



Management Of Severe Left Ventricular Systolic Dysfunction By Ayurveda- A Case Study.

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ABSTRACT-

Heart failure has an ever-increasing prevalence. Left Ventricular Ejection Fraction is a reliable indicator of the severity of the heart failure especially the systolic dysfunction. A 65-year-old male presented with severe systolic dysfunction with 25-30% of left ventricular ejection fraction, seeking for ayurvedic treatment. He was given tab *gokshuradi gugulu*, *dadimavaleha* and tab *bhringaraja ghana* for two months. Along with symptomatic improvement, his left ventricular ejection fraction improved to 43%. This case shows possibility of further research work for testifying herbal drugs for systolic dysfunctions.

KEY WORDS-

Severe heart failure- gokshuradi gugulu-bhringaraja-dadimavaleha- ayurveda- LVEF

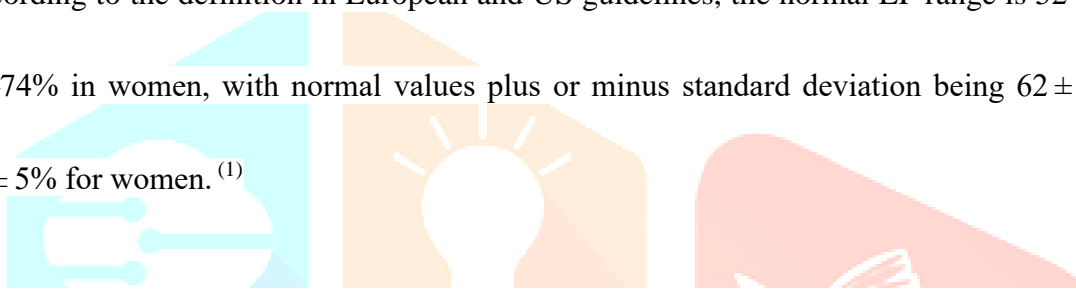
INTRODUCTION

Heart failure is a global pandemic with an increasing prevalence. The major contributors to the heart failure are ischaemic coronary artery disease, cardiomyopathies, uncontrolled hypertension, aortic

stenosis, etc. increased prevalence is due to increased longevity, better survival rate of myocardial infarction and heart failure patients.

Left ventricular ejection fraction (EF), generally measured by echocardiography, remains the cornerstone of HF diagnosis, characterization, prognosis, patient triage and treatment selection. Left ventricular ejection fraction (EF) is the central measure of left ventricular systolic function. EF is the fraction of chamber volume ejected in systole (stroke volume) in relation to the volume of the blood in the ventricle at the end of diastole (end-diastolic volume).

According to the definition in European and US guidelines, the normal EF range is 52–72% in men and 54–74% in women, with normal values plus or minus standard deviation being $62 \pm 5\%$ for men and $64 \pm 5\%$ for women.⁽¹⁾



The simplest classification as per the American College of Cardiology (ACC) that is used clinically as follows:



- Hyperdynamic = LVEF greater than 70%
- Normal = LVEF 50% to 70% (midpoint 60%)
- Mild dysfunction = LVEF 40% to 49% (midpoint 45%)
- Moderate dysfunction = LVEF 30% to 39% (midpoint 35%)
- Severe dysfunction = LVEF less than 30%

CASE HISTORY-

Name	XYZ
Age	65 years
Sex	Male
Occupation	Shipping business. Frozen meats
Weight	89 kgs. Heavy built,
Address	Vasco . (<i>desha aanupa.</i>)
Birth place	Born and brought up at UP.(<i>Saadharana desha</i>)

Chief complaints

Breathlessness on exertion, gravitational pitting oedema around both ankles and fatigue since many weeks.

Present history-

A male patient aged 65 years, non-diabetic, hypertensive approached the O.P.D. with complains of Breathlessness on exertion, gravitational pitting oedema around both ankles and fatigue since many weeks.

