is the seat of *Avalambaka Kapha*, *Rasadhatu*, *Raktadhatu*, and *Oja* <sup>1</sup> Naturally *Kapha* molecules in the heart muscle are of superior quality. Hence myocardium is the strongest muscle in the body. The heart has to work continuously throughout the life. This promotes an increase in local *Vata*. Naturally, *Vatakaphaja* heart disease is common. Hence one should make an attempt to understand the pathogenesis of various heart diseases of modern medicine on Ayurvedic line. Later prevent and treat them with

cardiotonic diet, behavior interventions, and drug therapy according to the dominant causative factor.

**Anatomy:** *Ayurvedic* embryology considers Heart is influenced more by maternal factors. The *Kapha*, *Rakta* & *Mamsa* are dominant in the structural development of the Heart<sup>2</sup> *Bruhabaranyaka Upanishad* describe the heart as a single, fleshy muscular and hollow organ resembling a red lotus and from which vessels and capillaries spread all over the body. *Vagbhata* mentioned that heart is centrally situated

in the cavity of the chest i.e. *Kosthanga* with four hollow chamber, its apex turned downwards to the left. Ten major blood vessels originate from it. It lies above the cardiac orifice of the stomach. On its right side lie the right lung, liver, and pancreas from above downwards. On its left side lie the left lung and the spleen. *Vagbhata* considers it as of the size of one's closed fist<sup>3</sup>, *Charaka* concept of *Pranavaha Srothas* is comparable to pulmonary circulation including the circulation of visceral organs and *Rasavaha Srothas* is comparable to systemic circulation<sup>4</sup>.

**Physiology: Rhythm-** The heart is a very sensitive organ having its own inherent rhythm. It keeps on contracting and relaxing on its own. The nervous system also controls its rhythm which continues life-long in a cyclic manner. The heart is more active during the day. The word *Rakta* in *Ayurvedic* literature means red blood corpuscles. It is not synonymous with the blood of modern medicine. Blood consists of red blood corpuscles i.e. *Rakta* and plasma which is part of *Rasa*.

**Circulation-**The body fluids are derived from the diet, after digestion and absorption the food is converted into body fluids termed *Rasa*, which carries the nutrients for all tissues of the body. It passes from intestines into blood vessels and then to the heart by the action of *Samanavayu*. From heart it pumped through its main blood vessels by the action of *Vyana Vaayu* into millions of capillaries, this circulation is controlled by autonomic nervous system i.e. by *Vyana Vaayu* mainly and also by *Samana Vaayu*. From capillaries, *Rasa* penetrates all the tissues and cell of the body in molecular form. *Rasa* carries the fluids and nutrients to all the cells and tissues of the body, the fluid from tissues is brought back to the heart from capillaries through veins.<sup>5</sup>

#### **Nidana (etiology)-**

1. *Mansika Karana* - *Chintha, Bhaya, Vairagya* etc.

2. *Aharaja Karana* – eating calories rich in- vegetarian food, junk food, fried food, i.e. *Adhyasana, Ajeerna Bhojana, Kashaya* and *Thiktha Rasa Sevana*,
3. *Vihara Karana* - *Athi Vyayama* and *Vyavaya, Athi Vishranthi*,
4. Suppression of natural urges,
5. *Athi Madhyapana*
6. *Chikitsakrtha Karana (iatrogenic)- Tiktsna Virechana and Basthi, the toxic effect of drugs*,
7. *Aganthuka Karana-* (External Factors)- *Abhigatha, Athi Uchha Patina*<sup>6</sup>

#### **Aetiological factors affecting the basic elements:**

*Rasa, Rakta, Muscular Tissue, Oja, Pranavayu, Vyana Vayu, Sadhaka Pitta* and *Avalambaka Kapha* are the eight basic elements, which maintain the integrity of the cellular structure and various function of the heart.

