

A REVIEW ARTICLE - CLINICAL EVALUATION OF THE EFFECT OF *HRIDYAMRITA VATI* WITH *ARJUNA KSHEER PAKA* AS ANUPANA IN *VATAJA HRIDYA ROGA* W.S.R. TO STABLE ANGINA**Dr. Anupama Rai*¹, Dr. Dhruv Kumar Mishra² and Dr. Abhishek Bhushan Sharma³**¹P. G. Scholar, Department of Kayachikitsa, Patanjali Bhartiya Ayurvedigyan Evam Anusandhan Sansthana, Haridwar.²Associate Professor, Department of Kayachikitsa, MD (Ayu), PhD (Ayu), Patanjali Bhartiya Ayurvedigyan Evam Anusandhan Sansthana, Haridwar.³Associate Professor, Department of Kayachikitsa, MD (Ayu), MA (Yoga), Patanjali Bhartiya Ayurvedigyan Evam Anusandhan Sansthana, Haridwar.***Corresponding Author: Dr. Anupama Rai**

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ABSTRACT

Background: Angina pectoris is a symptom complex caused by transient myocardial ischaemia, which occurs whenever there is an imbalance between myocardial oxygen supply and demand. Or we can say Stable Angina is a condition where in myocardial ischaemia occurs due to fixed atheromatous stenosis of one or more coronary arteries. Coronary artery disease is the most common cause of angina and the most common cause of death worldwide. The World Health Organization has estimated that 3.8 million men and 3.4 million women die from CVD each year. It has been estimated that CAD is responsible for 10 % of disability – adjusted life years in low-income countries and 18 % in high – income ones. In Eastern Europe and much of Asia, however, the rates of CAD are rapidly rising. This condition is on upward trend day by day due to faulty life style and dietary habits (fast food, junk food, Smoking, Excessive consumption of alcohol, stress etc). In ayurveda, Stable angina can be correlated with *Vataja Hridaya Roga*. **Aim of study-** The present study was carried out to assess combined effect of *Hridayamrita vati* with *Arjunaksheera paka* as anupana in *Vataja hridaya roga*. **Materials and Methods-** To fulfill the objectives total 40 patients were registered of pre- diagnosed case of stable angina and these patients were administered *Hridayamrita vati* 2 tab BD with 40 ml *Arjunaksheer paka* as anupana for 90 days and a diet chart. **Result-** This study shows that overall effect of therapy, 21.21% had complete relief, 39.4% of patients were markedly improved, 33.33% were moderately improved, 6.06% were mild improved and 00.00% of patients were unchanged. **Conclusion-** It was found that given therapy have significant results in subjective parameters. Medicines have properties i.e. *Hridya, deepaniya, pachaniya, vata-kapha shamaka* and *tridoshashamaka*.

KEYWORDS: Stable angina, *Vataja Hridaya Roga*, CAD, CVD, *Hridayamrita Vati*, *Arjunaksheer Paka*.**INTRODUCTION**

Today's Lifestyle is a Disease in itself. Most people don't even know they are creating platforms for the growth of these diseases through their day to day activities. Among these Cardiovascular diseases are one of them which are increasing to the size which accounts them a big cause of mortality second only to cancer. **Angina** is a clinical syndrome & the medical term for chest pain or discomfort which is one of several clinical manifestations of CAD & myocardial infarction (MI) in approximately one-half of all patients. It is **characterized** by discomfort typically located in the chest, neck, or left arm; that occurs if an area of heart muscle doesn't get enough oxygen-rich blood.^[1] The buildup of plaque called atherosclerosis which is the gradual buildup of fatty deposits, blocks several coronary arteries. The heart could not receive blood supply as the

coronary arteries become narrow and stiff and this minimizes the oxygen supply to the heart resulting in angina.^[2] There are **types** of angina such as the stable, unstable and variant angina and each of them are different from their signs and symptoms and treatments. **Stable angina** can be correlated with *Vataja-hridayaroga* in *Ayurveda* as they share similar symptoms. Angina is often precipitated by exertion, heavy meals, cold exposures or emotional stress and relieved by rest.^[3] Different hypotheses have been proposed by different scholars, by different institutes of *Ayurveda* regarding the similarity in clinical pictures of *Vataja-hridayaroga* & Stable angina. Modern treatment modalities includes medications like nitrates, b-blockers, calcium channel blockers, antiplatelet drugs & surgery are effective and also improves the condition.^[4] But all these treatment modalities are having their own

limitations and side-effects. So it is the need of the hour to have some safe and reliable, side-effect free treatment modality. *Ayurveda* is a comprehensive, traditional health care wisdom rooting from Indian subcontinent and witnessing a global reach in the contemporary world. The management of *Vataja-hridayaroga* have been described in detail. Different drugs/ formulations have been mentioned in our classics in the management of *Hrida-roga* such as *Hridya Mahakashaya*^[5] *YogendraRas*, *PrabhakarVati*, *Arjuna, karpura, hritpatri, vanpalandu, taambula, karveera, peeta karveera*,⁶ which improves the quality and functioning of heart, without causing any adverse effects. Lots of research works had already been done at various institutes of *Ayurveda*. With the aim of providing better relief to the patient, present study has been planned and aim of this proposed study is to evaluate the efficacy of *Hridyamrita Vati* with *Arjunksheer Paka* as *anupana* in *Vataja Hridroga* (Stable Angina).

AIM AND OBJECTIVES

Present research work entitled "Clinical evaluation of the effect of *Hridyamrita Vati* with *Arjunksheer Paka* as *anupana* in *Vataja Hridroga* w.s.r. Stable Angina" has been undertaken with the following main objective-

- ✓ To evaluate the efficacy of *Hridyamrita vati* with *Arjunksheerpaka* as *anupana* in *Vataja-Hridayaroga*.
- ✓ To gain conceptual and clinical studies on *Vataja Hridroga* w.s.r. Stable Angina.

MATERIALS AND METHODS

Selection of patients: This will consist of critical review of relevant literatures available in *Ayurvedic* classics, various articles, previous research works and different modern medical textbooks & journals; regarding management of *Vataja hridayaroga* (stable angina).

