



Management of Heart Failure with Low Ejection Fraction Through Siddha Medicine – A Case Report

Sugasini P^{1*}, Vishnu Priya K², Bose priyan S³, V.Mahalakshmi⁴ and N.J. Muthukumar⁵

1Ph.D Scholar, Department of Sirappu Maruthuvam, National Institute of Siddha, Chennai,

2Ph.D Scholar, Department of Varma Maruthuvam, National Institute of Siddha, Chennai,

3Siddha Physician, Kongan Siddha Clinic, Thanjavur,

4 Professor, Department of Siddhar Yoga Maruthuvam, National Institute of Siddha, Chennai,

5Director General, Central council of research in Siddha, National Institute of Siddha Chennai,

(Received: 16 November 2024

Revised: 20 December 2024

Accepted: 04 January 2025)

KEYWORDS

Herbo mineral
medicine, Siddha
Medicine, Heart
failure, Ejection
fraction

ABSTRACT:

Introduction: Congestive cardiac failure are one among the major causes of death. It is rapidly evolving and twice as many deaths from CCF now occur in developing countries. It also indulge in economical status of the society as it affects working age group most commonly

Objective: The treatment of patients with heart failure are mainly focused on the improvement of symptoms and the quality and duration of life .

Materials methods: 51-year-old male, came to Kongan Siddha clinic with the complaints dyspnea shortness of breath, cough without expectoration hiccup, dryness of mouth, oedema in the lower limbs, with no prior history of heart disease he had was adopted, was a smoking and alcoholic . His heart rate was 54 per minute, he had bilateral pitting oedema, his blood pressure was 150/90 mm Hg, there were no signs of jugular venous hypertension,. He was under investigation due to significant weight loss caused by progressive dysphagia. his echocardiogram showed severe global hypokinesia left ventricular dysfunction with left ventricular (LV) ejection fraction (EF) 13%, The patient, .

Result and Discussion : In this case study, the patient presented with a severely reduced ejection fraction (EF) of 13%, indicating advanced heart failure and compromised cardiac function. After undergoing three weeks of continuous Siddha medication, remarkable improvements were observed. The ejection fraction improved significantly, rising to 63%, suggesting a dramatic enhancement in the heart's ability to pump blood effectively.

Conclusion: The case underscores the potential of traditional Siddha medicine as a complementary approach in managing heart failure, particularly in patients with severely reduced ejection fractions

Introduction

Congestive Cardiac Failure (CCF) is a complex pathophysiological condition in which the heart's inability to pump blood efficiently leads to inadequate circulation to meet the metabolic demands of the body. This failure occurs under normal cardiac pressures and is characterized by a range of clinical symptoms associated with both forward and backward flow abnormalities.¹

²Dyspnea (shortness of breath) arises from pulmonary congestion due to fluid accumulation in the lungs. Giddiness, syncope (fainting), and weakness result from reduced forward blood flow, impairing perfusion to vital organs. Anorexia and ascites (fluid buildup in the abdomen) occur due to hepatic and portal venous congestion caused by elevated back pressure. Fatigue, reduced exercise tolerance, and fluid retention manifesting as swelling in the lungs, abdomen, and lower



extremities are also hallmark features. Classification of Heart Failure (HF) is Heart Failure with Reduced Ejection Fraction (HFrEF): LVEF < 40% Heart Failure with Mildly Reduced Ejection Fraction: LVEF typically 41–49% Heart Failure with Preserved Ejection Fraction (HFpEF): LVEF \geq 50%^{3,4}. Heart failure (HF) affects approximately 2% of adults globally and represents a complex clinical syndrome that remains a leading cause of early morbidity and mortality.⁵ Despite significant advancements in medical and interventional therapies, the mortality rate for patients with chronic heart failure has declined, yet the first-year mortality rate among hospitalized patients with acute degenerative heart failure remains alarmingly high, reaching 25%. Recent findings from the International Congestive Heart Failure Prospective Cohort Study revealed notable global disparities in heart failure-related mortality. The highest one-year mortality rates were observed in regions with the youngest patient populations, particularly in African countries and India.⁶

