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Original Research Paper

Pharma

A STUDYON CLINICAL PROFILE, OUTCOMES AND MANAGEMENT OF CONGESTIVE HEART FAILURE- A PROSPECTIVE OBSERVATIONAL STUDY

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ABSTRACT

Background: HF is a growing cause of hospitalization around the world with a lifetime risk of 1 in 5. HF can originate from CAD, high blood pressure, rheumatic heart disease, or other causes like cardiomyopathies, congenital heart disease, endocarditis and myocarditis. It is still a common reason for urgent admission to hospital and a major cause of morbidity and mortality. So, we carried out an observational study to determine clinical profile and medical therapy for patients experiencing heart failure. **Aims and objectives:** To study the Clinical profile, outcomes and management of congestive heart failure patients. **Methods:** This prospective observational study was carried out in Department of medicine, at Government Cuddalore Medical College and Hospital [GCMCH], Chidambaram. All the patients diagnosed with congestive heart failure were included in the study. **Results:** A total of 100 patients diagnosed with HF were included in the study. Males were more predominant in the age group of 51- 70 years. Chest pain (28%) was the most common symptom in patients with CHF. Most frequently observed clinical feature both tachypnea and sweating (13%) were predominated. In our study, heart failure with preserved ejection fraction (79%) was more common. The patients were treated according to underlying cause. **Conclusions:** The study concludes that heart failure in patients increased with age. Men were more frequently affected. This is useful for echocardiographic studies where HFpEF is more common. In this study, the most commonly used drugs in patients with CHF were (96%) diuretics. Concluded the outcome of the study based on presenting clinical signs and systemic examination, patients with minimal symptoms improved their clinical condition.

KEYWORDS : Heart failure, Ejection fraction, Hypertension.

INTRODUCTION

Heart failure (HF) is a major public health problem having a prevalence of range from 1.3 million to 4.6 million, with an annual incidence of 491 600–1.8 million in India. HF is primarily considered as a condition of the elderly with an incidence of 10 per 1000 population after age 65; while approximately 80% of patients hospitalized with HF are more than 65 years old.

The linear growth rate of HF is a sign of its increased prevalence due to population aging and advances in medical treatment. Recent statistics indicates that length of survival among the HF patients is increasing. This trend entails high costs for countries of which elderly population is on the rise. HF is a complex syndrome, characterized by its inability to supply blood to cater the metabolic needs of tissues in the presence of normal filling pressures or being capable of doing it only at high filling pressures. HF is a growing cause of hospitalization around the world with a lifetime risk of 1 in 5. HF can originate from CAD, high blood pressure, rheumatic heart disease, or other causes like cardiomyopathies, congenital heart disease, endocarditis and myocarditis.

It is still a common reason for urgent admission to hospital and a major cause of morbidity and mortality. Since HF is a multifactorial one, often it becomes difficult to frame health policies for its reduced incidence. In spite of the increasing recognition of the importance of HF, epidemiological, clinical and therapeutic data on the disease are still fully inadequate which makes it difficult to define priorities in order to establish preventive strategies. Recent studies have indicated that more than half patients diagnosed with HF even though ejection fraction (EF) is normal or near normal.

This clinical condition is termed as "Heart failure with normal ejection fraction" (HFnEF) or "Diastolic heart failure" (DHF). It is characterized by the evidence of diastolic dysfunction (e.g., impaired LV relaxation, abnormal left ventricular filling and elevated filling pressure). There has been substantial progress in the treatment of systolic heart failure (SHF). However, very little progress has been made in the management of DHF. The mortality due to DHF is 8% to 9% per year which is about the half of the SHF but the morbidity, hospitalization rates and healthcare costs per patient are almost similar to those of SHF. The common risk factors associated with DHF zically diagnosed congestive heart failure patients attending Department of medicine, at Government Cuddalore Medical College and Hospital [GCMCH], Chidambaram.

Study Site

Department of Medicine, Government Cuddalore Medical College and Hospital [GCMCH], a 1250 bedded multi-speciality tertiary care teaching hospital located in Rural South India, Chidambaram.

Study Design

A prospective observational study.

Study Period:

6 months [November (2022)-April (2023)].

Study Population

Patients will be selected on the basis of inclusion and exclusion criteria.

Sample Size

At confidence interval 95%, margin of error is 5%, population proportion is 50% (0.5) and population size is 100. The sample size is calculated as 80 by using cochran's formula.

Study Tools

Proforma (Data collection form)

Sources Of Data

Case sheets and personal interaction with patients.

Study Recruitment

The study method involves the enrolment of patients based on inclusion and exclusion criteria.

Inclusion Criteria

- Patients with CHF who are willing to give informed consent in the study.
- Patients between the ages of 30 to 80 years with CHF.

