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AN OBSERVATIONAL STUDY ON RELATION BETWEEN SHARIRA PRAKRITI AND HRIDROGA W.S.R TO ISCHEMIC HEART DISEASE

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ABSTRACT

Prakriti is the non-pathologically aggravated state of *Dosha* formed at the time of conception, persistent from birth till death. It is the constitution of a person which has a role in the physical, physiological and psychological domain of life. *Hridroga* is selected in this study as *Hridaya* is considered the most important organ which sustains life and maternal and paternal factors influence the morphological and functional development of *Hridaya* and its Vasculature. Coronary heart disease or Ischemic heart disease is one of the most dreadful disease in today's world with increasing prevalence and mortality rates in developing countries. It has modifiable and non-modifiable risk factors which are more connected to lifestyle changes. **Objective:** To identify the relationship between *Sharira Prakriti* and *Hridroga* w.s.r to IHD to identify the most susceptible *Prakriti*. **Methods:** In this cross-sectional observational study, 85 subjects diagnosed with Ischemic heart disease were selected. *Prakriti* assessment was carried out by the validated *Prakriti* assessment scale prepared by CCRAS, New Delhi.The recorded data were analyzed with descriptive statistics. **Results:** Through *Prakriti Pareeksha* in *Hridroga* specifically Ischemic heart disease shows that the maximum affected subjects were on the *Vata Kapha Prakriti* followed by *Vata Pitta and Kapha Pitta.* **Conclusion:** *Prakriti* assessment is a tool to find out the genetic predisposition and habitual addiction to etiological factors and by correcting this the disease burden can be reduced.

KEYWORDS: *Prakriti*, Ischemic heart disease, *Hridroga*.

INTRODUCTION

Prakriti is a non-pathological status of *Dosha* inherent in the individual from birth to death, which becomes distinct since the time of fertilization, mediated by maternal and paternal activities.[1] It refers to the genetically determined anatomical, physiological and psychological constitution of an individual, and also determines the response of an individual to environmental factors and drugs, making it one of the earliest known concepts of preventive and personalized medicine.

The *Prakriti* of an individual is determined by various factors such as the dominance of *dosha* in *Shukra* and *Shonita* during conception, season and condition of the uterus, food, and regimen of the mother, and nature of *Mahabhuta* comprising the fetus.[2] Ayurvedic classics describe 7 types of *Prakriti – Ekadoshaja (Vata*, Pitta, and Kapha) *Samsrishta* (*Vata Kapha*, *VataPitta*, *PittaKapha*), and *SamaPrakriti.*[3]

While describing *Roga Pariksha acharyas* gave due importance to *Prakriti Pariksha* (examination of *Prakriti*), it is the genetic background of Ayurveda that should be studied in detail to prevent genetically prone diseases and maintain health of healthy. A primary goal of health care is to prevent disease or to detect it early enough that interventions will be more effective. Early detection of disease has the potential to reduce both morbidity and mortality. So, *Prakriti* should be analyzed and one has to opt lifestyle appropriate to his *Prakriti* to prevent the manifestation of disease.

Cardiovascular disease accounts for approximately 12 million deaths annually and is the commonest cause of death globally. Asian Indians have a much higher incidence of CAD as compared to all other ethnic groups. Incidence of CAD has doubled in the last 25 yrs in India and the prevalence is progressively increasing.[4] Most of the risk factors for ischemic heart disease point to improper lifestyle adaptations and dietary changes. So, if the predisposition of ischemic heart disease in a person to any specific constitution was found it will be an important step in the prevention of disease burden by adopting a healthy lifestyle suitable for the constitution. As *Hridaya* is the most important and one among the

Trimarma and *Sthana* of *Prana* so *Hridroga* is chosen for the study.

The word "*Hridaya*" in Ayurveda is synonymous with the word heart. "*Hridaya*" is derived from three verbs (as per S*atpathbrahman* and *Brihadaranyak*). Hru- "Means to receive", Da- "means to donate" and Ya-" means to nourish itself or to maintain the activity of two earlier functions".[5]

A disease that affects the *Hridaya* is called *Hridroga* and the preliminary description of Hridroga dates back from the pre-Vedic period and is detailed on *Samhitha Kala*.

The terms *Hridyata*, *Hridroga*, *Hridayamaya* and *Hridaya Sula* have been used in *Vedas*.

Charaka and *Vagbhata* describe *Hridroga* as a part of some other chapter *Susruta* have devoted a separate chapter to dealing with the disease.