Siddha literature, Cardiac ailments described by many terminologies such as Thamaragavayu, Maarbunoi, Iruthayanoi, Rudhrarogam, Rudravayu, Iruthurogam. It is classified into five types: Valithamaraganoi, Azhalthamaraganoi, Iyyathamaraganoi, Mukuttra thamaraganoi and Puzhuthamaraganoi.⁷

Congestive cardiac failure can correlated with Iya stage. The symptoms are sudden development of chest pain with drilling like sensation in the central chest bone,

dyspnoea. Pain from the chest radiates to left upper limb till the tip of fingers with numbness sometimes or may become cold. As the disease progresses, there will be loss of body strength with diminished blood circulation and they may develop sudden unbearable pain in chest with sweating. Later there develops cyanosis and death may occur.⁸

Case report

51-year-old male, came to kongan Siddha clinic with the complaints of dyspnea shortness of breath, cough without expectoration hiccup, dryness of mouth, oedema in the lower limbs, with no prior history of heart disease he had was adopted, was a smoking and alcoholic. His heart rate was 54 per minute, he had bilateral pitting oedema, his blood pressure was 150/90 mm Hg, there were no signs of jugular venous hypertension. He was under investigation due to significant weight loss caused by progressive dysphagia. His echocardiogram showed severe global hypokinesia left ventricular dysfunction with left ventricular (LV) ejection fraction (EF) 13%

Physical examination revealed that, patient had coated tongue and edema in the feet. Central nervous system (CNS) state was drowsy, (CVS) heart sound was S1 S2 Loud murmur, PA abdomen was soft, not tender. With sinus rhythm,

Past history of Hypertension since 12 years under allopathic medication

Siddha intervention

Medicine	Dosage	Adjuvant	Time of Administration	No. of days taken the medicine
Raja peathiennai	1ml	Ginger juice	Early morning empty stomach	1day
Kalamirutham chenduram	65mg	Ginger juice+honey	After food twice a day	14days (14days gap) dosage were given
Sirungiparpam	130mg	Ghee	After food twice a day	24days(14days gap) 3 dosage
Sarpaganthavati mathirai	1	Hot water	After foot once a day	-
Vasambumathirai	2 tab	Hot water	After food twice a day	3 months

The medication dosage and duration were optimized based on the patient's improvement.



Results

Before Treatment

BHARATHI HEART SCAN
36, Kopalayam Road, Manmargudi.

Name: Mr. Moorthy
Age: 51 yrs. Sex: M
Date: 04.01.2023

ECHOCARDIOGRAM REPORT

2D IMAGING:
Normal mitral, aortic, tricuspid and Pulmonary valves. **Global Hypokinesia of LV**. **LV Systolic dysfunction (Severe)**. LV and LA are dilated. IAS and IVS intact. No pericardial effusion. No intracardiac mass or vegetation. No evidence for ASD, VSD, PDA or Co-arcuation of aorta.

M-Mode measurements:
AO: 34.1mm LA: 45.0mm AVO: 19.4mm RV: 35.3mm
EPSS: 34.1mm EF slope: 96m/sec DE amplitude: 15.6mm
IVSd: 8.0mm LVDd: 74.5mm LVPWd: 10.1mmHg
IVSs: 8.4mm LVDs: 69.9mm LVPWs: 10.9mmHg
EF: 13% FS: 6%

DOPPLER measurements:
MITRAL VALVE: E: 0.64m/sec A: 1.06m/sec.
TRICUSPID VALVE: E: 0.30m/sec A: 0.53msec.
AORTIC VALVE: Vmax: 1.02m/sec P max: 4.2mmHg
PULMONARY VALVE: Vmax: 0.64m/sec Pmax: 1.6mmHg

COLOR FLOW:
NORMAL COLOUR FLOW PATTERN SEEN.

IMPRESSION:
1. DILATED CARDIOMYOPATHY, GLOBAL HYPOKINESIA OF LV.
2. LV SYSTOLIC DYSFUNCTION (SEVERE).
3. NORMAL MITRAL, AORTIC TRICUSPID AND PULMONARY VALVES.
4. NORMAL PULMONARY ARTERIAL PRESSURE.
5. NO PERICARDIAL EFFUSION.
6. NO LV CLOT OR VEGETATION.
7. NO EVIDENCE FOR ASD, VSD, PDA OR CO-ARCTATION OF AORTA.