Inclusion criteria

- ✓ Pre- diagnosed case of stable angina.
- ✓ Patients between the age group of 18-65yrs will be selected.
- ✓ Patients irrespective of sex, religion, occupation and chronicity will be selected.

Exclusion criteria

- ✓ Obstructive CAD >80% luminal diameter stenosis in > Iepicardial coronary artery
- ✓ Patient of acute MI (myocardial infarction), DM, coma.
- ✓ Patient of abnormal heart beat.
- ✓ Chest pain due to non-cardiac problems.

Assessment Criteria

To assess the efficacy of *Hridyamrita Vati* with *Arjunksheer Paka* as *anupana*, subjectively in the management of in *Vataja Hridroga* (Stable Angina) and the assessment will be done before the treatment and after the treatment (1 month of follow up period).

Subjective parameter- In *Ayurveda*- Bheda (Tearing pain), *Hridayashunyabhava* (Numbness), *Drava* (Palpitations), *Shosha* (Mukhashosha/ dryness of mouth); In Modern- Physical exertion, Angina, Abdominal gas or indigestion feeling, Radiating pain- arm, back or others, Relieved by rest or medicines.

Investigation: If required, to support the clinical diagnosis following investigations will be done- Lipid profile, Treadmill test (TMT).

- ✓ **Total no. of patients:** 40 patients.
- ✓ **Type of study:** Clinical study
- ✓ **Level of study:** O.P.D. & I.P.D. level
- ✓ **Total period of study:** 18 months.
- ✓ **Duration of treatment:** 3 month

Method of treatment / intervention

- ✓ Selected Drugs: *Hridyamrita vati* with *Arjunksheer Paka* as *anupana*.
- ✓ Form of Medicine: *Vatiand Ksheerpaka*
- ✓ Composition of Medicine : *Hridyamrita vati*

Each tablet contains fine powder of following drugs

Table 3.1:

DRUG NAME	QUANTITY
Extracts of:	
Arjuna	1 part
Makoya	0.1 part
Punarnava	0.1 part
Nirgundi	0.1 part
Rasna	0.1 part
Giloya	0.1 part
Chitraka	0.1 part
Nagarmotha	0.1 part
Vayavidanga	0.1 part
Haran Chhoti	0.1 part
Aswagandha	0.1 part
Pipalamoola	0.1 part
Fine Powders of:	
Arjuna	0.063part
Dalchini	0.03part
Sangeysavpishti	0.006part
Akikapishti	0.006 part
PravalPishti	0.006 part
Muktashuktibhasm	0.006part
Jaharmohrapishti	0.003part
MuktaPishti	0.002part
Excipients:	
<i>Gum acacia</i>	0.03 part
Aerosil	0.001part
Talcum	0.001part

Preparation of Medicine: *HridyamritaVati* preparation were made as per the standard parameters from Patanjali private limited & *Arjunaksheerpaka* preparation were made as per the standard parameters from the classical text.

✓ Route of Administration : *Hridyamritavati* with *Arjun KsheerPaka* - Orally

✓ Dose of Medicine: *Hridyamritavati*- 2 tab. Twice a day After meal with 40 ml *Arjun ksheerpaka*.

Selection of Diet

Table 3.2:

✓ <i>Yava</i> (Barley)	<i>Kashaya, Kinchit Madhura, Sheeta, Katu, Kaphapittaghna, Sthaulya vilekhaka (Su.Su 45)</i>
✓ <i>Yava mantha</i>	<i>Trishnaghna, Dahashamaka, Triptikara</i>
✓ <i>Mudga yoosha</i>	<i>Laghu, Supachya (B.P.)</i>
✓ <i>Mudga</i> (Green gram)	<i>Kashaya, Madhura, Ruksha, Sheeta, Katupaki, Laghu, Vishada, Kapahapittaghna (Ch.Su.27/23)</i>
✓ <i>Chanaka</i> (Bengal gram)	<i>Ruksha, Sheeta, Madhura, kashaya, Kaphapittaghna</i>
✓ <i>Patta gobi</i> (Cabbage)	<i>Dipana, Pachana, Kaphapittaghna, Pramehaghna (B.P.)</i>
✓ <i>Moolaka</i> (Radish)	<i>Tikshna, Ushna, Katu, Grahi, Dipana, Vataghan Ruchiprada, Mootradoshahara (R.N.)</i>
✓ <i>Patola</i> (Parval)	<i>Katu, tikta, Ushna, Kaphaghna, Pachana, Laghu, Dipana (R.N)</i>
✓ <i>Shigru</i> (Drumstick)	<i>Tikta, Ruksha, Ushna, Vataleshmaghna (R.N.)</i>

Table 3.3:

Do	Don'ts
<ul style="list-style-type: none"> ➤ Include foods high in HDL such as almonds, walnut, oats, flax seeds. ➤ Include fatty fish such as tuna, sardine, salmon. ➤ Consume egg white and skin out chicken. ➤ Whole grains, legumes, vegetables and fruits is beneficial as they are rich in fiber. ➤ Include low fat milk products. ➤ Include 1 cup of green tea and physical activity in your daily routine. ➤ Include foods high in soluble fiber such as banana, oats, apple, guava, beans, berries, barley, quinoa, flax seeds, figs, coconut, ladies finger 	<ul style="list-style-type: none"> ➤ Avoid red meat, organ meats, shell fish as they are rich in cholesterol. ➤ Avoid consumption of foods made by reheated oil. ➤ Heavy oily foods, foods high in cream and cheese ➤ Avoid saturated fat such as palm oil, butter, margarine, ghee. ➤ Avoid day sleeping.

Exercise

- *Soorya namaskara* in gradual increasing day by day.
- Avoid day sleep.

Yoga

1. Pranayama

- *Anulom – Vilom*... 10 mint
- *Bhastrika*... 5 mint

2. Asanas

- *Soorya namaskara* in gradual increasing day by day.

- *Shavasana*

Follow Up: The follow up will be done at 1 month interval during 3 months of the trial.

