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Case Report

Treatment of heart failure with low ejection fraction with polyherbs and panchakarma: A case report

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ABSTRACT

Background: Considering heart as a unique organ that regulates blood flow, Ayurveda places a specific emphasis on protecting the heart from numerous conditions that might lead to the development of various heart illnesses. It emphasizes the need of avoiding stress and promoting a diet that helps in boosting heart health.

The role of Ayurveda in heart failure with low ejection fraction is discussed in this paper. Low ejection fraction, often known as low EF, occurs when your ejection fraction goes below 55%. It indicates that your heart isn't working as efficiently as it should. Heart failure is one of the major causes of early mortality associated with cardiac dysfunction. According to Ayurveda, all causes of Heart Dysfunction arise from the dysfunction of the rasadhatvagni, one of the causes of poor quality rasadhatu that aggravates heart disease when it is absorbed into the heart.

Case Presentation: In this case report, the 26-year-old female patient default rasadhatu caused heart failure with a low ejection fraction, which was treated using polyherbs and panchkarma in Ayurveda to improve heart function (low ejection fraction). Polyherbs are utilized to regulate systolic and diastolic dysfunction of heart.

Results: In the present case, default rasadhatu was reported cause of heart failure with low ejection fraction. In Ayurveda above discussed polyherbs and panchkarma treatment can correct heart function i.e. low ejection fraction.

Conclusion: The Ayurvedic system of medicine thus proves itself to be an established one with significant scientific foundations and therapies that can be practiced alone or alongside conventional medicine.

1. Introduction

Heart failure (HF) affects approximately 2% of adults worldwide, a complex clinical syndrome that is a principal cause of early morbidity and mortality,[1] Although, advances in medical and instrumental therapy have reduced the mortality rate of patients with chronic heart failure, the first-year mortality rate among hospitalized patients with acute degenerative heart failure is as high as 25%.[2]

However, the mortality rate of patients developing cardiogenic shock in the setting of acute myocardial infarction has remained unchanged for two decades, even with advances in reperfusion therapy and mechanical circulatory support (MCS).[3]

Heart failure is classified as a *tridoshaja vyadhi* in Ayurvedic medicine. Traditional heart failure treatment has improved over the years, yet patient survival and quality of life remain inadequate. Ayurveda treatment as adjuvant therapy in the management of heart failure has been the subject of some published clinical trials. Antioxidant,

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anti-inflammatory, antiplatelet, and hypolipidemic characteristics are found in many herbal medications. There is a need to assess herbal medicine's potential usefulness in the treatment of heart failure.[4,5] In the present case report, HF was treated for 90 days with conventional medicine and Ayurvedic treatment. Then, only Ayurveda treatment was offered, along with lifestyle adjustment, after examining the cause and risk factors for heart disease.

This case report thereby describes the beneficial role of Ayurveda in heart failure with poor ejection fraction in a 26-year-old female with comorbidities who has been treated in our institute for a year.

2. Case Report

A 26-year-old female patient reported to Shri vishwakrupa ayurvedalaya and panchkarma Kendra, *Warud dist. Amravati* with chief complaints of breathlessness, reduced appetite, vertigo, body ache and bilateral feet edema for. month duration. When she presented to our panchkarma center, she had 45.95 kg weight, 98.4 ºf temp. 22RR. her blood pressure was140/90 mm of Hg and pulse was 64 bpm.

Physical examination revealed that, patient had coated tongue and edema in the feet. However, pallor, clubbing and cyanosis were completely absent. Central nervous system (CNS) state was drowsy, (CVS) heart sound was S1 S2 Loud murmur - +, RS – BAEN, PA abdomen was soft, not tender. With sinus rhythm, ECG revealed a left bundle branch block. However, the patient had no previous history of heart failure.

Echocardiography showed systolic and diastolic dysfunction, LVEF of 15 - 20% and a sign of left ventricular hypertrophy (interventricular septal diameter 14 mm, LV posterior wall diameter 12 mm. The enrolled patients was taking Valsartan, Amlodepin, Frusemid, and Digogzin medicines.

