Research Article

www.ijrap.net

THE EFFECT OF LASUNAIRANDADI KASHAYA IN MANAGING CORONARY ARTERY DISEASE AS AN ADD ON THERAPY: A CASE STUDY

Kasthuri Nair A *[1], Arun Pratap [2], Miharjan K [3], Jishnu R [4], Lekshmi R [5]

[1]PG Scholar, Department of Kayachikitsa, Pankajakasthuri Ayurveda Medical College and Post Graduate Centre, Kattakkada, Thiruvananthapuram, India

[2]Associate Professor, Department of Kayachikitsa, Pankajakasthuri Ayurveda Medical College and Post Graduate Centre, Kattakkada, Thiruvananthapuram, India

[3]Professor and HOD, Department of Kayachikitsa, Pankajakasthuri Ayurveda Medical College and Post Graduate Centre, Kattakkada, Thiruvananthapuram, India

[4]Associate Professor, Department of Samhitha, Sanskrit and Siddhaanta, Pankajakasthuri Ayurveda Medical College and Post Graduate Centre, Kattakkada, Thiruvananthapuram, India

[5]Assistant Professor, Department of Kayachikitsa, Pankajakasthuri Ayurveda Medical College and Post Graduate Centre, Kattakkada, Thiruvananthapuram, India

Received on: 28/02/19 Accepted on: 22/04/19

***Corresponding author**
E-mail: kasthurinair@gmail.com

DOI: 10.7897/2277-4343.100242

ABSTRACT

Coronary Artery Diseases (CAD) is a class of diseases that involve the heart or blood vessels. CAD mainly involves underlying mechanism of atherosclerosis which may be caused by high blood pressure, smoking, diabetes, lack of exercise, obesity, dyslipidaemia, poor diet and excessive alcohol consumption. In India, more than 10.5 million deaths occur annually due to CAD. According to 2010-2013 RGI data, proportionate mortality from CVD increased to 23% of the total. Ayurveda vividly describes heart diseases in the context of Hridroga in different classical texts. These concepts can be applied to CAD also. It can be interpreted as Sannipataja Hridroga with Kapha- Vata predominance and it occurs due to Praana-Rasavaha srotodushti. A 50 year old male patient; already diagnosed as CAD since 2 years came to our OPD with complaints of Dyspnoea on exertion (DOE), chest heaviness and occasional pain with general weakness of the body since 1 week, with ECG, ECHO, TMT and Coronary Angiography reports which shows CAD changes. On investigation, slight increase in Serum Total Cholesterol and LDL were noted. The patient was advised to take 32 ml of Lasunairandadi Kashaya (decoction) with Hingu (150 mg) as Prakshepa Dravya (adjuvant) for 90 days along with the treatment as usual (TAU). Lasunairandadi Kashaya is mentioned in Sahasrayogam, Vridhi Prakaranam. Most of the drugs are Hridya (cardiac protector), Tridoshahara (alleviation of aggravated bodily humours), Ushna Veerya (hot in potency) and Katu Vipaka (state of food/drug after digestion) and Lasuna (garlic) is Prabhanjananam Sreshtam (best for correcting Vata Dosha), which in turn helps in Srotosodhana (purifies the vessels) and Vataanulomana (downward movement of Vata). At the end of the study there was significant reduction in the TMT score along with the symptoms.

Keywords: Coronary Artery Disease, CAD, Lasunairandadi Kashaya

INTRODUCTION

Coronary Artery Diseases (CAD) is a class of diseases that involve blood vessels of the heart. CAD mainly involves underlying mechanism of atherosclerosis which may be caused by high blood pressure, smoking, diabetes, lack of exercise, obesity, dyslipidaemia, poor diet and excessive alcohol consumption[1]. Hypertension causes 13 % CAD death; Tobacco causes 9 % CAD death; Diabetes Mellitus causes 6 % CAD death; Lack of exercise causes 6 % CAD death; Obesity causes 5 % CAD death[1].

CAD accounts ~30 % of mortality, studies conducted in Kerala reported very high CAD mortality rates approaching 80 % for men and 75 % for women and is the leading cause of death globally[1]. In India, more than 10.5 million deaths occur annually due to CAD. According to 2010-2013 RGI data, proportionate mortality from CVD increased to 23 % of the total[2,3]. It is now affecting almost all sections of the society from young to old. Statistics also shows an increased prevalence of CAD in India as compared to other developing countries[1].