Method of collection of data

After the completion of treatment the assessment will be done on the same criteria as before the treatment and scoring will be done on the same pattern. The different tables of score obtained before treatment and after treatment will be prepared for the comparison and statistical analysis will be done.

OBSERVATION AND RESULT

Table 4.1: Effect of Therapy on Bheda (Tearing Pain).

N	Mean Score		D	Relief %	W	P	Significance
	BT	AT					
33	0.0303	0.000	0.0303	100 %	1.000	>0.9999	NS

SINGLE Group: In this, the percentage of relief was 100 % and the effect of therapy was not significant at $p > 0.005$.

Table 4.2: Effect of Therapy on Hridshunayatabhava (Numbness).

N	Mean Score		D	Relief %	W	P	Significance
	BT	AT					
33	0.515	0.000	0.515	100%	91.000	0.0002	ES

SINGLE Group : In this, the percentage of relief was 100% and the effect of therapy was Extremely significant at $p < 0.001$.

Table 4.3: Effect of Therapy on Stambha (Chest Tightness).

N	Mean Score		D	Relief %	W	P	Significance
	BT	AT					
33	0.182	0.000	0.182	100%	15.000	0.0625	NS

Single Group: In this, the percentage of relief was 100 % and the effect of therapy was not quite significant at $p > 0.005$.

Table 4.4: Effect Of Therapy On Drava (Palpitation).

N	Mean Score		D	Relief %	W	P	Significance
	BT	AT					
33	0.333	0.0303	0.303	90.99%	55.000	0.002	VS

Single Group: In this, the percentage of relief was 90.99 % and the effect of therapy was Very significant at $p < 0.005$.

Table 4.5: Effect Of Therapy On Shosha (Dryness Of Mouth).

N	Mean Score		D	Relief %	W	P	Significance
	BT	AT					
33	0.455	0.0606	0.394	86.59%	78.00	0.0005	ES

Single Group: In this, the percentage of relief was 86.59% and the effect of therapy was extremely significant at $p < 0.001$.

Table 4.6: Effect Of Therapy On Physical Exertion.

N	Mean Score		D	Relief %	W	P	Significance
	BT	AT					
33	0.909	0.212	0.697	76.67	210.00	<0.0001	ES

Single Group: In this, the percentage of relief was 76.67 % and the effect of therapy was extremely significant at $p < 0.001$.

Table 4.7: Effect Of Therapy On Angina.

N	Mean Score		D	Relief %	W	P	Significance
	BT	AT					
33	1.424	0.727	0.697	48.94	231.00	<0.0001	ES

Single Group: In this, the percentage of relief was 48.94 % and the effect of therapy was extremely significant at $p < 0.001$.

Table 4.8: Effect of Therapy On Abdominal Gas / Indigestion Feeling.

N	Mean Score		D	Relief %	W	P	Significance
	BT	AT					
33	0.424	0.0606	0.364	85.84	55.000	0.002	VS

Single Group: In this, the percentage of relief was 85.84% and the effect of therapy was very significant at $p < 0.005$.

Table 4.9: Effect Of Therapy On Radiating Pain.

N	Mean Score		D	Relief %	W	P	Significance
	BT	AT					
33	0.152	0.000	0.152	100%	10.00	0.1250	NS

Single Group: In this, the percentage of relief was 100% and the effect of therapy was not significant at $p > 0.005$.

Table 4.10: Effect of Therapy on Pain Relieved by Rest / Medicine.

N	Mean Score		D	Relief %	W	P	Significance
	BT	AT					
33	0.0303	0.0606	0.0303	100%	1.000	>0.999	NS

Single Group: In this, the percentage of relief was 100% and the effect of therapy was not significant at $p > 0.005$.

Table 4.11: Over All effect of therapy on 33 patient of single group.

Symptoms	Bheda	H.S.	Stambha	Drava	Shosha	P.E.	Angina	A.G.	Radiating P.	R.Rest/Med
RELIEF %	100	100	100	90.99	86.59	76.67	48.94	85.84	100	100

Table 4.12: Over All Effect Of Therapy On 33 Patient Of Single Group.

Status	No. of patients	Percentage (%)
Complete relief (100%)	07	21.21
Markedly improved ($\geq 75\%$)	13	39.4
Moderate improved ($\geq 50\%$ upto 74%)	11	33.33
Mild improved ($\geq 25\%$ upto 49%)	02	6.06
No improvement / Unchanged ($\leq 25\%$)	00	00

This study shows that overall effect of therapy, 21.21% had complete relief, 39.4% of patients were markedly improved, 33.33% were moderately improved, 6.06% were mild improved and there was not any of patient who had no improvement. Out of 40 patients, 7 patients were dropout who did not continue therapy.

5. DISCUSSION

Discussion part of the study deals with the possible reasoning based on the specific logic to explain the interpretation of the findings and correlates them with their causes. Hence, discussion forms one of the most crucial parts of any scientific research work.

DISCUSSION ON DEMOGRAPHIC OBSERVATIONS

AGE:- Maximum patients (62.5%) belonged to the age group 51-65 yrs. Many studies have proved the fact that risk of increasing lipids increases with age men aged 50 years or older and women aged 55 years or older are at increased risk of high cholesterol and heart disease.^[6]

SEX:- It was found that maximum patients were Male 80% followed by 20% of patients who were female. The possible reason could be the ignoring nature of female towards visiting Hospitals.^[7]

RELIGION:- A study of religion reveals that maximum patients belonged to Hindu community 95% which may be due geographical predominance of Hindus in haridwar district.

MARITAL STATUS:- In our study maximum patients were Married 97.5%. This may be attributed to their high calorie diet of personal choice at home and lack of exercise. Also stress which is a cause of dyslipidemia which leads to angina was reported more in married individuals.

EDUCATION:- In this study it was noted that maximum patients had completed Graduation 60%. This generally proves that there is more awareness about dyslipidemia in the educated classes. It was observed that more patients from the educated classes were aware of cholesterol and its relation to heart diseases and other complications and hence were more liable to undergo diagnostic as well as therapeutic measures to overcome it. This was opposed to the uneducated classes where the patients did not respond seriously on the diagnosis of the disease due to lack of symptoms.