2.1. Blood investigations

Blood investigations showed normal CBC, PS and KFT. However, more serious condition of heart failure observed, NT-proBNP2 range was 3562.0 pg/ml, (4/1/21) which was higher than normal.

Table below reported, NT-pro BNP level before and after treatment.

Table 1: NT-pro BNP level before and after treatment.

Date of NT-pro BNP	NT-pro BNP
4 Jan 2021	3562.0 pg/mL
4 Jan 2022	220 pg/mL

2.2. An echocardiogram test

ECHO test revealed Cardio Myopathy. Below table showed the state of Cardio Myopathy, before and after the treatment.

Table 2: Showing the state of cardio myopathy

Date : 04/01/2021	
1.	Cardio Myopathy
2.	Severe Global Hypokinesia
3.	EF of LV= 15 - 20%
4.	Diastolic dysfunction (Grade III)
5.	Mild MR, Mild PH, Trivial TR
6.	Thin Pericardial effusion
7.	IVC Congested

Looking at the above reports, patient was advice for cardiac transplant but due to low economic status so she decided to take Ayurveda treatment.

2.3. Differential diagnosis

The closest differential diagnosis in this case could be heart failure due to left ventricular hypertrophy. In this case, the heart failure may also be due to left ventricular hypertrophy, which tightens the wall of the main pumping chamber of the heart. However, the patient also suffers from anemia and diastolic dysfunction. All of these signs indicate that the patient has dilated cardiomyopathy with a low ejection fraction. No further tests were performed after the diagnosis and the patient started receiving Ayurvedic treatment.

2.4. Treatment

During this therapy and next 30 days, patient was put on daily routine followed the study dinarcharya and was prescribed healthy diet, ayurvedic medicine, exercise / yoga and panchakarma.

The diet was divided into two meals. The first meal was taken between 9 and 11 in the morning and the last meal was taken in the evening. 6 to 8 p.m. and dietary salt was prohibited. The patient was advised to eat a diet rich in potassium and plenty of fruits. Junk / fast / fermented / heavy oily foods and potatoes, which are high in sodium and fat, were avoided. Patient was advised to do following yoga and light exercises regularly.

1.	light stretching,
2.	breathing exercises and cardio breathing
3.	Yogasanas like Bhujangasana, Pavanmuktasana, and Mandukasan (which is suggested to increase the blood flow of the heart.)
5.	Walking on a simple surface for 6 minute walk test (MWT).
6.	5 ml/day of cow urine extract for 21 days.

Patient followed the dinacharya and was also prescribed some polyherbs for the management. Following table (Table 3) enumerate the medications and their specific actions as a treatment modality.

Table 3: Polyherbs and their mechanism of action

Polyherbs	Mechanism of Action
Arjuna-cardiotonic [5]	Increase heart muscle tone and stroke volume, Vasodilator, improve diastolic dysfunction of heart
Amalki [6]	Rejuvenation
Brahmi [7]	Reduction of stress
Vidari Kand / Vidari Kharik	Anabolic action
Guduchi [8], Haridra [9], Punarnav [10] and Hridayarnav juice [11], Gokshur [12]	Additional herbs
Vasant Kusumakar rasa [11]	Antioxidants, rasadhatu protection
Suvarn sutashekhar rasa	Increase appetite and maintain blood pH.
Shitopaladi churn [13]	Reduces chest congestion, rejuvenation and also reduce effusion.

2.5. Outcome and follow-upTable 5

3. Discussion

Heart failure (HF) remains a major cause of mortality, morbidity, and poor quality of life. It is an area of active research. Heart Failure refers to the heart unable to pump enough oxygenated blood, which is necessary for normal metabolic activity of the body. In addition, high BP, uncontrolled diabetes, valvular heart diseases and ischemic heart disease can also results in myocardial dysfunction resulting in HF.