DR. R. BHARATHI SELVAN M.D., D.M.
CONSULTANT CARDIOLOGIST

APEX HEART HOSPITAL PVT LTD
9A, Selvam Nagar, M.C. Road, Thanjavur-613 007
Phone: 04362273322-7873758413
Web: www.apexhearthospital.com Email: apexheart100@gmail.com

Name: MR. MOORTHY Id: APEX-14811
Age/Gender: 51 years / M Ordered On: 20/01/2023
Referred By: DR. S. RAUVISHANKAR M.D., D.M. Reported On: 20/01/2023

ECHOCARDIOGRAM - ECHO

MEASUREMENTS:			
L.V.S. (D)	3.3CM	L.V.S. (S)	3.3CM
L.V.P.W. (D)	3.3CM	L.V.P.W. (S)	3.3CM
L.V.I.D. (D)	7.5CM	L.V.I.D. (S)	7.1CM
E.D.V.	827ML	E.S.V.	357ML
E.F.	16.4%	FS	5.83%

DOPPLER:

AORTIC FLOW VELOCITY	82.7CM/SEC
PULMONARY FLOW VELOCITY	54.5CM/SEC

FINDINGS:
CONCENTRIC LVH
GLOBAL HYPOKINESIA OF LV
SEVERE LV SYSTOLIC DYSFUNCTION (EF-16.4%)
LV HUGELY DILATED
LA DILATED
MILD TO MODERATE MR
MILD TR
NO PULMONARY HYPERTENSION
NO PERICARDIAL EFFUSION
NO CLOT
IMPRESSION:
HYPERTENSIVE HEART DISEASE
CORONARY ARTERY DISEASE
SEVERE LV SYSTOLIC DYSFUNCTION (EF-16.4%)
LV HUGELY DILATED
LA DILATED
MILD TO MODERATE MR
MILD TR

DR. S. RAUVISHANKAR M.D., D.M. (Cardio)
INTERVENTIONAL CARDIOLOGIST
Reg no : 65713

— End of the Report —

After treatment

Name	MR.MOORTHY V	Patient ID	AS_TNJ_ECHO_10554
Accession No	10554_242311_23	Age/Gender	052Y / Male
Referred By	BOSE PRIYAN S. MD(S)	Date	26-May-2024

ECHOCARDIOGRAPHY REPORT

2D MEASUREMENT:
Para sternal long axis view:
Aorta : 36 mm.
Left atrium : 45 mm.

M-MODE MEASUREMENT :
IVS thickness (S/D) : 24mm / 17 mm.
LVPW thickness (S/D) : 31 mm / 20 mm.
LVID (d) : 60 mm.
LVID (s) : 38mm.
Ejection Fraction (EF%) : 65 %
Fractional shortening : 36 %.

DOPPLER :
Aortic Flow : 151.63cm/s / 9.20 mmHg
Pulm. Artery flow : 123cm/s / 6.14 mmHg
Tricuspid flow : 306.96 cm/s / 37.69 mmHg
Mitral valve
"e" velocity : 49.55cm/s.
"a" velocity : 64.83 cm/s.

COLOUR FLOW :
Normal colour flow pattern.
No shunt lesion.

IMPRESSION

- v. NO RWMA OF LEFT VENTRICLE AT REST.
- v. NORMAL LEFT VENTRICULAR SYSTOLIC FUNCTION.

Name	MR.MOORTHY V	Patient ID	AS_TNJ_ECHO_10554
Accession No	10554_242311_23	Age/Gender	052Y / Male
Referred By	BOSE PRIYAN S. MD(S)	Date	26-May-2024

- v. DIASTOLIC DYSFUNCTION GRADE I.
- v. NORMAL VALVES TRIVIAL MR.
- v. MILD LVH.
- v. IAS AND IVS ARE INTACT.
- v. NO PDA.
- v. MILD PAH/TR
- v. NO PERICARDIAL EFFUSION.
- v. NO INTRACARDIAC MASS / VEGETATION OR CLOT.
- v. SINUS RHYTHM DURING STUDY.

