



ORIGINAL RESEARCH PAPER

General Medicine

EPIDEMIOLOGY OF HEART DISEASE AND ASSESSMENT ITS CLINICAL PROFILE IN SOUTH INDIA.

KEY WORDS: Epidemiology, Heat Failure, ECG, South India

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ABSTRACT To describe the clinical profile of patients with heart failure (HF) admitted in a tertiary care hospital. The present study was a descriptive cross sectional study. The participants, all patients with Heart Failure admitted in department of cardiology, with Age >18yrs. Patients with signs and symptoms of heart failure, who are admitted in Medicine and Cardiology wards was evaluated. The mean age is 51.9 years. In the present study most common presenting symptom is breathlessness seen in 97% of the patients, followed by swelling of feet (68%), Nocturnal cough (66%), chest pain and palpitations. The most common ECG findings are ischaemic changes in the form of T-wave inversion and poor progression of R-wave followed by left ventricular hypertrophy with strain pattern. LV hypertrophy and dilatation is the most common 2D Echo finding.

Introduction:-

Heart failure (HF) is a common cardiovascular condition with increasing incidence and prevalence. The increasing prevalence of HF might be due to growing awareness and diagnosis of HF, an aging population, increasing incidence of HF, improvement in the treatment and management of cardiovascular disease, rise in the risk factors of cardiovascular disease (CVD) and by the persistence of diseases such as RHD, endomyocardial fibrosis, tuberculous pericardial disease and anaemia.¹

Although survival after heart failure has improved due to advancement in diagnosis and treatment, it is still one of the leading causes of death causing approximately 30,000 deaths per year.² As per the data available estimation of prevalence of heart failure in India due to coronary artery disease, hypertension, obesity, diabetes and rheumatic heart disease ranges from 1.3 to 4.6 million, with an annual incidence of 0.5-1.8 million.¹

Objectives:-

To describe the clinical profile of patients with heart failure (HF) admitted in a tertiary care hospital.

Materials and Methods:

Study Design:

The present study was a descriptive cross sectional study.

Study setting:

The present study was conducted in Sri Venkateswara Ramnarayana Ruia Government General Hospital, Tirupathi, AndhraPradesh.

Study Duration:

The current study was conducted for almost a year between Dec-2016 to Oct-2017.

Study Participant:

All patients with Heart Failure admitted in department of cardiology and medical wards, with Age >18yrs and patient who gave informed consent to participate in this study were included. Patients who were not willing to give the informed consent and Patients who have subacute bacterial endocarditis at the time of presentation were excluded from the study.

Data collection:

Patients with signs and symptoms of heart failure, who are admitted in Medicine and Cardiology wards was evaluated with baseline clinical history, risk factors and past illness in a pre-tested proforma specifically designed for the purpose. A detailed clinical examination was done with 12 lead standard Electro cardiogram and 2D Echocardiography.

Ethical issues:

Patients were informed prior to the study and written consent was taken from the patients or their attenders. No ethical issues were involved. No financial burden on the patients.

Results:

The study group consists of 100 patients with heart failure. The maximum number of cases of heart failure is seen in the age groups 56-65 years which contribute 35% of the study group. In the study 66% are males and 34% are females. The mean age is 51.9 years. The mean age of males is 53.45 years, and that of females is 48.9 years. The maximum number of patients belongs to upper lower class (IV), followed by lower class (V) and lower middle class (III).

The mean BMI of the study population is 24.1±5.3, and that of waist hip ratio is 0.95±0.036. The mean pulse rate is 98.2±20.27 and the mean of pulse pressure is 44.9±9.8. The mean BMI of the study population is 24.1±5.3, and that of waist hip ratio is 0.95±0.036. The mean pulse rate is 98.2±20.27 and the mean of pulse pressure is 44.9±9.8. Most common risk factor in the present study is Hypertension present in 58% of the patients followed by smoking (52%) and Diabetes (47%).

In the present study most common presenting symptom is breathlessness seen in 97% of the patients, followed by swelling of feet (68%), nocturnal cough (66%), chest pain and palpitations.

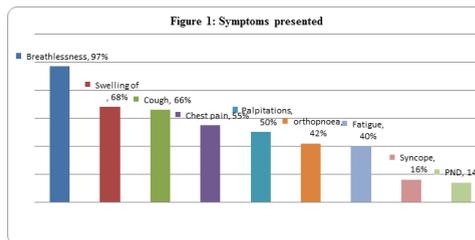


Table 1: ECG pattern in Heart Failure patients.

S.no	Condition	No. of patients	Percentage (n=100)
1	Ischaemic changes	56	56%
2	LVH	44	44%
3	Arrhythmias A. Atrial fibrillation B. Premature beats	42 26 16	42% 26% 16%
4	RVH	18	18%
5	LBBB	16	16%
6	RBBB	6	6%

The most common ECG findings are ischaemic changes in the form of T-wave inversion and poor progression of R-wave, followed by left ventricular hypertrophy with strain pattern.