Hritshoola has been described separately in the 42nd chapter of *Uttara Tantra (Susruta)* entitled *Gulma Pratishedadyaya*. Various types of acute pains have been described which occur either as complications of *Gulma* or appear independently. *Hritsoola* has been put under the latter category of *soola*. Acharya Charaka mentioned the importance of *Hridaya* and the judicious and timely treatment of *Hridroga* in *Trimarmeeya Sidhi*. He clarifies that *Hridaya* and other *Trimarma's* are to be protected by following *Swasthavritta*, reduction of exposure to *Nidana (Aabhadha Varjanam*), and proper management of preformed disease (*Utpanna Arthi Nivarnama*).[6]

Understanding the etiology and signs and symptoms of *Hridroga* and finding the relationship with *Prakriti* will help in the prevention of a deadly disease by reducing the exposure to the susceptible causative factors and along with this, it will help to give personalized care to the suffering population.

AIM AND OBJECTIVES

The present study analyzes the relation between *Sharira Prakriti* and *Hridroga* w.s.r to Ischemic heart disease.

MATERIALS AND METHODS

Source of data

85 Patients diagnosed with Ischemic heart disease attending OPD & IPD of SDM Ayurveda Hospital, Udupi, and nearby hospitals fulfilling the inclusion and exclusion criteria were selected for the study.

Study Design

This is a causal, cross-sectional observational study on 85 patients attending OPD & IPD of SDM Ayurveda Hospital, Udupi, and nearby hospitals fulfilling the inclusion and exclusion criteria.

A special Performa prepared which includes the details of history taking to identify the incidence of probable *Nidana*, physical signs, and symptoms as mentioned in classics and allied sciences was prepared and patients were analyzed and selected accordingly.

Prakriti assessment was carried out by the validated *Prakriti* assessment scale prepared by CCRAS, New Delhi.

The data was recorded and analyzed with descriptive statistics.

Inclusion Criteria

- Patient with Ischemic heart disease with ECG or ECHO changes
- Patient aged between 30-60 years.
- Patients of either gender will be taken for study.
- Subjects having the ability and willingness to sign a written informed consent
- Subject having the adequate ability of communication, willingness, and ability to comply with study requirements.

Exclusion Criteria

- Pregnant and lactating women.
- Patients with Acute coronary syndromes.

Assessment Criteria

- Assessment of physical, physiological, and psychological traits of Doshaja Prakriti in diagnosed cases of *Hridroga* specifically Ischemic heart disease.
- The frequency of exposure of each *Hridroga Nidana* was assessed through a Likert-type scale.
- The frequency of exposure to each Risk factors of IHD was assessed through a Likert-type scale.

Table 1: Likert-Like Scale.

Frequency	Likert like scale	No of days/week
Never	0 % chance	Not more than one day in a week
Rarely	10% and above chance I would have	1 or 2 days in a week
Sometimes	50 % and above chance I would have used	2-4 days in a week
Often	Frequently about 70% of chances I would have	5-6 days in a week
Always	In about 90% and above chances I could have	6-7 days in a week

Always and often were considered as *Ati Sevana* of *Nidana*

RESULTS

The observations and results obtained after the assessment of *Prakriti* in Hridroga specifically IHD patients are as follows.

- *Hridroga* was analyzed using *Trividha Bodhya Sangraha* for a critical understanding of etiopathogenesis.
- Ischemic heart disease clinical symptomatology compared to the *Hridroga* types shows *Vata Pradhanikata* followed by *Kaphaja* and *Paitika Lakshana*.
- Among the Hridroga Nidana most frequently observed are Aharaja - excess use of Teekshna, Ushna, Snigdha and Guru Guna and Lavana, Amla and Katu Rasa Upayoga and Alpa Bhojana Viharaja -Avyayama shows highest incidence Vegadharana- less observed in the sample population and even though Pipasa and Udgara Vegadharana is seen in some. Manasika - Shoka observed in 15.3% study population. Gadatichara is frequently observed mainly Prameha.
- Through evaluation of frequencies on physical, physiological, and psychological characteristics of *Prakriti* by *Prakrithitaha Pareeksha* in Hridroga specifically ischemic heart disease shows that maximum affected subjects were on the *Vata Kapha Prakriti* followed by *Vata Pitta and Kapha Pitta.*
- By evaluating the frequency of non-modifiable risk factors in each *Prakriti*

➢ Early onset of IHD based on age was noted in *VataPitta Prakriti* and *Vata Kapha* at a later stage.
➢ Gender-wise incidence was noted more in males than females.
➢ Females of Vata Pitta Prakrithi are affected more and in males, *Vata Kapha Prakriti* was affected more.
➢ Family History of CAD was minimally noted but Hypertension and Diabetic history in the family tree of parents and siblings was noted.
➢ Among the family history distribution, *Vata Kapha Prakriti* was observed more in CAD, Hypertension, and Diabetic Mellitus.