Since patients suffer from dilated cardiomyopathy, HF is also considered a disabling disease. Dilated cardiomyopathy is significant characteristic that makes HF a disabling disease. "Cardiomyopathy" refers to any abnormal heart muscle condition. Basically, it causes the heart to become enlarged and unable to pump blood efficiently. A dilated cardiomyopathy causes systolic (contractile) dysfunction with normal left ventricular wall thickness and leads to heart failure. Point to ponder in this study is that dilated cardiomyopathy is associated higher risk of mortality. Acharya Charak reported that vitiated agni causes a person to suffer from disease since it disrupts the complete metabolic activity of the body. The Ayurvedic term for cardiac problems is 'Hrudrog'. All causes of heart disease in Ayurveda are dysfunctional rasa dhatvagni, which results

Table 4: Steps of panchakarma included in treatment

Sr. no	Panchakarma therapy	
1	Snehana/external oleation or massage (30–35 minutes)	This is an external massage technique that uses an oil-based decoction.
2	Swedana/passive heat therapy (10-20 min)	This therapy was administered to HF patients laying supine in a sudation box with the head outside. After that, a steady stream of Dashmoola (a ten-herb group) was passed for 10-15 minutes. Patient was asked to rest for at least one hour after their therapy was over.
3	Basti/medicated enema (~15 min)	Enema drug was administered using rectal solution in the patient. This enema was taken to stay in the body for 15 minutes for maximum absorption. The total administration period was one and a half hours.
4	Hrudaydhara/variation of shirodhara technique (~15 min)	An HF patient's mediastinum was drip-fed with lukewarm Dashmoola decoction from a certain height. It was marked with the help of hrudayapatra.

HF was treated after a light meal or breakfast. The total administration duration was 70-75 minutes.

Table 5: Outcomes of ECHO

First ECHO(04/01/2021)	2nd ECHO(30/01/2021)	3rd ECHO (03/01/2022)
Showed cardiomyopathy and Severe global hypokinesia	Mild global hypokinesia as well as mild concentric hypertrophy of the LV	Normal sized chambers and no regional wall movement deformity.
EFLV was of 15 - 20%	EFLV was 35%	EFLV improved by 60%
Diastolic dysfunction (grade III)	Diastolic dysfunction improved to grade(Grade I)	Systolic and diastolic LV
MR and PH were mild and trivial TR was present.	IVC was normal	Normal IVC, Intact atrial and interventricular septum found.

in penurious rasa dhaatu reaching the heart, causing various heart conditions. This dhatvagni or bioenergy can be denoted by metabolic rate. MAC can therefore be correlated with rasa dhatvagni. Bioenergy, or rasa dhatvagni, can be expressed through metabolic rate, and MAC can thus be associate with this. The reduction of MAC may result in rasa dhatvagni maandya (reduction in the function of rasa dhatvagni) which resulting in Hrudrog. This is a first follow-up study to report that 7 day HF improves dilated cardiomyopathy with low ejection fraction. Patients with left ventricle low ejection fraction (<30/15 - 20%) and is maintained for 90 days after the therapy. There is a plenty of literature associated to different methods of dilated cardiomyopathy with low ejection fraction estimations. In terms of affordability and convenience, 6 MWT is the most popular test. [14]

In this complete treatment, we focused on prognosis of vyan vayu (one of the five energy subdivisions of prana) and avalambak cuph, (provide environment for free expansion and relaxation of chest organ), which ultimately improved sadhak pitta. Sadhak pitta is subdosha of Pitta, which resides in the heart. It is responsible for maintained circulation of rhythmic contraction and relaxation of heart. Thereby, miraculously improved values of NT-pro BNP were obtained in the present case after panchkarma as shown in table-1 which suggests the great role that correction of sadhak pita can play patients with heart failure. [15]

Over the year, Ayurveda is considered the "Mother of All Healing" as it is among the oldest forms of health care. In spite of the fact that considerable scientific research has been done in this area over the last 50 years, the results of these studies have not been adequately propagate.

Therefore, present case report is written with a view to shed light upon the successful outcome of HF patient who was suggested to go for heart transplant procedure with the help of less expensive and less painful ayurveda treatment. To summarize, the treatment tools that were used included different interventions such as exercise, healthy diet, lifestyle modification and polyherbs with panchakarma.