Table 2: 2D Echo Findings in Patients with heart failure:

S. no	2D Echo finding	No. of patients	Percentage (n=100)
1	LV dilatation	86	86%
2	Mitral regurgitation	68	68%
3	Ejection fraction >40%	62	62%
4	LV+RV dilatation	46	46%
5	Ejection fraction<40%	38	38%
6	Tricuspid regurgitation	38	38%
7	Regional wall motion abnormalities	34	34%
8	Mitral stenosis	6	6%
9	Pericardial effusion	4	4%

The most common echocardiographic findings includes LV dilatation seen in 86% of the patients, followed by mitral regurgitation seen in 68% of the patients. In our study group, patients with preserved and midrange ejection fraction are forming 63% whereas reduced ejection fraction forms only 37%.

Discussion:-

The present study aims to describe the clinical profile of patients with heart failure. The results are analyzed and discussed compared with the findings of previous studies on this subject matter.

The mean age of males and females is 53.45 years, 48.9 years respectively. In the study done by Majumder et al³ the mean age is 50.7±14.8 and in a study done by Ahmad et al⁴, Jain et al⁵ and Narasimhan et al⁶ the mean age is 59.95±4.2, 52.9±15, 59.9±14.4 respectively. Average BMI in our study is 24.1±5.3. In a study conducted by Narasimhan et al⁶ on cardiovascular risk profile in India, the average BMI observed is 24.4±4.5.

Symptomatology:

In the present study the most common presenting symptom is dyspnoea present in 97% of the patients, followed by pedal edema (68%).

Dyspnoea and pedal edema constitute the most common symptoms. This is comparable to the study conducted in Trivandrum by Roby et al⁷ wherein dyspnoea and pedal edema are seen in 84% and 62% respectively. This is also comparable to the study conducted by Nandania et al⁸ in Gujarat where dyspnoea is seen in 100% of patients and pedal edema in 68% of patients.

Nocturnal cough is reported by 66% of patients. In a study conducted by Narasimhan et al⁶ nocturnal cough is seen in 55% of the patients. Chest pain is the next most common symptom seen in 55% of patients. In a study done by Narasingarao et al⁹ chest pain is seen in 40% of patients. The other most important symptom is palpitation which is reported by 50% of the patients.

Electrocardiography:

The most common ECG findings are ischaemic changes mainly in the form of T-wave inversion and poor progression of R-wave, seen in 56% of study subjects. In the study done by Narasingarao et al⁹ most frequent ECG abnormalities observed are ischaemic changes in the form of T-wave inversion and ST elevations in 30% of the patients and it is comparable to the results of the present study.

In the present study, 26% of patients presented with atrial fibrillation. In a study done by Narasingarao et al⁹ AF is seen in 15% of patients. In the present study, LBBB is found in 16% of patients and RBBB in 6%. A completely normal ECG has a high negative predictive value for Heart Failure (>90%).¹⁰ None of the present study subjects showed normal ECG.

Echocardiographic findings:

The most common echocardiographic finding in the present study is LV dilatation and LV hypertrophy seen in 86% of the patients, followed by mitral regurgitation in 68% of patients. It corresponds with the findings of Namani Ganesh et al¹¹ where the most common echo finding is LV dilatation in 100% of the patients. Mitral regurgitation is seen in 64% in the present study and it is corresponds with the findings of Namani Ganesh et al¹¹ where 62% of the patients showed mitral regurgitation.

Conclusion:

One hundred patients with heart failure who are admitted during the study period are included in the study group. Their Symptoms, ECG and 2DECHO findings are analysed and the following observations are made. The most common symptom is breathlessness, followed by pedal edema. The most common ECG finding is T-wave inversion and poor progression of R wave. LV hypertrophy and dilatation is the most common 2D Echo finding. Patients with reduced ejection fraction (HFrEF) are more in proportion (37%) than patients with preserved ejection fraction 33 % (HFpEF) and patients with midrange ejection fraction 30 % (HFmEF).

Limitations of our study are, the characterization of patients with HF is done in the hospital setting. This imparts bias, since hospitalization rates results from a complex interaction of multiple determinants including the prevalence, incidence and survival of the patients with disease, referral patterns and treatment possibilities in primary care. The study has small sample size. Weak study design. The possibility of bias by way of preponderance of low socio economic group cannot be ruled out. This is because of the setting. There is clear evidence that the trends of HF is changing with the changes in lifestyle habits of low socio economic group. Now the prevalence of heart failure in low socio economic group is equal or slightly higher than in the high socio economic group.

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