Exclusion Criteria

- Pregnant or lactating women.
- Patient with psychological illness.
- Patients who are in critical condition.

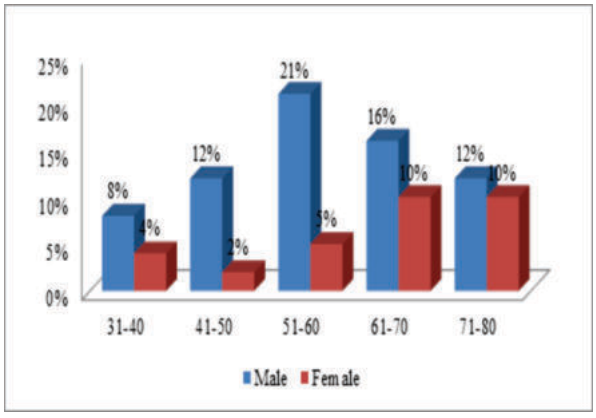
Study Procedure

- Period will be conducted for 6 months (November 2022-April 2023).
- Selection of subjects based on inclusion and exclusion criteria.
- Prior to start the study, informed consent form from patient was obtained.
- Study Proforma (Data collection form) is designed to collect all the details like Inpatients number, name, age, chief complaints, history of present illness, patient past medical and medication history, drug chart details, prescribed dosage, frequency, Route of administration and clinical diagnosis.
- The present study will be carried out among the CHF patients visiting Inpatient under the department of medicine, Government Cuddalore Medical College and Hospital [GCMCH].
- Patient counselling will be provided in terms of oral method.
- Collected data will be analysed using suitable descriptive statistical tools.
- The net result of treatment will be recorded and tabulated.
- Conclusion.
- Submission of report.
- Collected data will be stored in department library for future reference in the form of thesis book.

RESULTS

Age and Gender:

The study shows that congestive heart failure was more common in men (69%) than women (31%). Among 100 patients 26% of 51-60 years aged and 26% of 61-70 years aged had high prevalence of CHF.

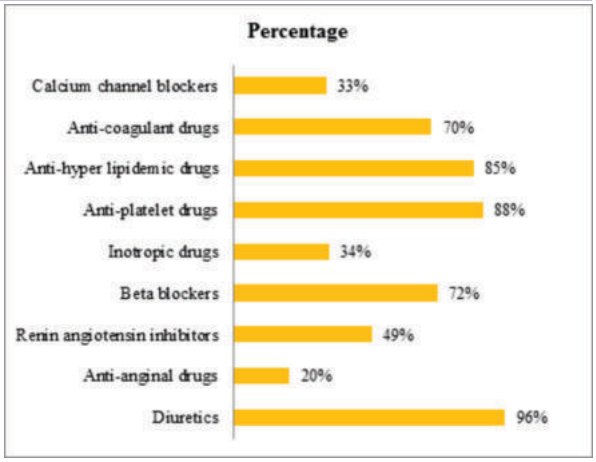


Echocardiography

The study provides that the heart failure with preserved ejection fraction (79%) was more common than heart failure with reduced ejection fraction (21%) in patients.

Treatment:

In our study, among the 100-study population, (96%) diuretics were predominantly prescribed followed by (88%) antiplatelet agents, (85%) anti-hyperlipidemic agents, (72%) beta blockers, (70%) anti-coagulants, (49%) renin-angiotensin inhibitors, (34%) inotropes, (33%) calcium channel blockers and (20%) anti-anginal drugs were the least prescribed in this study.