India has great burden of CAD and the health status of Kerala population differs from that of other Indian states. The overall prevalence of CAD in subjects at or below the age of 60 years was 7.8 % in Kerala. CAD is quite serious as it carries a high risk of death. The pathogenesis involves combination of atherosclerotic plaques and a dynamic component related is coronary vasoconstriction, platelet activation and transient thrombus formation[4,5]. The common symptoms are chest pain or discomfort, shortness of breath, chest heaviness, fatigue etc. which occur with exercise or emotional stress, last less than a few minutes, and gets better with rest[6].

There are lots of studies comparing different treatment modalities for stable angina. The efficacy of a particular therapy can best be assessed by objective evaluation of its ability to control ischemia. Coronary Angioplasty does not offer a complete reduction in mortality or the incidences of Myocardial Infarction in patients with CAD since it have a risk of restenosis in arteries[7].

Coronary Artery Disease (CAD) is a risk factor for Acute Coronary Syndrome (ACS). Although CAD seems to be a benign condition it can progress to Ischemic Heart Disease and thus may

cause death in some patients. Even though modern medicine has anti platelet therapy with statins for life long, again risk of CAD is more[8].

The ancient medical wisdom –Ayurveda vividly describes heart diseases in the context of Hridroga in different classical texts. These concepts can be applied to understand CAD also. It can be interpreted as Sannipataja Hridroga with Kapha- Vata predominance and it occurs due to Praana-Rasavaha Srotodushti. The causative factor can be understood as Agnimandhya (reduced digestive fire) leading to Ama (bio toxins) which is reflected in Dhatvagni Mandya which impairs Dhatuparinama (transformation of Dhathus) thus to Rasa Dushti and that may lead to Upalepatva (coating)– Sanga (obstruction) in Srotas(vessels) which hamper Vyanavaayu leading to Hridroga.

Lasunairandadi Kashaya is mentioned in Sahasrayogam[9], Vridhi Prakaranam. It consists of Lasuna (*Allium sativum* Linn), Eranda (*Ricinus communis* Linn), Kuberaksha (*Caesalpinia bonduc* Linn), Punarnava (*Boerhavia diffusa* Linn), Hapusha (*Sphaeranthus indicus* Linn), Shunti (*Zingiber officinale* Rosc) and Hingu (*Ferula asafoetida* Linn), in which Lasuna is Prabhanjananam Sreshtam (best for correcting Vata Dosha) and most of the drugs are Hridya (cardiac protector), Tridoshahara (alleviation of aggravated bodily humours), Ushna Veerya (hot in potency) and Katu Vipaka (state of food/drug after digestion) which in turn helps in Srotosodhana (purifies the Vessels) and Vataanulomana (downward movement of Vata).

MATERIALS AND METHOD

Place of study

Pankajakasthuri Ayurveda Medical College and Post Graduate Centre Hospital, Killy, Kattakkada, Thiruvananthapuram, India.

Ethical clearance

The study has been cleared by IEC vide approval reference number (PKAMC/ADM/01/ 2017). The study is carried out as per International Conference of Harmonization – Good Clinical Practices Guidelines. (ICH – GCP).

Personal history

Table 1: Personal History

Appetite: Good	Bladder: Normal
Allergy: Not Detected	Diet: taking mixed diet and fish fry daily, Katu (spicy) – Amla (sour)- Lavana (salt) Ahara Priyatva
Addiction: Nil	Sleep: Sound
Bowel: Regular	Exercise: Heavy Labour

Investigations

ECG- Poor R progress V_1- V_3
T inversion in II, III, aVF, V_4-V_6
ECHO– Impression – Moderate Mitral Regurgitation
RWMA – Mild Hypokinesia of RCA TX
TMT– Impression – TMT is positive for exercise inducible ischemia
With a TMT Score = **-21**
Coronary Angiography – Two Vessel Disease of mid LAD TO and prox LCx
Proximal LCx – 90% lesion
LAD – 50% lesion in Proximal Part, total occlusion short lesion in its Mid Part and 20% lesion in ostial part

Case presentation

A 50-year-old Christian male patient, contractor by occupation, reported to Kayachikitsa OPD, Pankajakasthuri Ayurveda Medical College and PG Centre Kattakkada on 28/02/2018 with OP NoC 12512 with complaints of Dyspnoea on exertion (DOE), chest heaviness and occasional pain with general weakness of the body since 1 week, who is already diagnosed as CAD since 2 years, came with ECG, ECHO, TMT and Coronary Angiography reports which shows CAD changes.