#### **Heart disease occurs as a complication of the following diseases.**

1. Anemia
2. Infectious fevers like Diphtheria, Typhoid, Pneumonia.
3. Rheumatic fever.
4. *Vatarakta*
5. Diabetes
6. Chronic respiratory diseases with breathlessness (Cor pulmonale).
7. Vomiting – with its associated dehydration and electrolyte disturbances.
8. Bleeding disorders leading to Anemia and Haemopericardium.
9. Worm infestation
10. Alcoholic intoxication
11. Side effects of drugs e.g. action of various poisons.

***Purva rupa (prodromata):*** *Swasa* –dyspnoea, *Hrudhaya Spandana* – palpitation, *Hrud Daha*-heart burn, *kasa*-cough.

**Samanya linga** (common signs and symptoms) : *Svasa*- dyspnea, *Tamaka* – orthopnoea, *Sotha* – edema, *Hrth Shula*- chest pain, *Hrudaya Spandana*- palpitation, *Murcha* – syncope, *Jvara*-fever, *Kasa*-cough, *Klama* – tiredness, *Aruchi* – anorexia, *Thirsna* – thirst, *Moha* –stupor, *Chardhi* – vomiting Anaemia, Dyspnea, Swelling Of Feet, Unusual Fatigue, Neck, Jaw and Back Pain, Central and Peripheral Cyanosis, Perspiration, Obesity<sup>7</sup>.

**Preventive heart care in Ayurveda for current scenarios:** *Pragnaparadha* is the root of initiation of all diseases including cardiovascular diseases.

**Traditional risk factors for cardiovascular diseases:**

- Age: Male > 45 or Female > 55 years of age
- High blood pressure (> 140/90 mm Hg)
- Current cigarette smoking
- Elevated LDL-cholesterol (> 100 mg/dl) or non-HDL cholesterol (> 130 mg/dL))
- Low HDL- cholesterol (< 40 mg/dL in men, < 50 mg/dL in women)
- Diabetes (fasting glucose > 125 mg/dL or HbA1C > 6.5%)

**Additional risk factors that are part of the comprehensive Ayurvedic approach to risk assessment:**

- Elevated C-reactive protein (hsCRP;>2 mg/liter)
- Elevated Apo B or LDL particle number
- Increased coronary calcification or carotid intima-media thickness for one's age
- The family history of premature coronary heart disease (first degree relatives; < 55 yrs in a father, brother or son or < 65 yrs in a mother, sister, or daughter)
- Obesity (body mass index > 30); overweight (body mass index 25-29)
- Physical inactivity/sedentary lifestyle (lack of regular brisk exercise)
- Impaired fasting glucose/Metabolic Syndrome
- Sleep Apnea or Vascular Disease (Erectile Dysfunction, Claudication)
- Chronic kidney disease or microalbuminuria

**Objectives of preventive cardiology:**

1. Comprehensive
2. Initiated as early as possible
3. Continuous
4. Staged
5. Individualized depending on the clinical state
6. Accepted for the patients

**Major goal of a preventive heart care:**

1. Curtail the Pathophysiologic and Psychosocial Effects Of Heart Disease.
2. Limit the risk of infarction or sudden death
3. Relieve of primordial cardiac symptoms
4. Reverse atherosclerosis by instituting programs for exercise training, education, counseling and risk factor modification.
5. By regular assessments and health checkup leads to bring the small change in the large community help to maintain the functional status of individual families and in the societies<sup>8</sup>

**Achara Rasayana and Sadvrutta together for preventing cardiovascular diseases in ayurveda is classified under 3 heads**

1. *Ahara*- cardiac nutrition
2. *Vihara* - behavior interventions and lifestyle modification
3. *Oushadi* – drug therapy.

**Ahara – Cardiac nutrition:**

The relationship between diet and cardiovascular diseases has received increasing attention in the recent years. It follows the overall recommendation for a heart-healthy diet i.e. Less fat and minimal saturated and Trans fatty acids, more high-fat fish and more vegetables and fruits.

**Following are the rich source of Alpha- L – Inolenic Acid and beneficial for heart**

- **Cereals and millets:** Old Rice, Wheat, and *Bajra* should be roasted before use by patients with *kaphaja* heart disease.
- **Pluses:** *Mung* (green gram). *Kulattha* (black gram) is good for *kaphaja* and soya in *Vataja* heart disease.