OCCUPATION:- The maximum patients 55% were service men, followed by 12.5% house wives. 55% were government employee performing mostly desk work which also leads to physical inactivity there by leading a sedentary life style which leads to a less energy expenditure than uptake. 12.5% were House wives, are related to very less physical activity, stressful conditions and were mostly consuming fast food thereby not having a dietary control which made them prone to heart diseases.

SOCIOECONOMIC STATUS:- The data revealed that maximum 57.5% patients belonged to upper middle-class, followed by middle-class 22.5% i.e. The high prevalence in upper middle-classes of society revealed the stressful lifestyle and faulty dietary habits causes heart disease. This may also be due to the regional habits where there is dominance of oily and fried foods in all classes.

HABITAT:- In this study maximum patients 72.5% were resident from Urban area, the possible reason could be the location of hospital in urban area of haridwar so maximum patient came from the nearby areas. The secondary reason could be faulty dietary habits and lifestyle of the people residing in urban areas.

FAMILY HISTORY:- Incidence of Family history of stable angina was Present in only 17.50% patients. This shows that most of the patients included in the study had stable angina due to causes like faulty diet and life style are other clinical conditions like obesity.

DIETARY HABITS:- Dietary habits wise distribution showed that maximum patients 72.5% had a habit of *Vishamashana*. Today's life style has led to such dietary habits. The bad eating habit is found one of the main causes of obesity.^[8] It is also known to cause *Agni Dushhti*, which is the key to the pathogenesis of dyslipidemia, which leads to heart diseases i.e. stable angina. Mixed diet was observed to be predominant in this study. Maximum patients 77.5% were consuming irregularly red meat (mutton and pork) chicken and eggs. All animal products are rich sources of cholesterol and trans-fats which disturb normal lipid metabolism. *Mansa* is also known to contain *Vasa* which being qualitatively similar to *Meda* results in *Medovridhhi*. Also the qualities of *Mamsa* are conducive to *Kapha Prakopa* and *Medo Vriddhi*.

ADDICTIONS:- 42.5% & 40% patients had an addiction for smoking & alcohol. The concentration of high-density lipoprotein (HDL) cholesterol is lower in heavy smokers, and the concentrations of triglycerides and cholesterol are higher. The relation of alcohol with elevated lipid levels has been proved. Tea was frequently taken by 35% of the patients. It humped the *Jatharagni*, as like tea fast food has the same effect on *Jatharagni*. Fast food established fact that constant frying in same oil can release an even toxic substance. Both leads to formation of *Ama* at the level of digestion and metabolism.

SLEEP:- 40% patients had sound sleep and 60% patients had disturbed sleep pattern. Disturbed sleep pattern or REM sleep are increased and irregular autonomic activity, increased autonomic activity might add extra stress to an already borderline hemodynamic condition in angina patients. Nowlin (1965) found a correlation between periods of rapid eye movement and the incidence of ECG changes.^[9]

KOSHHA:-72.5% patients were having *Krura Koshth KaphaDosh* is mainly vitiated in this disease patient had *KruraKoshtha* as obstruction caused by *Kapha* and *Ama* leads to Vitiating of *Vayu* which is responsible for *KruraKoshtha*. *Vata dosha* is vitiated in *Krura Koshth* which leads to *Vishmagni* which further leads to formation of *Ama* due to impaired digestion of fat. This *Ama* circulate in whole body and creates *Srotosang* and *Medodhusti*.

SHARIRA PRAKRITI:-50% patients had *Vata - Kaphaja Prakriti* and 25% had *Kapha-Pittaj & VataPittaja Prakriti*. The data shows dominancy of *Kapha Dosh* in *Prakriti*, *Acharya Charaka* has said (Ch. Vi. 6/18) if an individual with a *Kapha* predominant constitution resorts to use of *Kapha* aggravating factors it results in an instantaneous aggravation of *Kapha Dosh*. Also the strength of a *Kaphaja* disease will be more in *Kapha* dominant individuals. Here *Kapha* is the dominant *Dosh* which on vitiation leads to the pathogenesis of dyslipidemia & various heart disease.

MANAS PRAKRITI:-Maximum patients 57.5% had *tamas Prakriti*, followed by *rajas Prakriti* 42.5%. Here it should be appreciated that *Bhavaprakash* has considered increased *Tamasa Guna* and declined *Satvaguna* for the occurrence of *MedoRoga*.

VYAYAMA SHAKTI:- 62.5% patients had *Avara Vyayama Shakti* and 55% had *Madhyamq Vyayama Shakti*, *Avara vyayam* was one of the causative factors. Physical inactivity is associated with obesity & heart diseases.

ABHYAVAHARANA SHAKTI, JARANA SHAKTI:-60% patients had *madhyam Abhyavaran Shakti*, 40% patients had *uttam Abhyavaran Shakti*. The

JaranaShakti was *madhyam* in maximum no. of patients constituting 70%. *Abhyavaran* and *Jarana Shakti* both assess only *Jatharagni*. But in *Medhodusti*, there is vitiation of *dhatwagni* specially *Medhodhatwagni* which leads to formation of *Aama*. *Aama* is the main cause of dyslipidemia. *Mand Medhoagni* may lead to *Abaddha Medha* which results to weight gain as a result of digestive system's inability to properly break down fatty foods.

The inability to properly absorb essential nutrients, vitamins and minerals affects the body's metabolism, lowering the rate at which it burns calories and leading to accumulation of excess body fat. The channels of *vata* obstructed by the increased fat inside the abdomen, *Vata* then begin to act fast inside the abdomen, increase the digestive activity, making for voracious hunger and craving for large quantity of food.

DOMINANT RASA AND GUNA OF AAHAR:-47.5% patients had a habit of taking *Madhura Rasa and Lavana rasa* dominant and *Guru-Snigdha-SheetaGuna* dominant diet. These all factors are responsible for vitiation of *Kapha & vata Dosh* and *Meda Dhatu*.