History of Presenting Complaints

The patient was asymptomatic before 4 ½ yrs. There after he got severe emotional stress of his son's untimely death which resulted in his physical and mental health retardation. He resigned his job and shifted to native, started new job of building contract and there also he had much stress and tensions. 2 years before, at work place he developed severe chest pain with fatigue and excessive sweating with weakness of body. He was taken to GMC Trivandrum and was diagnosed as CAD-AWMI and they suggested for PTCA to LCx, LAD (KBF 2L). He was not willing for that and took only oral medication. 2 months before again he developed general fatigue with restlessness and was admitted in GMC Trivandrum, again they suggested for PTCA. He refused to do so and thus come to Pankajakasthuri Ayurveda Medical College Hospital for better management through Ayurveda.

History of Past Illness

Not a known case of diabetes, hypertension and dyslipidaemia.

Treatment history

1. T. Metolar 100 mg 1-0-1
2. T. Ecospirin 150 mg 0-1-0
3. T. Clopilet A 75 mg 1-0-0
4. T. Itor 40 mg 0-0-1
5. T. Pantop 40 mg 1-0-0
6. T. Envas 2.5 mg 0-0-1

Plan→ PCI to LAD, LCx (K-2.0 L)
Hb – 14.4 g/dl, **Total Cholesterol** – 211 mg/dl, **LDL** – 147 mg/dl, **HDL** – 60 mg/dl,
Triglycerides – 163 mg/dl, **VLDL** – 50 mg/dl, **FBS** – 92 mg/dl, **PPBS** – 114 mg/dl

Assessment criteria and grading

Assessment of subject was done by using TMT score using standard Bruce protocol at 0^{th}, 90^{th} and 120^{th} day.

TMT Scoring

The typical observed range of DTS is from -25 (highest risk) to +15 (lowest risk).

DTS = Exercise Time – (5*Max ST) – (4*Angina Index)
Ex Time –Treadmill Exercise Time, **Max ST** – Maximum net ST deviation (except aVR)
Angina Index – Treadmill Angina Index
0 – No Angina during exercise
1 – Non Limiting Angina
2 – Exercise Limited Angina
DTS Risk
>/= +5 Low Risk
+4 to -10 Moderate Risk
</= -11 High Risk

Table 2: DTS Risk Category

DTS Risk Category	1-Yr Mortality	No Stenosis >/= 75%	1 VD >/= 75%	2 VD >/= 75%	3 VD>/=75% Or LM>/=75%
MEN					
Low	0.9%	52.6%	22.4%	13.6%	11.4%
Mod	2.9%	17.8%	15.6%	27.9%	38.7%
High	8.3%	1.8%	9.1%	17.5%	71.5%
WOMEN					
Low	0.5%	80.9%	9.4%	6.2%	3.4%
Mod	1.1%	65.1%	14.2%	8.3%	12.4%
High	1.8%	10.8%	18.9%	24.3%	46%

Course of treatment

The patient was advised to take 32ml[10] kashayam (decoction) with Hingu (150mg) [11] as Prakshepa dravya (adjuvant) thrice daily before food for a period of 90 days. He was advised to report once in 15 days for uninterrupted feedback.
Follow-up assessment was done on 120th day.

RESULT

Table 3: Observations

Observations	Before treatment	After treatment	After follow- up
TMT	-21 (High Risk)	9 (Low Risk)	9 (Low Risk)
Total Cholesterol	211mg/dl	186mg/dl	188mg/dl
LDL	147mg/dl	94mg/dl	90mg/dl
HDL	60mg/dl	76mg/dl	79mg/dl
Triglycerides	163mg/dl	102mg/dl	110mg/dl
VLDL	50mg/dl	46mg/dl	44mg/dl
FBS	92mg/dl	98mg/dl	96mg/dl
PPBS	114mg/dl	118mg/dl	106mg/dl
DOE	Severe	relieved	relieved
Chest Pain/Heaviness	Present	Absent	Absent
General weakness/Fatigue	Present	Absent	Absent

Thus Lasunairandadi Kashaya was found effective in reducing the atherosclerotic plaque in the coronary arteries and thus reducing TMT Score along with the symptoms. The medicine also proved effective in reducing the elevated lipid profile.

