The Professional Medical Journal
www.theprofesional.com

DOI: 10.29309/TPMJ/18.4194

ORIGINAL PROF-4194

HEART FAILURE;
CLINICAL FEATURES WITH PRESERVED EJECTION FRACTION.

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Article received on:
27/07/2017
Accepted for publication:
05/11/2017
Received after proof reading:
31/01/2018

ABSTRACT… Objectives: To observe the function of left ventricular contractile and its pairing with failure preserved ejection fraction. **Study Design:** Observational longitudinal study. **Setting:** Punjab institute of Cardiology. **Period:** Jan 2017 to June 2017. **Methods:** Four Hundred twenty one Heart failure patients (mean age 51 ± 7 years, 56% females, left ventricular ejection fraction 55±5%) undergo Left ventricular investigation through echocardiography and left heart catheterization of 191 patients. Through tricuspid annular plane systolic excursion (TAPSE), Patients were sorting out and data collect. Mean TAPSE score were 15.03±4.06 cm without any gender differences. Body surface presents strong relation with TAPSE values (r=0.74). Many different pattern consistently found within same patients leading to heart failure, but patients with HFpEFin which each component is operative behave differently. **Results:** Transformation of different evidences in clinical practice needs proper level of proofs regarding evidences. Out of four hundred twenty one heart failure patients, patients with prolonged heart failure symptoms and high rate of ejection fraction due to adaptive changes by the human body, whereas patients with aggressive mode of work have high mortality ratio. Out of all physiological derangements were strongly link with the TAPSE. Different biomarker-based strategies are much required to implement for excellent patient outcome in heart diseases. **Conclusion:** Using most common clinical features, we listed four major features with mark differences acts in remodeling and maintain in heart failure. Patients with decreases ejection fraction have more advanced heart failure. Therapeutic treatment specifically targeting main components of heart failure have better pathophysiological changes in less time. HFpEF patients are more chances to develop adaptive cardiac changes.

Key words: Ejection Fraction, Heart Failure, HFpEF.

Article Citation: Ilyas A, Zafar MH, Amin S. Heart failure; Clinical features with preserved ejection fraction.. Professional Med J 2018; 25(2):282-286.
DOI:10.29309/TPMJ/18.4194

INTRODUCTION

Particularly in old age patients have greater frequency of heart failure with reduced ejection fraction. Mostly patients with this type of syndrome have habit of less exercise routine or sedentary life style, repeat hospitalizations and weak immunity.[1] Pathophysiology of heart failure with conserved ejection fraction is incomplete and favourable treatment is remain largely undeterminate. Despite the complete management of ejection fraction, there is lacking in large evidence in explaining outcomes of efficiency for treatment of ejection fraction.[2]

At least 30 years before, cardiac failure noted as fail to maintain required ejection fraction in response to sudden reaction of myocardial muscles. In the following decades, identification of the different clinical features and properties of heart failure and that they directly relates with cardiomyocytes in the possible border zone of a damage area and may put irreversible damage leading to ischemic injury.[3] In the early 1980s, many experimental studies were conducted that are targeting different clinical and postclinical treatment with non-cardiac mechanisms or variety of pharmacological treatments including mitochondrial targeted anti-oxidants, anti-fibrotic plans, options related to cell therapeutic treatment and lipoprotein increases strategies are capable and goes further observation. This availability of data give much information about present best clinical approaches regarding Ejection Fraction.[4]

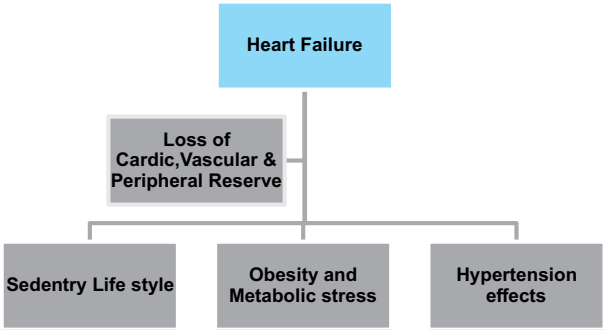

Figure-1. Factors leading to heart failure.

A huge number of studies have been conducted in the patients of heart failure with reduced ejection fraction. By exploration the use of beta blockers, angiotensin receptor blockers, aldosterone receptor blockers and angiotensin-converting enzyme inhibitors. Many of them researcher concluded mark improvements in results, leading to high recommendations for these drugs in heart failure.[6]

PATIENTS & METHODS

Four Hundred twenty one Heart failure patients (mean age 51 ± 7 years, 56% females, left ventricular ejection fraction 55±5%) undergo Left ventricular investigation through echocardiography and left heart catheterization of 191 patients. All the participant included in this study had ≥ 50 years of age, and have diagnosis of structural heart disease. The main focus was heart failure with hospitalization or increases mortality. All patients follow up was conducted on 3,5 , 7 ,9 and 12 months after hospital discharge. The study followed by the rules describe by hospital ethical committee and all subject gave their written consent form. The main reason with patients of conserved ejection fraction is exercise intolerance, which is measured by decreased peak oxygen consummation during exercise with maximal effort and is main factor of poor quality of life.