He was consuming frusemide 20 mg twice a day, rosuvastatin 10 mg per day, Bisoprolol 5mg per day till date, but without satisfactory improvement, hence opted for *ayurveda* treatment.

History of previous illness- He had undergone coronary artery bypass grafting (CABG)in the year 2018 and percutaneous coronary intervention (coronary angioplasty) in 2013. Though the patient did not have

any documents he explained that he also was admitted for 'water in the lungs. It seems to be a wet pleurisy

and tapping must have been done.

Family history- Father- diabetic

Mother- hypertension.

Sister- hypertension

Personal history – previously smoker for 20 years. Social alcoholic.

On examination-

Atura pareeksha-

<i>Prakrititaha</i>	<i>Pitta-kafa.</i>
<i>Vikrititah</i>	<i>Kafa- vata, uttamabala vyadhi</i>
<i>Saratah</i>	<i>Raktasaara. Satwasara.</i>
<i>Samhanantah</i>	<i>Asamhata.</i>
<i>Pramaanatah</i>	<i>Deergha, Madhyama.</i>
<i>Saatmyatah</i>	<i>Avara.</i>
<i>Satwatah</i>	<i>Madhyasatwa</i>
<i>Aaharashaktitah</i>	<i>Uttama.</i>
<i>Vyayamashaktitaha</i>	<i>Alpa.</i>
<i>Vayatah</i>	<i>Vruddha.</i>

Vikruti pareeksha.

<i>Hetu</i>	Sedentary lifestyle, <i>JAgaraNa</i> , rice, chapati, bread, pickles, chillies, <i>methi</i> , <i>akaalshana</i> , paneer, milk, curds, chicken, fried items, sleeping immediately after lunch (<i>guru</i> , <i>abhisnyandhi</i> , <i>ahrudya aahara and vihara</i>)
<i>Doshha</i>	<i>Guru</i> , <i>abhisnyandi</i> , <i>gunayukta kafa prakopa</i> . <i>Kafajanya margavarodhajanita vaataprakopa</i> .
<i>Dushya</i>	<i>Rasa (guru abhisnyandi ahara)</i> <i>Rakta (vidaahi ahara, jagarana, diwaswapa)</i> <i>Mamsa (abhisnyandi, diwaswapa)</i> <i>Meda(avyayama, diwaswapa)</i> <i>Prana vaha (roukshya due to jaagarana)</i> <i>Anna vaha (akaalabhojana)</i> <i>Rasavaha</i>
<i>Prakriti</i>	<i>Saadhya</i>
<i>Deshha</i>	<i>SaadhaaraNa</i>

<i>Kaala</i>	<i>Sharada.</i>
<i>Bala.</i>	<i>Avara.</i>
<i>Agni</i>	<i>Mandagni doshha.</i>
<i>Sweda</i>	<i>Madhayma vyaayaamaat.</i>
<i>Pureeshha</i>	<i>Niraama.mrudu.</i>
<i>Mutra</i>	<i>Normal.</i>
<i>Jivha</i>	<i>Saama on the posterior side and at the center.</i>

General Examination-

General condition	Good
Pulse	64 per minute
Blood pressure	128/84 mm Hg.
Cardio vascular system	S1S2 – normal. No added sounds.
Respiratory system-	Within normal limits.
Nervous system	Within normal limits.

Investigations-His transthoracic report done on 24/08/2021 shows dilated LA, LV. AR- Sclerotic aortic

valve. LVEF- 25-30% (Fig.1)



Samprapti -From the above history it was clear patient was having *Guru, Abhishyandhi, ahrudya ahara* and *Vihara*, as a result there was *Kapha Prakopa; Rasa, Rakta and Majja Dushti* and obstruction of *vaatadoshha*. Diagnosis of *Kaphaj Dhamani Praticaya* ⁽²⁾ due to *Rasasaamata*, resulting into *Sanga* ⁽³⁾ and *Vimargagamana* ⁽⁴⁾ in adjacent *Siras* and leading to *Hrudayagata Vyana Dourbalya and Padagat Shotha* was made.