DISCUSSION

Cardiovascular diseases are the leading cause of disease burden and deaths globally. A quarter of all mortality is attributable to CVD. Ischemic heart disease and stroke are the predominant causes and are responsible for >80% of CVD deaths[12-14]. In comparison with the people of European ancestry, CVD affects Indians at least a decade earlier and in their most productive midlife years[15,16]. CAD mainly involves underlying mechanism of atherosclerosis. The pathogenesis involves combination of atherosclerotic plaques and a dynamic component related is coronary vasoconstriction, platelet activation and transient thrombus formation[4,5]. Coronary Angioplasty does not offer a complete reduction in mortality or the incidence of Myocardial Infarction in patients with CAD since it has a risk of restenosis in arteries[7].

Coronary Artery Disease (Kapha-Vata pradhana Sannipataja Hridroga) occurs due to Praana-Rasavaha Srotodushti. The causative factors leads to Tridosha Dushti (vitiation) which in turn causes Agnimandhya (reduced digestive fire) leading to Ama (bio toxins). This Ama (bio toxins) reaches Rasavahasrotas which is having Hridaya (heart) as Moolasthana (origin) and is reflected as Dhatvagni Mandya which impairs Dhatuparinama (transformation of Dhathus) thus to Rasadhathu Dushti (vitiation) and which results in the excess formation of Rasa Kitta Bhaga (waste product of Rasa) i.e., the Kapha which causes Upalepatva (coating)– Sanga (obstruction) in the Dhamani's (vessels) and hamper Vyanavaayu. Thus impairs the normal functioning of Hridaya (heart). In Ayurveda, Samprapti Vighatanameva Chikitsa (breaking of pathogenesis is treatment). For the breaking of Samprapti (pathogenesis) of CAD (Kapha-Vata Pradhana Sannipataja Hridroga), Deepana (appetizer), Pachana (carminative), Srotosodhana (purifies the vessels), Hridya (cardiac protective) and Tridoshahara dravyas (drugs) are essential. Lasunairandadi Kashaya consists of 7 drugs among which most of them are Kaphavata Hara, Srotoshodhaka (purifies the vessels), Hridya (cardiac protective), Deepana (appetizer) and Pachana (carminative). So the probable mode of action can be the Deepana-Pachana drugs improve Agni (digestive fire) and further stops the Rasadhathu Dushti (vitiation of Rasadhathu) thereby preventing restenosis of atherosclerotic plaque, whereas the Srotoshodhaka and Hridya drugs remove the already existing atherosclerotic plaques and corrects the Vyanavaayu Rodha.

Also, no side effects were noted during the study period and follow up period. The study drug was reported to be palatable by the patients. Therefore Lasunairandadi Kashaya can be used safely as a treatment of choice for CAD

CONCLUSION

Coronary Artery Disease is becoming the most common cause for the declivitous mortality rate among human population. In the current epidemiological shift of diseases in a global perspective, where the life style diseases, degenerative diseases and mutagenic diseases are over extended, for which the current practises in medicines are proving to be inadequate and thus the need for an evidence based approach of medicine is needed. Ayurveda is having such prepatent ability for correcting that inadequacy in managing these diseases; in case of CAD (Kapha-Vata pradhana Sannipataja Hridroga) which can be easily managed and prevented with proper assessment and intervention. It is caused by excessive indulgence in oily, fatty and spicy food and sedentary life style. The treatment with Lasunairandadi Kashaya

is the best way to manage such condition along with Nidana Parivarjana (avoidance of causative factors). In the above case this treatment resulted marked reduction in TMT score, Lipid profile along with symptomatic relief. So, it can be concluded that, Ayurvedic approach provides proper management as well as equally beneficial prevention and preservation of health in a CAD patient by removing the already existing atherosclerotic plaques with Srotoshodhaka (purifies the vessels) and Hridya (cardiac protective) drugs and preventing restenosis of atherosclerotic plaque by correcting the Agni (digestive fire) causing Rasadushti (vitiation of rasadhathu); hence proving the effective role in the management and prevention of CAD through Ayurveda for leading healthy life.

Recommendations

The primary outcome of this case study was reduction of atherosclerotic plaques assessed by TMT score whereas coronary angiography or CT angiography should be taken as assessment criteria for further studies. Also in case of high risk category patients the intervention can be extended for a period of 6 months for better results.

ACKNOWLEDGEMENT

The authors sincerely acknowledge Padmasree Dr J Hareendran Nair Chief physician, Kayachikitsa, Pankajakasthuri Ayurveda Medical College Hospital Kattakkada for his valuable guidance regarding this clinical study.