EXERCISE:-62.5% patients were not doing exercise and this leads to increased weight and high lipid levels. 55% patients were doing occasional exercise, only 2.5% were doing regular exercise. Sedentary life style is stated as very important cause of dyslipidemia.^[10] More calorie intake and less energy expenditure results in increase energy input which leads to disturbance in lipid metabolism which can also serve as an etiological factor for dyslipidemia. As people get engrossed in day to day work and forget to lead a healthy life. *Avyayam* has been told as a cause of *Medoroga* by all *Acharyas*.

YOGA:- The improvement in the parameter of lipid profile after yoga could be due to increased hepatic lipase and lipoproteins lipase at cellular level, which affects the metabolism of lipoprotein and thus increase uptake of triglyceride by adipose tissues. Yoga reduces stress induced sympathetic over activity. Yoga therapy has beneficial effect on serum lipid levels and should be included in therapy along with other measures. *Yoga* practices there is reduction of the unwanted chemical response on the cholesterol molecules. *Pranayam* like *Anulom-Vilom* are right breathing techniques, improves the circulation of blood and enhance the intake of oxygen all over body which increases the bioavailability of drugs.

BODY WEIGHT & BMI:-Maximum number of patients 42.5% had BMI in range 25-30 and only 37.50% patients had normal BMI. The disease has a strong associate on with obesity and other metabolic disorders. Sedentary life style is stated as very important cause of dyslipidemia and heart diseases.

ASSESSMENT OF SUBJECTIVE PARAMETERS

On assessment of subjective symptoms it was found that effect of *Hridyamrit vati* along with *Arjunksheer paka* as *anupana*, life style modification and dietary restriction over the symptom like, *Hridyashunyatabhava*, *Shosha*, Physical exertion, & Angina was statistically extremely significant ($P < 0.001$); while statistically very significant ($P < 0.005$) result was found over the subjective parameters like *Drava* & Abdominal gas.

**DISCUSSION ON CLINICAL PROFILE
CHIEF COMPLAINTS**

In the present study in all symptomatic assessment, symptom of Angina (60%) was found maximum patients followed by Physical exertion (55 %) *Hridshunayatabhava* (32.5 %), *Shosha* (30%), *Drava* (27.5%), Abdominal gas (27.5%), Radiating pain (15%), *Sambha* (12.5 %), Relieved by rest (7.5 %) and *Bheda* (2.5%).

DISCUSSION ON OVERALL EFFECT OF THERAPY

This study shows that overall effect of therapy, 21.21% had complete relief, 39.4% of patients were markedly improved, 33.33% were moderately improved, 6.06% were mild improved and there was not any of patient who had no improvement.

Properties Of Each Drug Of *Hridyamrita Vati* And *Arjuna Ksheer Paka***Table 5.1: *Arjunksheer Paka*.**

Drug	Botanical name	Rasa	Guna	Virya	Vipaka	Quantity
<i>Arjuna bark</i>	<i>Terminalia Arjuna</i>	<i>Kashaya</i>	<i>Laghu, Ruksha</i>	<i>Shita</i>	<i>Katu</i>	40ml

Table 5.2: *Hridyamrita Vati*.

Drug	Botanical Name	Rasa	Guna	Virya	Vipaka
Arjuna	<i>Terminalia arjuna</i>	<i>Kashaya</i>	<i>Laghu, ruksh</i>	<i>Shita</i>	<i>Katu</i>
Makoya	<i>Solanum nigrum</i>	<i>Tikt, katu, Madhur</i>	<i>Laghu, Snigdha</i>	<i>Ushna</i>	<i>Madhura</i>
Punarnava	<i>Boerhavia diffusa</i>	<i>Madhur, Tikta, Kashaya</i>	<i>Laghu, Ruksh</i>	<i>Ushna</i>	<i>Madhura</i>
Nirgundi	<i>Vitex negundo</i>	<i>Katu, Tikta</i>	<i>Laghu, Ruksh</i>	<i>Ushna</i>	<i>Katu</i>
Rasna	<i>Pluchea lanceolata</i>	<i>Tikta</i>	<i>Guru</i>	<i>Ushna</i>	<i>Katu</i>
Giloya	<i>Tinospora cordifolia</i>	<i>Tikta, Kashaya</i>	<i>Guru, Snigdha</i>	<i>Ushna</i>	<i>Madhura</i>
Chitraka	<i>Plumbago zeylanica</i>	<i>Katu</i>	<i>Laghu, Ruksha, Tikshna</i>	<i>Ushna</i>	<i>Katu</i>
Nagarmotha	<i>Cyperus rotundus</i>	<i>Tikta, Katu, Kashaya</i>	<i>Laghu, Ruksha</i>	<i>Shita</i>	<i>Katu</i>
Vayavidanga	<i>Embeliaribes</i>	<i>Katu, Kashaya</i>	<i>Laghu, Ruksha, Tikshna</i>	<i>Ushna</i>	<i>Katu</i>
Haran Chhoti	<i>Terminalia chebula</i>	<i>Panchrasa, except Lavana</i>	<i>Laghu, Ruksha</i>	<i>Ushna</i>	<i>Madhura</i>
Aswagandha	<i>Withania somnifera</i>	<i>Tikta, Katu, Madhura</i>	<i>Laghu, Snigdha</i>	<i>Ushna</i>	<i>Madhura</i>
Pipalamoola	<i>Piper longum</i>	<i>Katu</i>	<i>Laghu, Snigdha, Tikshna</i>	<i>Anushnshita</i>	<i>Madhura</i>
Dalchini	<i>Cinnamomum zeylanicum</i>	<i>Katu, Tikta, Madhura</i>	<i>Laghu, Ruksha, Tikshna</i>	<i>Ushna</i>	<i>Katu</i>
Sangeysavishti	Jade	-	<i>Ruksh, Shita</i>	<i>Shita</i>	-
Akikapishti	Hessonite	<i>Amla</i>	<i>Ushna, Ruksh</i>	<i>Shita</i>	-
PravalPishti	Coral calcium	<i>Madhur, ishatamla</i>	<i>Laghu, Ruksha</i>	<i>Shita</i>	<i>Madhura</i>
Muktashuktibhasm	Pearl Oyster Shell	<i>Katu</i>	<i>Snigdha</i>	<i>Shita</i>	<i>Madhur</i>
Jaharmohrapishti	Serpentine	-	<i>Ushna, Ruksh</i>	-	-
MuktaPishti	Pearl	<i>Madhur</i>	<i>Laghu</i>	<i>Shita</i>	<i>Madhur</i>
<i>Gum acacia</i>	-	<i>Kashaya</i>	<i>Guru, Ruksh</i>	<i>Shita</i>	<i>Katu</i>