Treatment –

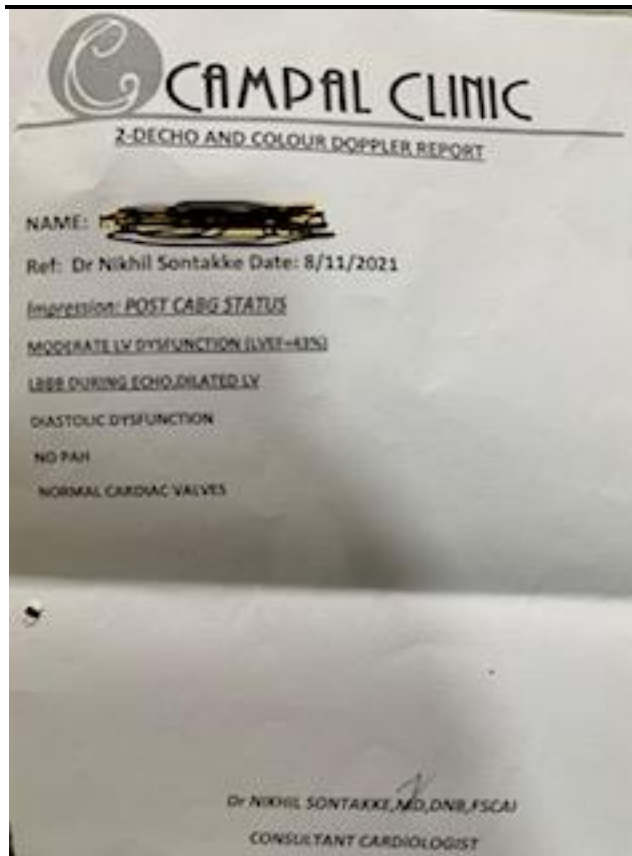
a)**Aahara**- He was advised to avoid *Abhishandhi* and *Guru Aahara* and increase *Laghu Aahara* like *Peya, Mudga Yusha, Stali Pishta, Tikta Rasa Pradhan Ahara*.

b) *Vihara*- Patient was advised to take intermittent exercise like light walking for five minutes every two hours, correction and modification in his sleeping habits and moderate gym.

c) Medications-

Tab. <i>Shwadanshtradi</i> <i>Guggulu</i>	500 mg.	TDS	Before food.
<i>Dadimavaleha</i> (<i>Sandu pharma.</i>)	15 ml	TDS	After food.
<i>Bhrungaraja</i> <i>ghana</i> (<i>Chaitanya</i> <i>pharma</i>)	500mg.	BID	After food For 30 minutes.

The treatment was given for 2 months. Patient came for follow up on 10/11/2021 with trans thoracic ECHO report with LVEF 43%. (Fig.2.) The patient's complaints were relieved completely no oedema bilaterally, no breathlessness on moderate exertion.



DISCUSSION-

Since the patient was having a sedentary lifestyle with irregular food habits and etiological factors specially affecting *rasavaha srotas*, the patient developed accumulation of *Kafa Dosha* in *Siras* and thus causing obstruction to the flow and producing weakness of *Vyanavayu*. This together with weakness of *maamsavahasrotas* and *rasavahasrotas* produced reduced ejection fraction. As the out put was reduced the preload increased giving rise to pedal oedema and breathlessness.

Shwadanshtradi guggulu is a modified form of *gokshuradi guggulu*⁽⁵⁾. The main ingredients are Tribulus Terrestris, Cyperus rotundus, Emblica officinalis, Terminalia bellirica, Terminalia chebula, Commiphora mukul, Zingiber Officinale, Piper Nigrum, piper longum, Fagonia Arabica, Saxifraga Lingulata. The following table shows the qualities of its contents.