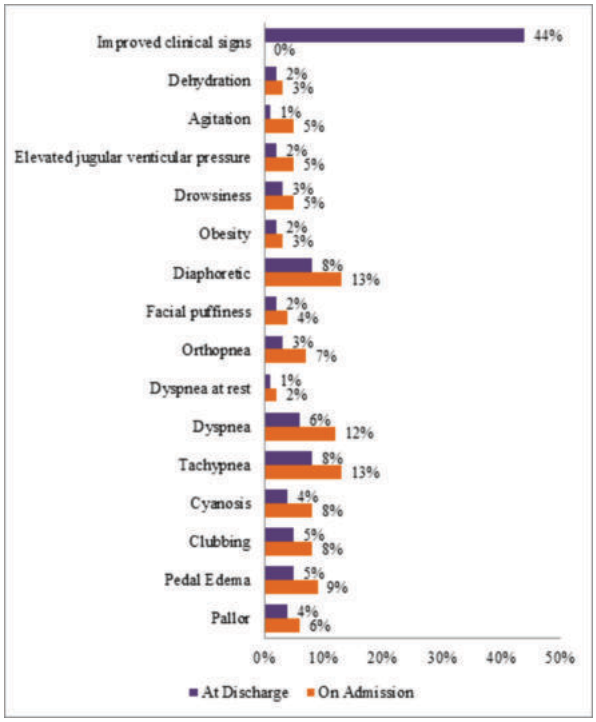


Outcome studies

- **On Examination**

The above graph shows that improved outcomes in clinical signs, On examination at the time of discharge were Improved clinical signs (44%), Pallor (4%), Pedal edema (5%), Clubbing (5%), Cyanosis (4%), Tachypnea (8%), Dyspnea (6%), Dyspnea at rest (1%), Orthopnea (3%), Facial puffiness (2%), Diaphoretic (8%), Obesity (2%), Drowsiness (3%), Elevated Jugular ventricular pressure (2%), Agitation (1%), Dehydration (2%).

Based on presenting examination, 44% of patients with minimal symptoms improved their condition, and approximately 56% of patients showed clinical remission and clinical normalization after treatment and other appropriate therapeutic measures. At the time of discharge, the general condition of almost all patients had improved.



Systemic examination

The above graph shows that improved outcomes in clinical signs, Systemic examination at the time of discharge were Improved clinical signs (45%), Crepts in all lungs field (3%), Basal crepitation (21%), Extensive crepitation (4%). Coarse crepitation (2%), Wheeze (7%), Inspiratory wheeze (4%), Expiratory wheeze (0%), Crepts with respiratory wheeze (2%), Diastolic murmur (4%), Systolic murmur (3%), Spleenomegaly (0%), Abdominal distension (5%).

Based on systemic symptoms, 45% of patients with minimal symptoms improved their condition, and approximately 55% of patients showed clinical remission and clinical normalization after treatment and other appropriate therapeutic measures. At times, the general condition of nearly all patients improved.

DISCUSSION

Heart failure is associated with high morbidity and mortality and requires hospitalization. We analyzed the clinical profile, outcome, and management of congestive heart failure.

Of the 100 patients in this study, 69% were male and 31% were female. According to CHF patient demographics, men (69%) are more common than women (31%). The incidence of CHF was higher in male than in female patients. Similar results of male predominance were found in a study by Vishal Gupta., et al. (2019) found that men were 53.57% and women were 46.43%.

As per the study conducted by Tromp J et.al (2019) CHF was more commonly found in the age group of 55-85 years, whereas in our study patients belonging to the age group of 51- 60 years and 61- 70 years (26%) had a high prevalence of CHF. When categorizing age groups by gender, 21% of males and 16% of females were found in the age group of 51-60 years and 61- 70 which is significantly higher in number.

In the current study, Chest pain (28%) was the most common symptom in patients with CHF, followed by (17%) profuse sweating, (15%) breathlessness, (6%) palpitation, (6%) orthopnea, (5%) paroxysmal nocturnal dyspnea, (4%) nausea and vomiting, (3%) leg swelling, (3%) decreased urine output, (3%) loss of appetite, (2%) fatiguability, (2%) syncope, (2%) weakness, (2%) constipation, (1%) disturbed sleep and (1%) increased urine output are the most frequently observed symptoms in patients with CHF. A similar study was performed by TM Reddy., et al. (2018) Implemented.

In our study, we observed clinical signs when on examination of patients. Improved clinical signs (44%), Pallor (4%), Pedal edema (5%), Clubbing (5%), Cyanosis (4%), Tachypnea (8%), Dyspnea (6%), Dyspnea at rest (1%), Orthopnea (3%), Facial puffiness (2%), Diaphoretic (8%), Obesity (2%), Drowsiness (3%), Elevated Jugular ventricular pressure (2%), Agitation (1%), Dehydration (2%). A similar study was performed by Watson et al. (2018) Implemented.

In our study, we observed clinical signs when systemic examination of patients. Improved clinical signs (45%), Crepts in all lungs field (3%), Basal crepitation (21%), Extensive crepitation (4%). Coarse crepitation (2%), Wheeze (7%), Inspiratory wheeze (4%), Expiratory wheeze (0%), Crepts with respiratory wheeze (2%), Diastolic murmur (4%), Systolic murmur (3%), Spleenomegaly (0%), Abdominal distension (5%).

According to Kevin S. Shah et al. (2017), HFpEF gave him 75.7% more than HFrEF 75.3%. In our current study, we observed that heart failure with preserved ejection fraction (79%) was more common than heart failure with reduced ejection fraction (21%) in patients.

In the study by Sayed *et al (2013) commonly prescribed drugs like* (99%) diuretics, (13%) beta blockers, (73%) ACEI, (11%) ARB and (69%) cardiac glycoside. In this study, (96%) diuretics were predominantly prescribed followed by (88%) antiplatelet agents, (85%) anti-hyperlipidemic agents, (72%) beta blockers, (70%) anti-coagulants, (49%) renin-angiotensin inhibitors, (34%)inotropes, (33%) calcium channel blockers and (20%) anti-anginal drugs were the least prescribed in this study.