- By evaluating the frequency of modifiable risk factors in each *Prakriti*

➢ Smoking was observed in a minimal section of the patient population under the study and among them most often habituated are *Vata Pitta Prakriti*.
➢ Alcohol was observed in a minimal section of the patient population and among them most often habituated are *Vata Kapha Prakriti*.
➢ Patients with Hypertension and Diabetic Mellitus had more risk for the development of CAD than those suffering each of them individually.
➢ Hypertensive patients (70.6%) are more observed in the study when compared to Diabetic Mellitus (56.5%).
➢ History of Hypertension was noted more in *Kapha Pitta Prakriti* and Diabetic mellitus was noted more in *Vata Kapha Prakriti*.
➢ Hyperlipidemia and Hypothyroidism were noted less frequently in the study and the affected population mostly belongs to *Vata Pitta Prakriti.*
➢ Obesity was noted as the main risk factor as more than half of the patient population (50.3% have high BMI) suffered from it and mostly, they belong to *Vata Pitta* (51.85%) followed by *Vata Kapha Prakriti* (46.42%).
➢ Sedentary lifestyle was noted more in *Vata Pitta Prakriti* (77.77%) and heavy physical exertion was noted in *Vata Kapha Prakriti* (35.71%).

Table 2: Distribution of patients diagnosed with IHD in each *Prakriti*.

Prakrithi	**No Of Subjects**	**Percentage**
VATA	0	0
PITTA	0	0
KAPHA	0	0
SANNIPATAJA	0	0
KAPHAPITTA	18	21.2
KAPHAVATA	3	3.5
PITTAKAPHA	4	4.7
PITTAVATA	5	5.9
VATAKAPHA	28	32.9
VATA PITTA	27	31.8
Total	85	100.0

DISCUSION

Discusion on Hridroga and Ihd

In the present study all patients present with *Dwandaja Hridroga Lakshana, and Ekadoshika Lakshana* are rarely presented because of the permutation and combination of different *Nidana Sevana*. *Dosha* vitiated in the pathogenesis of *Vyadhi* will be *Dwidoshaja* or *Tridoshaja* mostly with a predominance of one *Dosha*. Among the 85 patients with IHD observed it can be stated that IHD is a *Vata Pradhana Tridhosha Dushti Lakshana*.

The main symptoms noted are Angina and Angina Grade 3 is mostly observed followed by Grade 4 and Grade 2. Dyspnoea is the second main presentation, according to the MRC scale most of the IHD cases Grade 3 Dyspnoea was noted.

Diaphoresis is the next most prevalent symptom presented by 58.8 % of patients followed by Referred pain (22.4%) in the jawline, arms, neck, shoulder, or back, fever, and vomiting of 14.1% each.

In ECHO cardiogram Regional wall motion abnormalities (RWMA) are noted in 72.9% of patients and Left ventricular ejection fraction (LVEF) was reduced in 72.7% which indicates Ischemic changes in the myocardium.

In imaging studies, most of the patients present with SVD (Single vessel disease -38.8%), followed by DVD (Double vessel disease- 22.3%) and TVD (Triple vessel disease-21.17%). SVD are most common in *Vata Pitta Prakrithi*, DVD in *Kapha Pitta* and TVD is more frequent in *Vata Kapha Prakrithi*.

Discusion on Exposure to Hridroga Nidana
Aharaja nidana
Among the Aharaja Nidana's mostly consumed are

- **According to Guna**

Teekshna(potent) (75.3%) -most common food commodities used are spices, mustard oil, pepper, dry ginger, brinjal.

Ushna (hot)(95.3%)-most of the patients consume food when it is hot or preheat the food, most of them consume fish, brinjal, horse gram.

Snigdha(unctuous) (91.8%)- mostly consumes oily foods, meats, and fried items in their diet.

Guru(heavy) (75.3%) ahara-Using newly harvested grains, black gram, milk, and milk products are widely used, and meat products are consumed often.

Teekshna Guna Atisevana will lead to more secretion to channels of circulation and causes vitiation of *Raktha* and *Pitta* and increases the inflammatory process which will lead to *Dhamani Pratichaya* (obstruction in myocardial circulation) leading to *Hridroga* (IHD).

Ati Ushna Sevana leads to *Pitta Vridhi* resulting in *Rakta Dushti* which is one of the main causes of *Hridroga*.

Snigdha Guna Atisevana leads to obesity and which can result in *Medho Dushti* and it will result in Diabetics and Hyperlipidaemia which are the main risk factors of IHD.