Content	<i>Rasa</i>	<i>Veerya</i>	<i>Vipaka</i>	<i>Guna</i>	<i>doshghnata</i>
Tribulus terrestris	<i>Madhura</i>	<i>Sheeta</i>	<i>Madhura.</i>	<i>Kledaghna,</i> <i>vrushya</i>	<i>Tridoshaghna.</i>
Trifala	<i>Shhadrasa</i>	<i>Ushna</i>	<i>Madhura</i>	<i>Chakshushhya,</i> <i>lekhana</i>	<i>Kafa-pittaha.</i>
Commifera mukul	<i>Tikta.kashaya</i>	<i>Ushna</i>	<i>Katu</i>	<i>Lekhana.</i> <i>Sukshma.</i>	<i>Tridoshaghna.</i>
Trikatu	<i>Katu</i>	<i>Ushna</i>	<i>Katu</i>	<i>Lekhana</i> <i>deepana</i>	<i>Kafaghna.</i>
Fagonia Arabica	<i>Madhura.</i>	<i>Ushna.</i>	<i>Madhura.</i>	<i>Sara.</i>	<i>tridoshaghna.</i>
Saxifraga Lingulata	<i>Katu</i>	<i>Ushna</i>	<i>Katu</i>	<i>Sara.</i>	<i>Pittakafaraktaghna.</i>
Cyperus rotundus	<i>Tikta</i>	<i>Sheeta</i>	<i>Katu</i>	<i>Kledaghna,</i> <i>aamapachaka</i>	<i>Pittakafaghna.</i>

Shwadanshtradi guggulu acts as a *kledaghna*, reducing preload, and *deepana*, *pachana*, *tridoshghna* and *balya*. by reducing the excessive hardness in the blood vessels due to *guggulu* present in it , it also reduces the cardiac effort. *Musta* and *pashanabheda* act as reducing *aamavisha* and stimulating kidneys to cause diuresis.

2) Daadimavaleha – *Dadima* ⁽⁶⁾(*Punica Granatum*) is *hridaya* (cardio-tonic), *laghu* (light), *tridoshghna*(reduces three *doshhas*) and *baladaayak* (tonic). *Dadimavaleha* is prepared from fruits of *Punica Granatum*.

2) (*Bhringaraja*) *Eclipta alba*-

<i>Eclipta alba</i>	<i>Katu rasa</i>	<i>Ushna</i> <i>veerya</i>	<i>Katu</i> <i>vipaka</i>	<i>Ruksha</i> <i>,teekshna</i>	<i>Kafa vaata ghna.</i>
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Bhringaraja⁽⁷⁾ is *aamaghna*, useful for *rasadhātu* which is situated in *hridaya* and reduces *shwasa kasa* and *shotha*. V. Rangineni, D. Sharada, and S. Saxena indicated that leaf powder possessed diuretic, hypotensive, and hypocholesterolemic properties and helps in the alleviation of oxidative stress-induced complications in hypertensives ⁽⁸⁾

All the three medicines acted as cardiac tonic increasing its muscular contractibility, reducing high blood pressure and reducing venous stasis at the peripheries.

CONCLUSION- Left Ventricular Systolic Dysfunction is a major life threatening disease and understood in *Ayurveda* as *Vyaandourbalya* with *hrudvikruti* with *Rasasaamata* due to *Kleda* Accumulation. The treatment given in this patient proved to be lifesaving and lifestyle modifications helped him to have early recovery. According to basic principles of *Ayurveda*, if we know the aetiologies and the clinical features of the diseases, we can formulate treatment in *Anukta Vyadhis* and treat patients. In this case, *Shwadanshtradi guggulu*, *Dadimavaleha* and *Bhrungaraja* helped to reduce excessive *Rasasaaamta*, *kleda* and increase *bala* of *vyaana* thus improving Left Ventricular Ejection Fraction. It can be safely concluded that certain Ayurvedic medicines should be further researched on their inotropic effects.

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