4. Conclusion

Heart disorders can be caused by rasadhatvagni that lead to the production of poor quality rasadhatu. In the present case, default rasadhatu was reported cause of heart failure with low ejection fraction. In Ayurveda above discussed polyherbs and panchkarma treatment can correct heart function i.e. low ejection fraction.

Patients with HF will benefit from additional cardiac conditioning provided by the herbs used in this case. In the present case, all poly herbs use have shown to improve systolic and diastolic dysfunction. Furthermore, in this case, panchakarma therapies combined with treatment which

nourished the body. This case report focuses on the role of ayurvedic treatments in HF patients, and we hope it will be useful to all Ayurvedic and conventional medicine practitioners, students, researchers and the general public. This proves that Ayurveda is a well-established system of medicine which has a significant medical base, and has therapies that can be used alone or in conjunction with conventional health care.

5. Source of Funding

None.

6. Conflict of Interest

None.

References

1. Metra M, Teerlink JR. Heart failure. *Lancet*. 2017;390:1981–95.
2. Vahdatpour C, Collins D, Goldberg S. Cardiogenic Shock. *J Am Heart Assoc*. 2090;8(8):e011991. doi:10.1161/JAHA.119.011991.
3. Rohit S, Rahul M. Efficacy of heart failure reversal treatment in patients with low ejection fraction. *J Ayurveda Integr Med*. 2018;9(4):285–9.
4. Sane R, Aklujkar A, Patil A, Mandole R. Effect of heart failure reversal treatment as add-on therapy in patients with chronic heart failure: A randomized, open-label study. *Indian Heart J*. 2017;69(3):299–304.
5. Gauthaman K, Saleem M, Ravi TS, Patel V, Niranjali S, Devaraj S. Alcoholic extract of terminalia arjuna protects rabbit heart against ischemic-reperfusion injury: Role of antioxidant enzymes and heat shock protein. *World Acad Sci Eng Technol*. 2008;18:488–98.
6. Ghosal S, Tripathi VK, Chauhan S. Active constituents of Emblica officinalis, Part I, the chemistry and antioxidant effects of two new hydrolysable tannins, emblicanin A and B. *Indian J Chem*. 1996;35:941–9.
7. Tripathi YB, Chaurasia S, Tripathi E, Upadhyay A, Dubey GP. Bacopa monniera Linn. as an antioxidant: mechanism of action. *Indian J Exp Biol*. 1996;34:523–6.
8. Ibidem, Bhavaprakasha G, Varga.
9. Pandey V, Kumar D. Biofertilizers for Sustainable Agriculture. *AgricToday*. 2002;5:44–47.
10. Sumanth M, Mustafa SS. Antistress, adoptogenic and immunopotentiating activity roots of Boerhaavia diffusa in mice. *Int J Pharmacol*. 2007;3(5):416–36.
11. Kanchan DM, Somani GS, Peshattiwar VV, Kaikini AA. Sathaye Renoprotective effect of diosgenin in streptozotocin induced diabetic rats. *Pharmacol Rep*. 2016;68(2):370–7.
12. Bhuvad S, Nishteswar K. Assessment of free radical scavenging activity of ten madhuraskandha drugs through UV spectroscopic and chromatographic technique. *J Pharm Pharm Sci*. 2016;8(3):92–6.
13. Makhija IK, Ram A, Shreedhara HN, Kumar CS, Vijay S, Raviraj D. In vitro antioxidant studies of Sitopaladi Churna, a polyherbal Ayurvedic formulation. Free Rad. *Antiox*. 2011;1(2):37–41.
14. Ross RM, Murthy JN, Wollak ID, Jackson AS. The six minute walk test accurately estimates mean peak oxygen uptake. *BMC Pulm Med*. 2010;10(1):1–1.
15. Deb A, Barua S, Das B. Pharmacological activities of Baheda (Terminalia bellerica): A review. *J Pharmacog Phytochem*. 2016;5(1):194–7.

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