Guru guna Atisevana leads to Agni Madhya and results in *Kapha Prakopa* which causes Dhamani pratichaya (obstruction in coronaries) leading to Hridroga (IHD)[7]

- **According to Rasa**

In *Rasa Sevana* mostly consumed *Rasa* are
Lavana (salt) (91.8%)- will add extra salt for taste, pickles
Amla(sour) (76.5%)-curd in regular diet, fruits like grapes, orange, and citrus are noted. and ***Katu*** (pungent) (70.6%)-spice level in the diet is high and pickles are used on daily basis.

Atilavana Sevana causes liquefaction of *Kapha* and leads to *Shotha* along with *Raktha and Pitta Dushti* which will lead to *Dhamani Pratichaya and Hridroga*.

Atisevana of Amla Rasa will lead to *Kapha Dravikara (liquefaction of Kapha), Shotha(swelling), Pitta Vridhi* (increase), and *Raktha Dushti* (vitiation) which can lead to Dhamani Pratichaya which can be correlated to atherosclerosis and resultant plaque rupture.

Katu Rasa if consumed in excess will lead to *Vata Kopa* as IHD is a *Vata Pradhana Hridroga* clears the role of *Ati Katu Sevana* in the Etiology.[8]

- **According to Ahara Vidhi**

Alpa Bhojana is more seen (41.2%)-very less quantity of food and anorexia noted.
Alpa Bojana leads to *Vata Prakopa* and *Rasa Dushti* which will trigger the pathogenesis of *Hridroga*.

These factors will lead to *Tridosha Dushti* along with vitiation of *Raktha and Rasavaha Srothodushti* which can lead to *Dhamani Pratichaya* and the result is *Hridroga*.

Viharaja Nidana
Among the *Viharaja Nidana*, the most predominant is Avyayama (physical inertness) (57.6%) which will lead to *Medho Dushti* and cause *Dhamani Pratichaya* and results in *Hridroga*.

A sedentary lifestyle is the main risk factor for atherosclerosis and results in IHD.

Vegandharana
Suppression of *Adharaneeya Vegas* causes *Vata Kopa* and *Sroto Dushti* especially *Rasa* and *Rakta Dushti* causing *Avarana* and resulting in *Hridroga*. Among 85 patients 76.5% will are not suppressing any *vegas*.

Pipasa vega dharana (suppression of thirst) is seen in 16.5% due to the work nature and it will lead to increased *Rukshana* of *Srothas* and lead to *Vata Kopa* and result in *Hrith Gada*.[9]

Udgara vega dharana (suppression of belching) is noted in 7.1%patients it will lead to *Vata Kopa* will lead to *Stambha* in *Hridaya*.[10]

Manasika Nidana
Among 85 patients 72.9% have no psychological stress, 15.3% are suffering from *Shoka* due to personal and financial problems Stress is considered a major risk factor for the development of cardiac disease.

Studies suggest that high levels of long-term stress can increase blood cholesterol, triglycerides, blood sugar, and blood pressure and can result in the deposition of plaques in arteries.

Anyanidana
Gadatichara (improper management of comorbidities) has been noted in 78.8% of patients enrolled in the study. Improperly managed and chronic systemic diseases like DM, HTN, Hyperlipidemia, and COPD are noted in patients and these are the potential risk factors of IHD.

DISCUSION ON EXPOSURE TO RISK FACTORS OF IHD

Comorbidities
In the present study maximum of 70.6% patients were having H/O HTN, 56.5% had history of DM, 2.4% H/O hyperlipidemia, 5.88% have Hypothyroidism, 35.3% have previous history of cardiovascular diseases.

- History of HTN & CVD is seen more in *Kapha Pitta Prakrithi*.
- H/O Hypothyroidism, & hyperlipidaemia more in Vata pitta *Prakrithi*
- H/O DM more in Vata Kapha *Prakrithi*.

Both DM and HTN adds on to the risk factors of Cardiac diseases. DM increases the chance of atherosclerosis whereas HTN increases the chance of vascular constriction thereby increasing cardiac load.

Smoking
Among 85 patients 6 of *VataPitta Prakrithi*, 5 of *Vata Kapha Prakrithi*, 2 of *Kapha Vata Prakrithi*, 4 of *Kapha Pitta Prakrithi*, 3 of *Pitta Vata Prakrithi*, 3 of *Pitta Kapha* and 3 of *PittaKapha Prakrithi* person have habit of smoking. From the data observed *VataPitta Prakrithi* shows more habitual addiction to Smoking.