**PROBABLE MODE OF ACTION OF THE
HRIDYAMRITA VATI & *ARJUNA KSHEER
PAKA*:-**

“किञ्चित् रसेन कुरुते कर्म वीर्येण चापरम् |

द्रव्यं गुणेन पाकेन प्रभावेण च किञ्चन ||” (Ch. Su. 26/71)^[11]

Some drugs act by means of Rsa, other Veerya and other by Guna, Vipaka or Prabhava.

“रसं विपकास्तौ वीर्यं प्रभावःतान् अपोहति |

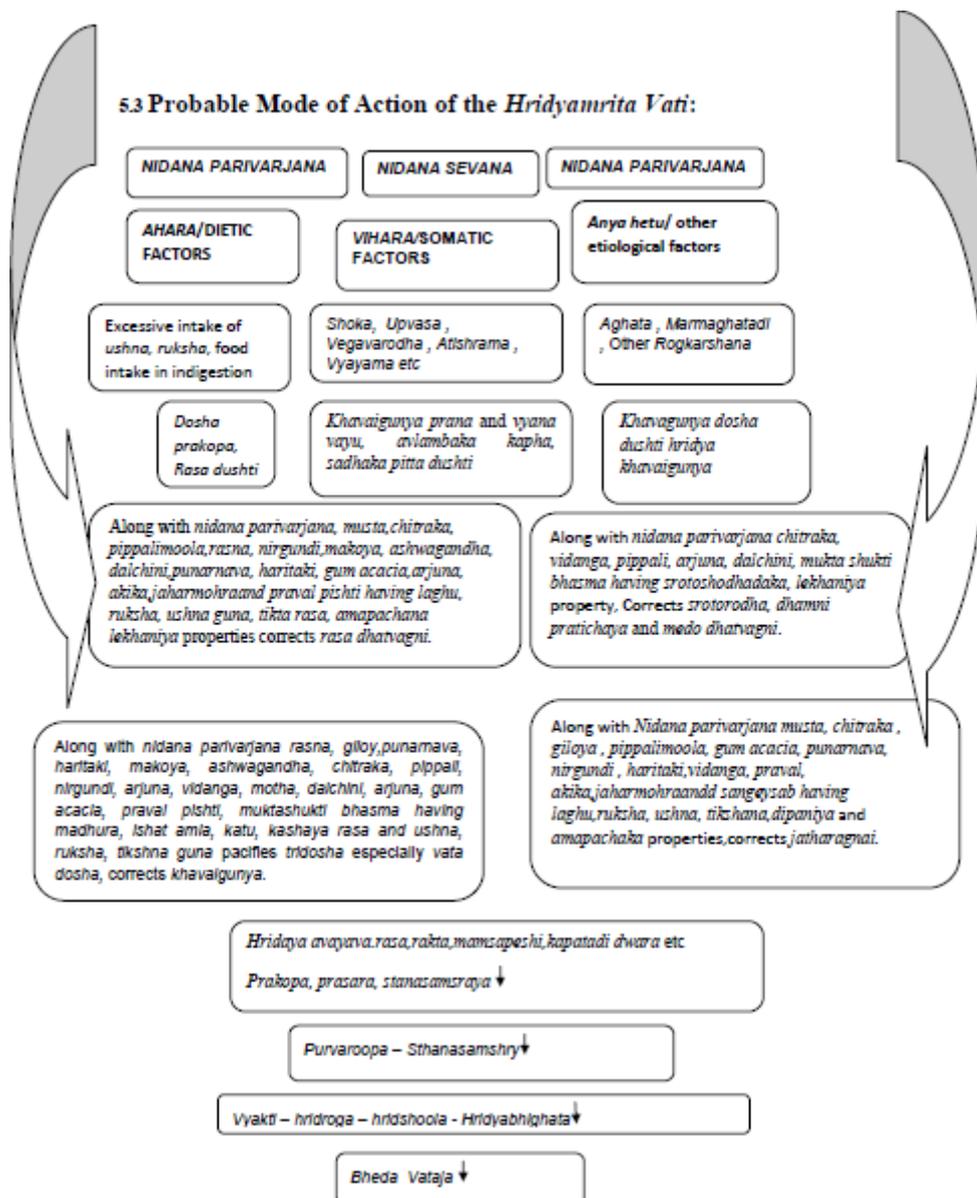
बलसाम्ये रसादीनां इति नैसर्गिकं बलम् ||” (Ch. Su. 26/72)^[12]

In case of equality of strength, Vipaka subdues Rasa, Veerya subdues both and prabhava all these three. These are the nature relative degrees of strength.

“न तु केवलं गुण प्रभावादेव द्रव्याणि कार्मुकाणि भवन्ति, द्रव्याणि हि द्रव्यप्रभावात् गुणप्रभावात् द्रव्यगुणप्रभावाच्च कार्मुकाणि भवन्ति |” (Ch. Su. 26/13)^[13]

The drugs are active not only due to properties but also due to their own intrinsic composition, properties and both combined together in particular time, on reaching a particular locus, with a particular mechanism and objective.