DR. Vijay Ananth R MDDM,
Consultant Cardiologist



S.no	ECHO Cardiogram	Before treatment (20.01.2023)	After treatment (26.5.2024)
1	IVS thickness (S/D) LVPW thickness (S/D) LVID (d) LVID (s) Ejection Fraction (EF%) Fractional shortening	1.3cm 1.3cm 7.5cm 7.1cm 16.4% 5.83%	24mm / 17 mm. 31 mm / 20 mm. 60 mm. 38mm. 65 %. 36 %.
2	Impression	Concentric LVH Severe Dystolic dysfunction Severe LV Systolic Dysfunction LV hugely dilated LA dilated Mild TR	Mild LVH Diastolic dysfunction grade I Normal valves trivial MR. IAS AND IVS ARE INTACT. NO PDA. Mild PAH /TR

Siddha concept

Heart failure, its pathogenesis of Increased intake of food such as tubers ,Increased sexual activities, Misconduct behaviours ,it may lead to Derangement of Uyir Thathukal Iyyakuttram increased its leads to Derangement of Dhasavayukkal ,Deranged Dhasavayu Reflections in Udalthathukkal PrananKozhuppu-Perumoocheridhal(Dyspnoea) Udhanan Saaram-MaarbuPadapadapu(Palpitation)Viyanan -Cenner -Maarbu Vali (Angina Pectoris)Nagan - Moolai-Kan IruttiKollal (Dimness of vision)Devadaththan -Kozhuppu -Mayakkam (Giddiness) -ThamaragaNoi⁹ Vatha and kapha are associated with Thamaragavayu; The Thamaraganoi which comes in association with chest will develop predominantly due to Vatham, which affects the chest which has been strong and healthy previously. The Pitha dosha which has been functioning effectively also stops its functions. Hence, patients who are affected with this disease may suddenly die while they are talking casually. The association of Vatha and Kapha prevents the function of Pitha. The azhalnaadi (pitha pulse) becomes abnormal in volume and its pulsation diminishes.¹⁰

Discussion

Giving Raja peathiennai on empty stomach will balance Thiridhosam and remove the excessive fat in our body.

KalamiruthamChenduram is an Siddha mineral-based formulation (Rasayana) renowned for its effectiveness in treating various ailments especially in cardiac disease. It is formulated from various herbs and minerals, embodying the principles of Siddha by balancing Thridhossm and promoting overall health.¹¹

"Sirungiparpam" is a formulation referenced in Siddha. It is often described in classic Siddha texts and is typically used for various ailments, including those related to the heart and cardiovascular system.¹²

Acorus calamus has been used as a traditional remedy since ancient days but its cardio protective effect. Many cases revealed that *A. Calamus* reduces the incidence of CCF by decreasing serum cholesterol, low density lipoprotein and increasing high density lipoprotein, and improve the ECG profile¹³ Calcium channel blockers (CCBs) are widely used for the treatment of hypertension. Amlodipine is a long-acting L-type CCB that has been found effective in lowering of blood pressure, amelioration of cardiac remodeling, and reduction in mortality and morbidity^{14,15} *Acorus calamus* has calcium inhibitory effect and diuretic activity which may potentiate Na \uparrow excretion in HTN¹⁵

Sarpaganthavati mathirai were shown antihypertensive activity ,High blood pressure or high blood stress is not



unusual and can cause or complicate many coronary heart issues. Hypertension (HTN) is frequently referred to as the “silent killer” as it generally has no serious signs and symptoms at the beginning but gradually becomes dangerous at the end.^{16,17}

Thus, the purpose of this case study is to provide insight into the successful outcome of an HF along with good improvement of EF, patient who was advised to have a heart transplant operation with the aid of less costly Siddha medication. In summary, a variety of therapies, including herbomineral drugs a balanced diet, and lifestyle changes, have been used as therapeutic methods

According to Siddha medicine, the polyherbal and herbomineral treatments discussed can restore heart function, specifically improving low ejection fraction. Patients with heart failure may benefit from the additional cardiac support provided by these herbomineral formulations. In the present case, all the medicines used demonstrated improvements in both systolic and diastolic dysfunction.

During this period, the patient's symptoms, such as fatigue, shortness of breath, and reduced exercise tolerance, showed noticeable improvement, albeit gradually. Although the recovery of physical symptoms was modest, the substantial increase in ejection fraction highlights the efficacy of the Siddha treatment in enhancing cardiac function. This improvement suggests that the polyherbal and herbomineral formulations played a vital role in supporting myocardial health, addressing underlying imbalances in *Dhathu*, and promoting both systolic and diastolic function.