Exposure to cigarette smoking has been shown to promote arterial wall damage and progression of atherosclerotic disease, increase fibrinogen levels, elevate blood pressure and induce vasoconstriction. All these increases the risk of an ischemia.

Obesity
Among 85 patients, 50.3% have high BMI, Obesity is an important risk factor of IHD.

Ectopic fat deposit in pericardium can impair the flow in left or right main coronary arteries and it will also increase the risk of atherosclerosis and Diabetics which will again trigger the condition. obesity is a risk factor for development of IHD in elderly diabetic patients independently of other known risk factors.

In the current study most of obese patients belong to *Vata Pitta* (51.85%) followed by *VataKapha*(44.62%) *Prakrithi*.

Age
Among 85 patients enrolled in the study maximum 72.9% and 27.1% patients were in the age group between 51-60 and 41-50 years respectively. This age group is considered as the risk factor for cardiac disease i.e., 55-70 years.

In the group of 41-50 age group *Vata Pitta Prakrithi* persons (9 out of 27 patients enrolled in study) are more. In age group of 51-60 *Vata Kapha Prakrithi* persons(23 out of 27 patients enrolled in study) are observed more.

During the conduction of study more incidence was noted above the age of 50 years because *vardhakya* cause *Dhathu Kshaya* which will lead to *Ojo Kshaya* and affects *Hridaya*.

Gender
In the present study maximum 65.9% patients were males and 34.1% were females. Most females affected are in *Vata Pitta Prakrithi* (37.03%) and Males under *VataKapha Prakrithi (*67.85%).

Heridity
Among 85 patients 10.6% patients gave family history of CAD. Among these paternal influences are more observed as *Sira Dhamanis* are formed from the Pitruja Bhava genetic influence of Vascular incompatibilities in an offspring can be substantiated. The family history of a heart disease or CAD shows increased risk of developing MI or stroke. Due to insignificant sample size evidences are not conclusive. *Vata kapha Prakrithi* have more family history of CAD in this study.

Among 85 patients 44.7% have family H/O HTN.H/O HTN can increase the risk of *Hridroga* as it is the *Vyanavrita Vata* and *upadrava of Avarana* will ends up in *Hridroga*.

Among 32.9% have family H/O DM. *Sahaja Karana* in the form of *Beeja Dushti* can be made out in the causation of diabetics, and these patients with familial history when exposed to the causative risk factors will lead to *Medho Dushti* and *Dhamani Pratichaya* and lands up in *Hridroga*.

HTN and DM are the comorbidities of cardiovascular disease. Family history is more evident in Vata Kapha *Prakrithi* persons. Patients having family history of both diabetics and Hypertension show more tendency to develop ischemic heart disease.

CONCLUSION

Sharira Prakrithi is a non – pathological status of *Doshas* formed in the body of an offspring during the time of conception .It is the non-pathologically

aggravated *Dosha Avastha* in formed by the involvement of Maternal Paternal, and Enviornmental factors. It is initiated during the time of fertilization and the process of formation of *Prakrithi* depends on the intrauterine events also.

This *Prakrutha Dosha Avastha* can't be pathological and will not have any vitiation and depletion but it will predispose to ailments when one is doing its diet and lifestyle opposite to this *Dosha avastha*.

Pariksha or examination of patient is the foremost step of disease identification and *Prakrithi* is the first and main step of *Rogi Pariksha* as it is understood that Pathology is nothing but the change in normalcy so a physician should be well versed in normalcy to identify the error or change.

Wide spectrum of scope in scientific research is there in the *Prakrithi* as it is the ayurvedic concept of Genomics and personalised medication. Identification of risk factors and chance of predisposition of inherited diseases can do a major role in balancing the health standard of society.

Ischemic heart disease is the one of the commonest cause of death globally and is due to the inadequate supply of blood and oxygen to a portion of the myocardium; it typically occurs when there is an imbalance between myocardial oxygen supply and demand. The commonest cause of IHD is atherosclerosis which occurs due to exposure to modifiable and non-modifiable risk factors.

IHD can be correlated to *Vata Pradhana Tridoshaja Hridroga* as it contain symptom complexes of all *Hridrogas* with dominant *Vataja* presentation. Main *Lakshanas* assessed in 85 patients screened in this study are *Ruja* and *Shwasa* .The *Doshik* predominance of these are *Vata Kapha* and among the *Nidanas* also *Vata Kapha Prakopaka Nidanas* are mostly observed The *Prakrithi* of persons mostly affected among this 85 patients are *Vata Kapha* followed by *Vata pitta* and *Kapha Pitta Prakrithi*.

So, it can be concluded that *Vata Kapha Prakrithi* persons if they follow the proper diet and regimens explained can reduce the risk of IHD.

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