5.3 Probable Mode of Action of the *Hridyamrita Vati*:

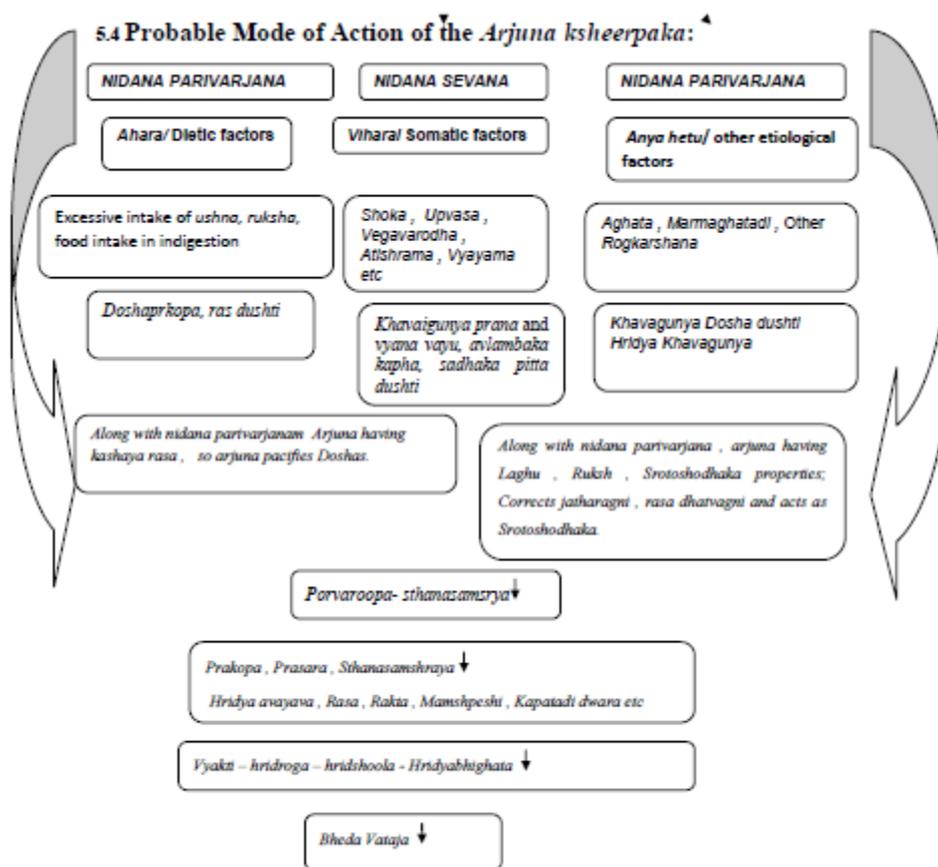


Pharmacological Action of contents of The *Hridyamrita Vati*

- Rasna – *Vataharanam*,^[14] (Ch.Su.25)
- Musta – *Sangrahika, Dipaniya, Pachaniyanam*,^[15] (Ch.Su.25)
- Chitraka- *Dipaniya, Pachaniya*,^[16] (Ch.Su.25)
- Vidanga- *Krimighnanam*,^[17] (Ch.Su.25)
- Pippalimoola- *Dipaniya, Pachaniya, Anaha prashamananam*,^[18] (Ch.Su.25)
- Giloya- *Sangrahika, Vatahara, Dipaniya, Shleshma shonita vivandha prashamananam*,^[19] (Ch.Su.25)
- Haritaki-*Pathyanam*,^[20] (Ch.Su.25)
- Praval pishti, Mukta pishti, Punarnava, Haritaki, Makoya, Ashwagandha; having *madhura rasa*; which is *Pittavishamaarutghna, kshinkshatasandhankar*.^[21] (Ch.Su.26)
- Praval pishti, & Akika pishti; having *ishat amla rasa*, which is *hridyanam, agnim deepayati, hridyam tarpayati, vatam anulomyati*,^[22] (Ch.Su.26)

- Chitraka, Pippali, Nirgundi, Vidanga, Musta, Makoya, Ashwagandha, Dalchini, Haritaki, and Mukta shukti Bhasma having Katu rasa, which is shonita sanghata bhinnati and margan vivrinoti,^[23] (Ch.Su.26)
- Rasna, Nirgundi, Giloya, Musta, Makoya, Ashwagandha, Dalchini, Punarnava and Haritaki having Tikta rasa which has Lekhaniya functions. Tikth Rasa helps in Agni Pradeepna. Which increase the *jathraagni* hence helps in *Deepna* and *Pachana*. The composition of *Tikth* rasa is *Vayu* and *Aakash Mahabhuta*. Though it doesn't have *Agni Mahabhuta* but still increases the *Jathraagni* because *Vayu* and *Aakash Mahabhuta* works in the micro channels of body. Hence increases the bioavailability of the drug in the body.^[24] (Ch.Su.26)
- Arjuna, Gum acacia, Giloy, Vidanga, Musta, Punarnava, and Haritaki having *Kashaya* rasa; which is *Samshamana Shlesmaraktapitta prashamana*. (Ch.Su.26)

- *Makoya, Punarnava, Pippalimoola, Giloy, Haritaki, Ashwagandha, Praval pishti, Mukta pishti, Mukta shukti* bhasma having *madhur vipaka*, which is *sristavidamutra*.^[25] (Ch.Su.26)
- *Arjuna, Punarnava, Nirgundi, Musta, Haritaki, Makoya, Ashwagandha, Chitraka, Vidanga, Pippali, Mukta* and *Praval Pishti* having *laghu* guna which is *srotoshodhana*.^[26] (Ch.Su.26)
- *Akika* and *jaharmohra* pishti having *Ushna* guna which is *Vatakaphashamana, raktasravapratana*.^[27] (Ch.Su.26)
- *Gum acacia, Arjuna, punarnava, nirgundi, musta, Haritaki, Praval, Sangeysab, akika* and *Jaharmohra pishti* having *Ruksha* guna, which is *Kaphashamana*.^[28] (Ch.Su.26)
- *Chitraka, Vidanga* and *Pippali* having *Tikshna* guna, which is *Vatakaphashamana* and *Lekhniya* functions.^[29] (Ch.Su.26)



Pharmacological action of the Arjunaksheerpaka

- Antianginal (Stable Angina Pectoris), Antiatherogenic, Anti-ischaemic Anti-oxidant, Cardioprotective, Hypolipidemic.^[28]
- Arjuna having *kashaya rasa* which is *samshamana, shlesmaraktapittaprashamana*.^[30] (Ch. Su.26).
- Arjuna having *laghu, ruksha* guna; which is *Srotoshodhana* and *kaphaprashamana*.^[31] (Ch.Su.26).