- **Spices:** Fenugreek Seeds and Mustard, Garlic Ginger.
- **Salt:** *Souvarchala Lavana* 3g/day is safe and adequate for a healthy adult,
- **Oil:** Mustard, Soyabean Oil.
- **Alcohol:** Mild alcoholic preparation like *Drakshasava*, *Varuni* is good for a heart patient.
- **Milk:** Butter Milk and Skimmed Milk and Fat-Free Milk Products.
- **Animal foods:** Freshwater and Sea Fish like *Purava*, *Hilsa* is good, a regular habit of including 100-200 g of fish twice a week is recommended as a preventive dietary approach for heart diseases. Roasted lean meat, chicken and egg white should be taken.
- **Nuts and oilseeds:** Almond, Walnuts, Coconut, Groundnuts, till and other oilseeds should be used in restricted quantity and only occasionally, particularly by obese heart patients. Charoli and Dates are good for *Vataja* and *Pittaja* heart disease.
- **Fruits:** Fresh and sour fruits in general rich source of Potassium and Vitamin C, good for heart like Bananas, Orange, Cantaloupe and sweet Raisins, *Mathulunga*.
- **Vegetables:** *Padaval*, *Bhopala* (Pumpkin) and Brinjals are good for all heart patients. *Punarnava* and *Drumstick* are good for *Vanaja* and *kaphaja* heart disease. *Methi* and *Karela* are good for *Kaphaja* and *Pittaja* heart disease. Cucumber, *Brahmi*, and *Mandukaparni* are good for *pittaja* heart disease. Tamarind is contraindicated in *Pittaja* heart disease.
- **Water:** water should take in restricted quantity in person with hypertrophy or dilatation of heart or when congestive cardiac failure, Water may be medicated with Ginger, sugar and *Saindhava* salt in *Vataja* heart disease. Chromium and Vanadium present in a hard water appear to be cardioprotective<sup>9</sup>

#### **Vihara - behavior interventions and lifestyle modification:**

**Lipid management** – providing intervention to reduce triglycerides to < 200mg/dl, these include nutrition counseling and weight management, exercise, alcohol moderation, drug therapy as per NCEP, continued assessment and modification of intervention until LDL < 100mg/dl, secondary goals include HDL > 35MG /dl and triglycerides < 200mg/Dl.

**Hypertension management** - a normal blood pressure is < 120 /80 mm Hg. Hypertension (high blood pressure) is classified as > 140/90 mm Hg on at least two occasions. If blood pressure is high, lifestyle improvements such as dietary changes like decreasing salt consumption, eating a low saturated fat, low cholesterol diet that is rich in fruits and vegetables, continued assessment and modification of intervention until BP < 130 mm Hg Systolic and < 85 mm Hg diastolic.

**Smoking Cessation** – document smoking status as never smoked, former smoker or current smoker, specify both the amount of smoking (packs per day and duration of smoking & number of years) assess the use of cigar smoking, pipe smoking, and chewing tobacco's well as exposure to second-hand smoke. When readiness to change is confirmed, help the smoker set a quit date and select the appropriate treatment strategies ,it include smoking cessation program using group or individual counseling, encourage physician, staff and family support, assessment and modification of intervention until complete abstinence from smoking and use of all tobacco products at 12 from quit date

**Weight management-** establish reasonable short term and long term weight goals individualized to the patient and associated risk factors e.g., reduced body weight by at least 10% at the rate of 0.5kg/wk over a period of time up to 6 months, aim for an energy deficit of 500-1000 kcal/day

**Diabetes management** – it includes normalization of fasting plasma glucose (80 -110 mg/Dl, or HbA1C < 7.0) minimization of diabetic complications and control of associated obesity, hypertension (BP<130/85 mmHg) and hyperlipidemia.

**Psychosocial management** – identify psychological distress like depression, anxiety and anger or hostility, social isolation, sexual dysfunction/maladjustment and substance abuse etc. Then refer patients to appreciate psychologist. Teach and support self-help strategies like a demonstration of self –responsibility for health-related behavior change, and stress management skills.