Based onpresenting examination, 44% of patients with minimal symptoms improved their condition, and approximately 56% of patients showed clinical remission and clinical normalization after treatment and other appropriate therapeutic measures. At the time of discharge, the general condition of almost all patients had improved.

Based on systemic symptoms, 45% of patients with minimal symptoms improved their condition, and approximately 55% of patients showed clinical remission and clinical normalization after treatment and other appropriate therapeutic measures. At times, the general condition of nearly all patients improved.

CONCLUSION

- The study concludes that heart failure in patients increased with age. Men were more frequently affected by congestive heart failure than women.
- This is useful for echocardiographic studies where HFpEF is more common than HFrEF.
- In this study, the most commonly used drugs in patients with CHF were (96%) diuretics followed by (88%) antiplatelet agents,(85%) anti-hyperlipidemic agents, (72%)beta blockers,(70%) anti-coagulants, (49%) renin-angiotensin inhibitors, (34%)inotropes, (33%) calcium channel blockers and (20%) anti-anginal drugs were the least prescribed in this study.
- Conclude the outcome of the study based on presenting clinical signs. This included 44% of patients with mild symptoms whose condition improved, with approximately 56% of patients showing clinical remission and clinical normalization after treatment.
- Conclude the outcome of the study based on systemic examination, this included 45% of patients with minimal symptoms improved their condition, and approximately 55% of patients showed clinical remission and clinical normalization after treatment.
- This study provides detailed and effective information on the clinical profile, outcome, and management of congestive heart failure.

REFERENCES

1. Ponikowski P., Voors A.A., Anker S.D. 2016 ESC Guidelines for the diagnosis and treatment of acute and chronic heart failure: the Task Force for the diagnosis and treatment of acute and chronic heart failure of the European Society of Cardiology (ESC) Developed with the special contribution of the Heart Failure Association (HFA) of the ESC. Eur Heart J. 2016;37:2129–2200.
2. Damman K., Kjekshus J., Wikstrand J. Loop diuretics, renal function and clinical outcome in patients with heart failure and reduced ejection fraction. Eur J Heart Fail. 2016;18:328–336.
3. Hamaguchi S., Kinugawa S., Tsuchihashi-Makaya M. Loop diuretic use at discharge is associated with adverse outcomes in hospitalized patients with heart failure: a report from the Japanese cardiac registry of heart failure in cardiology (JCARE-CARD) Circ J. 2012;76:1920–1927.
4. Kotecha D., Flather M.D., Altman D.G. Heart rate and rhythm and the benefit of beta-blockers in patients with heart failure. J Am Coll Cardiol. 2017;69: 2885–2896.
5. Owie MR, Zaphiriou A. Management of chronic heart failure. *BMJ*. 2002;325:422–5.
6. Lindenfeld J, Albert NM, Boehmer JP, Collins SP, Ezekowitz JA, Givertz MM. et al. HFSA 2010 comprehensive heart failure practice guideline. *J Card Fail*. 2010;16:e1–194.
7. Zacharias M., Joffe S., Konadu E.et al. : "Clinical epidemiology of heart failure with preserved ejection fraction (HFpEF) in comparatively young hospitalized patients". Int J Cardiol 2016; **202**: 918.
8. Metra M., Cotter G., El-Khorazaty J.et al. : "Acute heart failure in the elderly: differences in clinical characteristics, outcomes, and prognostic factors in the Veritas study". J Card Fail 2015; **21**: 179.
9. Cowie MR. Clinical and economic burden of chronic heart failure. *Medicographia*. 2011;33:370–6.
10. Remme WJ, Swedberg K. Guidelines for the diagnosis and treatment of chronic heart failure. *Eur Heart J*. 2001;22:1527–60.
11. Tromp J, Meyer S, Mentz RJ, et al.. Acute heart failure in the young: Clinical characteristics and biomarker profiles. *Int J Cardiol* 2016;221:1067-72. 10.1016/j.ijcard.2016.06.339.
12. Heckman GA, Misiaszek B, Merali F, Turpie ID, Patterson CJ, Flett N, et al. Management of heart failure in Canadian long-term care facilities. *Can J Cardiol*. 2004;20:963–9.
13. Barbara G. Wells, Joseph T. DiPiro ,Terry L. Schwinghammer, Cecily V. DiPiro Pharmacotheraphy Handbook book 10th edition (Pg.no: 94).
14. KD Tripathi, Essentials of Medical pharmacology 7th edition, 2013 (Pg.no : 539).