6 SUMMARY

- To study the Aetiopathology of *VATAJ HRID ROGA*.
- To evaluate the effect of dietary modification and life style on Heart diseases.
- To evaluate the effect of *hridyamrit vati* with *arjuna ksheerpaka* as *anupana* on *ANGINA/heart* diseases.

- In the First Chapter of the dissertation, Introduction is given consisting of brief description about the disease of heart, its prevalence in today's era and the need for *Ayurvedic* management as well as the brief description of the *Aahar*, diet, *hridyamrit vati* & *arjun ksheerpaka* and its mode of action, along with brief results of this dissertation.
- In the Second Chapter, The Conceptual study begins with the review of *Ayurvedic* literature of the disease *Hridroga*. A detail description of *Nidana Panchaka* along with *Samprapti, Updrava* of *Hridroga* is explained. A brief overview of modern description about *ANGINA* has also been carried out. The Prevalence, Incidence, Mortality and elaborate classification of etiological factors are also discussed in this part.

- In the Third Chapter of the dissertation deals with the Material and Methods, at the outset summarizes the aims and objects of the study. The selection of the patients, the criteria of inclusion, exclusion and diagnosis, method of drug administration and assessment of the effects along with the methods adopted in the study have been dealt in detail. In the
- Fourth Chapter deals with Observations and Results. The observations made were tabulated and the results were analyzed statistically and were presented with the details.
- In the Fifth Chapter comprises Discussion, where the observations made in the clinical study were discussed and can be summarized as follows:
 - Maximum number patients (62.5%) were found in the age group of 51-65 years.
 - Maximum number patients were Male (80%).
 - Maximum number of patients belongs to Hindu religion (95%).
 - Maximum patients were Married (97.5%).
 - Maximum number of patients were Graduate pass (60%).
 - Maximum number of patients were in Service (55%).
 - Majority of the patients belong to upper middle class family (57.5%) followed by (22.5%) patients from the Middle class.
 - Incidence was High (72.5%) in patients from Urban areas.
 - In the present study 77.5% were Mixed and 15% patients were having Vegetarian & 7.5% patients were having non- Vegetariandietary habit.
 - Maximum 67.5% patients were having *Vishamagni* followed by 22.5% patients who were having *Tikshnagni*.
 - 72.5% patients were having *KruraKoshth*.
 - 84.5% patients were taking *Guru, Snigdha Guna* dominant diet.
 - 47.5% patients were taking *Madhura Rasa & Lavana rasa* dominant diet.
 - Maximum patients were of *Vata-KaphaPrakriti* (50%) followed by *kapha-pittaj & vatapittaja Prakriti* (25%)
 - Maximum patients were of *Rajas – TamasPrakriti* i.e. (57.5%).
 - Maximum patients in the present study had *MadhayamaSara*(80%- twaka, 40% meda sara)
 - Maximum patients in the present study had *Madhayamasamhanana* (82.5%).
 - Maximum patients in the present study had *MadhayamaSatmaya* (47.5% - Madhura & Lavana satmya).
 - Maximum patients in the present study had *MadhayamaSatva*(85%).
 - *Madhyam and Avara, jarana and Ahara shakti* was present in 60% of patients.
 - Maximum patients in the present study had *Madhyam Jarana Shakti* (70%)
- Majority of patients (62.5%) in the present study had *Avara vyayam shakti*, followed by (55%) had *Madhyama Vyayam shakti*.
- 42.5% & 40 % patients had an addiction for smoking& alcohol respectively.
- Maximum (62.5%) patients were not doing any exercise.
- Maximum (60%) patients had disturbed sleep.
- There is full description of *Hridroga* is present in Ayurvedic classics but less description of *vataj hrid roga* is present. A hypothesis is made and correlates this condition with *Ama*.
- The common symptoms of *Rasavahasrotodushti, Pranvahasrotodushti* and *Lakshna* of *vataj hriroga* are taken as symptoms because all these are related to each other and *Sadharmi* in *Guna*.

Statistical Analysis

On assessment of subjective symptoms it was found that effect of *Hridyamrit vati* along with *Arjuna ksheerpaka* as *anupana*, life style modification and dietary restriction are as follows -

- Statistically extremely significant results was found in subjective parameters like *Hridshunaytabhava, Shosha*, Physical exertion and Angina.
- Statistically very significant results found in *Drava* and Abdominal gas.
- Statistically not significant results was found in subjective parameters like *bheda, stambha*, radiating pain and relieved by rest or medicines.

CONCLUSION

Conclusion drawn from present work are as follows:-

- On the basis of clinical manifestation *Vataj hridya roga* can be correlated with stable angina, although *hrid roga* is *tridoshaj vyadhi*, with dominancy of *vata* and *kapha dosha*.
- Observation and results obtain from the series of patients of *vataj hridya roga* (stable angina) shown the encouraging improvement in the symptoms of *vataj hridya roga* treated with *hridyamrita vati* with *arjun ksheerpaka* as *anupana*.
- During the whole trial not any side effects of medicine has been observed, so these medicines can be safely used for patients of angina.
- All these medicines which has been taken for the study are cheaper.
- The study was carried out with sample size of 40 patients and duration of treatment of 3 months, 7 patients reported having an excellent improvement.
- It is observed during study that the Ayurvedic medicine along with modern medicines work in conjugation. And the significant improvement were noticed symptomatically in the patients of *vataj hridaya roga*.

Recommendation

- As this was the single group study shown good results and efficacy of therapy in the *vataj hrid roga*

(stable angina), further comparative study or randomized clinical trial can be design for the study.

- Due to the lack of financial support, the assessment was done only on the basis of symptoms.
- Further researchers may include nuclear test, Computed Tomography Angiography, Percutaneous transluminal coronary angioplasty (PTCA) in the study for pre and post assessment of efficacy of therapy in the vataja hrid roga / stable angina
- As Stable angina is a chronic disease with more prevalence rate, So in further studies more sample size can be taken and study can be of long duration for better assessment of efficacy of therapy in the vataja hridaya roga (stable angina).

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