The case underscores the potential of traditional Siddha medicine as a complementary approach in managing heart failure, particularly in patients with severely reduced ejection fractions.

Conclusion

The necessity for widespread development of Siddha cardiology management is shown by this case study. In these situations, the only treatment available in modern medicine is surgery. However Siddha offers a wide range of medication to treat various cardiac disease,

which are beneficial in preventing, curing and reducing the symptoms

INFORMED CONSENT:

The authors certify that they have obtained all appropriate written informed consent from the patients. The patients given consent for reports and other clinical information to be reported in the journal.

SOURCE(s) OF FUNDING:

None

CONFLICT OF INTEREST:

No

Reference

1. Mann, D. L. in Braunwald's Heart Disease: A Textbook of Cardiovascular Medicine (eds Bonow, R. O., Mann, D. L., Zipes, D. P. & Libby, P.) 487–504 (Elsevier Saunders, 2012).
2. Yancy, C. W. et al. 2013 ACCF/AHA guideline for the management of heart failure: a report of the American College of Cardiology Foundation/American Heart Association Task Force on Practice Guidelines. *J. Am. Coll. Cardiol.* 62, e147–e239 (2013).
3. Lam CSP, Yancy C. Universal definition and classification of heart failure: is it universal? Does it define heart failure? *J Card Fail.* 2021; 27: 509–511.
4. Xanthopoulos A, Giamouzis G, Skoularigis J, Triposkiadis F. Heart failure with reduced, mildly reduced, or preserved left ventricular ejection fraction: has reasoning been lost? *World J Cardiol.* 2022; 14: 438–445
5. Metra M, Teerlink JR. Heart failure. *Lancet.* 2017;390:1981–95.
6. Vahdatpour C, Collins D, Goldberg S. Cardiogenic Shock. *J Am Heart Assoc.* 2020;8(8):e011991. doi:10.1161/JAHA.119.011991.
7. T.V. Sambasivampillai, Tamil-English dictionary of Medicine, Chemistry, Botany & Allied Science. Volume 1, Indian medicine and Homeopathy Department; Chennai, Pg no-1216



8. Kumar Vinay, Abbas Abul K, Aster Jon C. Robbins And Cotran Pathologic Basis Of Disease. South Asian Edition. Volume II. Published By Reed Elsevier India Private Limited, 9th Edition, Chap 12, Page No. 523
9. Dr. N. Kuppusaami Mudhaliyar H.P.I.M. Pothu Maruthuvam, First edition: Indian medicine and Homeopathy Department, Chennai, 1936; pg no -262
10. Dr. M. Shanumugavelu H.P.I.M. Noi Naadal Noi Mudhal Naadal Thirattu, part 1. First edition: Indian medicine and Homeopathy Department, Chennai, 1967; Pg no -2, 173, 322
11. S.P. Ramachandran. Agasthiyar Vaithiya Kaaviyam -1500, Second edition, Thamarai Noolagam, Chennai, 2001; Pg no-7, 11
12. K.S. Murugesamudhaliyar, Siddha materiamedica, Thathu jeevam (Directorate ISM&H publications), 2006
13. Mangain, P., & Singh, R. H. (1994). Controlled clinical trial of the Ilex lekhiana drug vacha (Acorus calamus) in case of ischaemic heart disease. Journal of Research in Ayurveda & Siddha, 15, 35–51.
14. Yamazaki, T., Komuro, I., Zou, Y., Kudoh, S., Shiojima, I., Mizuno, T., et al. (1998). Efficient inhibition of the development of cardiac remodeling by a long acting calcium antagonist amlodipine. Hypertension, 31, 32–38
15. Et.al, Pinal Patel, Antihypertensive effect of rhizome part of Acorus calamus on renal artery occlusion induced hypertension in rats, Asian Pacific Journal of Tropical Disease, Volume 2, Supplement 1, 2012, Pages S6-S10,
16. Siyad AR. Hypertension- pharmaceutical review. Hygeia Journal for Drug and Medicines. 2011;3(2):1-16
17. Et.al, Dipak P. Mali Standardization and Evaluation of Herbal Antihypertensive Sarpagandha (Reserpine) Tablet Formulations IJPQA, Volume 14 Issue 1, January - March 2023