REFERENCES

1. Mendis, Shanthi; Puska, Pekka; Norrving, Bo. Global atlas on cardiovascular disease prevention and control (PDF) (1st ed.). Geneva: World Health Organization in collaboration with the World Heart Federation and the World Stroke Organization; 2011. p. 3–18. ISBN 9789241564373. Archived (PDF) from the original on 17 August 2014.
2. Registrar General of India Report on Medical Certification of Cause of Death Office of the Registrar General, New Delhi, India (2015) Available at: www.censusindia.gov.in/2011-document/mcd 2013.pdf; 2013. p. 70-195
3. Registrar General of India Sample Registration System Report Office of the Registrar General, New Delhi, India Available at: www.censusindia.gov.in/2011-common/sample_registration_system.html; 2011.
4. https://www.ncbi.nlm.nih.gov/pmc/articles/PMC2428491/Postgrad Med J. 1988; 64(750): 271–277.
5. https://www.ncbi.nlm.nih.gov/pmc/articles/PMC481773/Br Heart J. 1985; 53(4): 363–373
6. Ferri FF. Coronary artery disease. In: Ferri's Clinical Advisor. Philadelphia, Pa.: Mosby Elsevier; 2016. https://www.clinicalkey.com. Accessed Oct. 12, 2015.
7. Longo DL, *et al*., eds. percutaneous coronary interventions and other interventional procedures. In: Harrison's Principles of Internal Medicine. 19th ed. New York, N.Y.: McGraw-Hill Education; 2015. http://accessmedicine.com. Accessed June 20, 2016, page 1611.
8. Albers GW, Amarenco P, Easton JD, Sacco RL, Teal P. Antithrombotic and thrombolytic therapy for ischemic stroke: the Seventh ACCP Conference on Antithrombotic and Thrombolytic Therapy. Chest. 2004; 126(3Suppl): 483S-512S. https://www.ncbi.nlm.nih.gov/pubmed/15383482
9. M. Narayanan Vaidyar, edaikkadu. Sahasrayogam. Vridhiprakaranam Malayalam 3. 1st ed. Kannur; 2001. p. 57-58.
10. Sarngadhara. Sarngadhar-Samhita. Kwatha kalpana 2/1-3.5th ed. Translated by Prof. K. R. Srikanta Murthy. Chaukhambha orientalia, Varanasi; 2003. p. 10-14.
11. The Ayurvedic Pharmacopoeia of India. Part I. Volume I, 1st ed. New Delhi; 2001. p. 49-50.
12. GBD 2016 Causes of Death Collaborators Global, Regional and national age-sex specific mortality for 264 causes of death, 1980–2016: a systematic analysis for the Global Burden of Disease Study 2016. Lancet 2017; 390: 1151-1210.
13. GBD 2016 Mortality Collaborators Global, Regional and national under-5 mortality, adult mortality, age-specific mortality, and life expectancy, 1970–2016: a systematic analysis for the Global Burden of Disease Study 2016. Lancet. 2017; 390: 1084-1150.
14. GBD 2016 Disease and Injury Incidence and Prevalence Collaborators Global, Regional and national incidence, prevalence, and years lived with disability for 328 diseases and injuries for 195 countries, 1990–2016: a systematic analysis for the Global Burden of Disease Study 2016. Lancet. 2017; 390: 1211-1259.
15. Joshi P, Islam S, Pais P, Reddy S, Dorairaj P, Kazmi K, Pandey MR, Haque S, Mendis S, Rangarajan S, Yusuf S. Risk factors for early myocardial infarction in South Asians compared with individuals in other countries. JAMA. 2007; 297: 286–294. doi: 10.1001/jama.297.3.286.https://www.ncbi.nlm.nih.gov/pubmed/17227980
16. Xavier D, Pais P, Devereaux PJ, Xie C, Prabhakaran D, Reddy KS, Gupta R, Joshi P, Kerkar P, Thanikachalam S, Haridas KK, Jaison TM, Naik S, Maity AK, Yusuf S; CREATE registry investigators. Treatment and outcomes of acute coronary syndromes in India (CREATE): a prospective analysis of registry data. Lancet 2008; 371: 1435–1442. doi: 10.1016/S0140-6736(08)60623-6.https://www.ncbi.nlm.nih.gov/pubmed/18440425

Cite this article as:

Kasthuri Nair *et al*. The effect of lasunairandadi kashaya in managing coronary artery disease as an add on therapy: A Case Study. Int. J. Res. Ayurveda Pharm. 2019; 10(2):86-89 http://dx.doi.org/10.7897/2277-4343.100242

Source of support: Nil, Conflict of interest: None Declared