**Physical activity counseling-** assess the current physical activity and determine domestic, occupational and recreational needs include driving, sexual activities, sports, gardening and household tasks and suggest how to incorporate increased activity into usual routine e.g. parking farther away from entrance ,walking up to 2 or more flights of stairs, walking for 15minutes during lunch break.

**Exercise training-** obtain an exercise stress test before participation, it includes heart rate, rhythm, sign and symptoms, ST-segment changes and exercise capacity, based on evolution findings, risk stratification etc. and develop an individualized exercise prescription for aerobic and resistance training.

**Normal prescription:** Frequency of 3-5 day a week. Intensity – 50% -80% of exercise capacity Duration – 30-60 minute Mode – walking, treadmill, cycling, rowing, stair climbing, arm ergometry.<sup>10</sup>

**Yoga-** (only isotonic exercise): *Padmasana, Trikonasana, Vajrasana, Gomukahasana, Bujangasana, and Shavasana* are beneficial.

**Pranayama** - 10 minutes of *Kumbaka* and *Rechaka* in controlled *Pranayama* with 15 minutes of *Dhyana* (meditation) and *Prarthana* are beneficial and good for heart health.

**Sex-** Normal sex life provided he does not feel exhausted after intercourse. He should avoid intercourse in *Greeshma* i.e. summer and *Varsha* i.e. monsoon. In *Vasantha* i.e. spring and *Sharada* i.e. autumn, he should undertake intercourse not more than twice a month. During *Hemantha* and *Shishira* i.e. in winter, he should enjoy sex within its capacity. It's good for the heart and proved that one epi-

sode of sexual act equivalent the burning of 150 - 200 calories.

**Bath-** bath as a cardiogenic effect, hence one should take a regular bath

**Ornaments-** Wearing gold, diamond, silver and pearl ornament and fragrant flower helpful and good for the heart.

#### ***Ousadha* in Preventive Care of *Hrudroga***

It is important to understand the pathogenesis of cardiovascular diseases and its risk factor and then treat the subject accordingly with the cardioprotective herbs.

- *Thiktaka And Mahathiktaka Grutha* correct the abnormalities of blood vessels
- *Shathavari Grutha* – act as a tonic to blood vessels
- *Bruhathvata Chinthamani Rasa* –cardiac arrhythmias
- *Sarpagandha Vati* and *Chandrapraba Vati* – hypertension
- *Triphala Guggulu* - useful in atherosclerosis and obesity
- *Guggulu, Silajathu, and Arogyavardhini Vati* – diabetes.
- *Brahmi, Mandukaparni, Jatamamsi* useful in stress management<sup>11</sup>

## **CONCLUSION**

One should not attempt to change many years of sedentary living and other possible detrimental habits overnight. Gradual preventive program to modify food habits, behavior and lifestyle are more apt to succeed than a go-for-broke approach. and also use of state machineries for creating awareness regarding Preventive Heart Care with the integration of different system of medicine through TV, media, public advertisements with the integration children, teachers, youth and families support leads to small change in the big community and also contribute to reduction of CABG and Angioplasty rate, and we still get the chance to go for natural death peacefully that's what Hindu philosophy all about, when we

look at all these things, we need to inculcate these habits in ourselves and doctors we are the health futures of the society, we should start with ourselves ,our family, our friends our social structures, then comes over the families we treat. Probably then it will percolate into entire society, if we do that then we looking at no incidence of cardiovascular diseases in the society, and that is the way to go for India. we need money go to the mass or we need money to feed the poor who don't have two meals of the day, rather than spending on heart attack, angioplasty and bypass surgeries.

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**Source of Support: Nil**

**Conflict Of Interest: None Declared**

How to cite this URL: Pallavi M.K.& Siddayya Aaradhyamath: Preventive Heart Care In Ayurveda Through Behavioral Interventions (Achara Rasayana) With Life Style Modification (Sadvruttha). International Ayurvedic Medical Journal {online} 2018 {cited June, 2018} Available from: [http://www.iamj.in/posts/images/upload/1288\\_1293.pdf](http://www.iamj.in/posts/images/upload/1288_1293.pdf)