Reduced ejection fraction is becoming most common form heart failure in above fifty age. Patients with elderly age has high risk of death with diagnosis of heart failure and left ventricular ejection fraction variation increases the risk. Through tricuspid annular plane systolic excursion (TAPSE), Patients were sorting out and data collect. Mean TAPSE score were 15.03±4.06cm without any gender differences. Body surface presents strong relation with TAPSE values (r=0.74). Many different pattern consistently found within same patients leading to heart failure, but patients with HFpEF in which each component is operative behave differently.

Variables	Risk (95% Confidence Interval)	P-value
Age	1.03(1.02-1.06)	<0.05
Gender(female)	0.73(0.59-0.9)	<0.05
Arrhythmia	1.43(1.24-1.69)	<0.05
Arterial disease	1.24(1.13-1.52)	<0.05
Diabetic Mellitus	1.53(1.39-1.87)	<0.05
Hypertension	0.67(0.71-0.93)	<0.05
Valvular disruption	1.13(1.02-1.38)	0.06
Use Alcohol	0.94(0.61-0.89)	0.04
Body Weight (BMI)	1.05(2.01-2.05)	0.07
Variables	**Risk (95% Confidence interval)**	***P-value***
Blood Pressure	1.03(0.87-1.04)	0.81
Ejection Fraction	0.87(0.83-0.88)	<0.05
Hyperlipidemia	1.03(1.04-1.08)	<0.05

Table-I. Summarize table of all variables

RESULTS

Recent work regarding change in treatment strategies shows mark improvement to decrease mortality ratio. More therapeutic changes are needed to enhance quality of life by focusing the main symptoms of these systems.

Transformation of different evidences in clinical practice needs proper level of proofs regarding evidences. Out of four hundred twenty one heart failure patients, patients with prolonged heart failure symptoms and high rate of ejection fraction due to adaptive changes by the human body, whereas patients with aggressive mode of work have high mortality ratio. Out of all physiological derangements were strongly link with the TAPSE. Different biomarker-based strategies are much required to implement for excellent patient outcome in heart diseases. Moreover, aging factor, weight, many comorbidities and

weakness with excessive use of drugs make delay in good prognosis. The marked lacking of proper treatment stages give major challenges to physician during patient outcomes. Improvement will be needed in multidisciplinary teams work that will properly monitor the cardiac as well as non-cardiac issues.

DISCUSSION

In this observational study, Four hundred twenty one patients were observe and asses with heart failure, left heart catheterization of 191 patients, undergo Left ventricular investigation through echocardiography and left ventricular ejection fraction 55±5%.[7] Patients rate of mortality and hospitalizations due to cardiovascular factors are not improved through public awareness in changing lifestyles.[8]

Significant concern will be maintain on describing the mechanisms essential to enhance the threats regarding reduce functional capacity in patients with Heart failure.[9] A lot of previous studies have defined the basic physiological pattern in patients with reduced ejection fraction with heart failure.[10] In this study, we are trying to summarize the present fundamental clinical features of heart failure leading to adverse condition of patients in presence of proper treatment and plan of care.[11]

In the light of few recent observational data on heart failure patients suggest many benefits of heart failure patients with proper pharmacological treatment and helps in reducing mortality rate.[12] HMG-Co-A reductase inhibitors, Valsartan, Serelaxin, Sitaxsentan sodium and different Beta-blockers helps to increase peak VO2 in heart failure patients.[13] Some zinc dependent metalloprotease has significantly lower NT-pro BNP level after 24 weeks and found to decrease Left atrium size and shows a positive enhancement towards functional level of patients.[14]

Massie BM et al concluded that use of pharmacological treatment alone is not improve symptoms and functional outcomes in Heart failure patients. From large randomized study angiotensin-converting enzyme inhibitor ACE–angiotensin II receptor blocker in reducing patients hospitalization[15] Mortality rate were not to much decrease with use of ARB. Spironolactone aldosterone inhibitor slightly enhance the diastolic function of heart failure patients, although peak exercise capacity, quality of life and symptoms were not to much altered. Atlast, the main role of β-blockers remain controversial and not been so helpful.[16]

In order to improve quality of life and social activities of heart failure patients present plan should be introduce exercise intolerance including endurance exercises with training to improve peak VO_2 , anaerobic exercises and 7-min walk distance.[17] These effects are test by multicenter study of 64 heart failure patients upto two months of combined exercise training.[18] Nowadays, exercise training programs for heart failure patients mainly focus on endurance exercises, which is quiet helpful in promoting better quality of life.[19]

Our study describe that many clinical features of heart failure using simple and easily available symptoms and these features shows markedly different outcomes.[20] With more than four hundred patients, this is large cluster based observational study to date, like previous studies using continuous variables there is only use of categorical variables in this study.[21] So it is possible many clinical features may help to discover new way of treatment to deal with ejection fraction.

CONCLUSION

Using most common clinical features, we listed four major features with mark differences acts in remodeling and maintain in heart failure. Patients with decreases ejection fraction have more advanced heart failure. Therapeutic treatment specifically targeting main components of heart failure have better pathophysiological changes in less time. HFpEF patients are more chances to develop adaptive cardiac changes.

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Don't write so that you can be understood, write so that you can't be misunderstood.

– William Howard Taft –

AUTHORSHIP AND CONTRIBUTION DECLARATION

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1	Aneeqa Ilyas	Writing of manuscript.	
2	M. Hassan Zafar	Compilling of results.	
3	Sana Amin	Guideline in writing & Proof reading	