

Original article:

Study of clinical profile and outcome of heart failure patients

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Date of submission: 01 March 2023

Date of Final acceptance: 8 May 2023

Date of Publication: 02 June 2023

Source of support: Nil

Conflict of interest: Nil

Abstract

Background: Heart failure (HF) is a major health problem affecting about 64.3 million persons globally, with an epidemiology that varies widely within and between countries. The international Congestive Heart Failure Study (INTER-CHF) was an international, multicenter cohort study, conducted in sixteen countries in Africa, Asia, the Middle East, and South America with six- and twelve-month follow-ups.

Aim & Objective: 1. To study risk factors for heart failure. 2. To study outcome of patients of heart failure

Methods: Cross sectional study, Study setting: Medicine Department of tertiary care centre.

Study duration: from January 2021 to February 2022 Study population: The study population included all the cases with HF admitted at a tertiary care center Sample size: 100

Results: majority of cases were found in above 70 years group (70 cases) followed by 51-60 years age group (22 cases), 61-70years, 41-50years, 31-40years, 21-30years and 18-20 found 17, 15, 14, 5 and 1 case respectively. Majority of study participants were Males, contributing 60 (60%) and Females 40 (40%). Majority of cases had a history of Hypertension (86 cases), followed by Smoking (40 cases), history of alcohol consumption (37 cases). 23 cases were found with DM, Rheumatic heart disease in 17 cases and metabolic syndrome found in 15 cases. Majority of cases complained Dyspnoea on exertion (89 cases) followed by Orthopnoea (73 cases), Pedal oedema (67 cases), Chest pain (56 cases), Palpitation (49 cases), cough (40 cases), syncope (40 cases). Majority of cases were discharged after recovery (81 cases), 12 cases took DAMA and 7 cases of death during treatment.

Conclusions: Heart failure was seen commonly in age group of above 70 years. most common risk factor was HTN. Hospital mortality was 7%

Keywords: HF, HFpEF, HFrEF, Modifiable risk factors, Outcome

Introduction

Heart failure (HF) is a major health problem affecting about 64.3 million persons globally, with an epidemiology that varies widely within and between countries^[1]. The international Congestive Heart Failure Study (INTER-CHF) was an international, multicenter cohort study, conducted in sixteen countries in Africa, Asia, the Middle East, and South America with six- and twelve-month follow-ups^[2,3,4].

It was the first major study to systematically acquire data on in- and out-patients with HF in these regions, which were hitherto under-represented in previous global HF studies. It revealed that mortality rate was highest in Africa (34%), intermediate in southeast Asia (15%), and lowest in China (7%), South America (9%), and the Middle East (9%), and the regional differences persisted after multivariable adjustment^[4].

The variations in mortality between the regions were due to an interplay between health-care infrastructure, and environmental and genetic factors^[4]. The prevalence is increasing in many countries due to aging societies, increased prevalence of risk factors, and better survival from other cardiovascular diseases.^[5-7] However, the survival rate of HF remains poor, and the health burden from this condition is increasing globally.^[8-11]

The prevalence of risk factors such as diabetes, myocardial infarction, and ischemic heart disease has increased in the past few decades, although the survival outcomes from these diseases have also improved.^[12,13] Consequently, the prevalence of HF approximately doubled from 0.75% in 2002 to 0.53% in 2013, and the total medical cost increased by about 50% from 2009 to 2013.^[14,15] The increase in total medical cost was mostly attributable to the cost of in-hospital care.

Aim and objectives:

1. Clinical profile of patients with heart failure.
2. To study risk factors for heart failure.
3. To study outcome of patients of heart failure

Methodology

Study design: Cross Sectional Study

Study setting: Medicine ward tertiary care centre

Study duration: 1 year (from January 2021 to February 2022)

Study population: The study population included all the cases with Heart failure admitted at a tertiary care center

Inclusion Criteria:

1. All the classical cases of heart failure above the age of 18 years according to Framingham criteria with right sided or left sided independently or in combination (biventricular failure) are included.

Exclusion Criteria:

1. Not willing to participate in the study
2. Loss to follow up
3. Patients below the age of 18 years
4. Already diagnosed cases of congenital heart disease

Approval for the study:

Written approval from Institutional Ethics committee was obtained beforehand. Written approval of Medicine

and Related department was obtained. After obtaining informed verbal consent from all patients with the definitive diagnosis of heart failure admitted to Medicine ward of tertiary care centre such cases were included in the study.

Sample Size: With reference to study by **Mistry BS et al (2019)¹⁶** He found that the prevalence of IHD among heart failure cases was 64.28%.

Formula for sample size = $4 * P * Q / L^2$

Where P = 64.28%

Q = $100 - 64.28 = 35.72$

L = Allowable error = 20% (Absolute error) **Sample size** = 4

$* 64.28 * 35.72 / 163.84 = 56.05$ **Sample size Rounded to** =
100

Sampling technique :

Convenient sampling technique used for data collection.

All patients admitted in the Medicine department of tertiary care center from January 2021 to February 2022 with heart failure were included in the study.

Methods of Data Collection and Questionnaire: Predesigned and pretested questionnaire was used to record the necessary information. Questionnaires included general information, such as age, sex, religion, occupation of parents, residential address, and date of admission. Medical history- chief complain, past history, general examination, systemic examination After taking written and informed consent about enrolment in the study and maintaining adequate privacy and confidentiality, all patients were subjected to a standardized interview. Detailed medical history was taken, and complete general and systemic examinations were done to establish the diagnosis of heart failure and rule out close differentials like renal failure and acute respiratory distress syndrome. Complete haemogram, urine routine analysis, renal function test (s. urea, s. creatinine), liver function test (s. bilirubin), serum electrolytes (S. Na⁺, S. K⁺) (as and when required), electrocardiogram, chest x-ray, 2d echocardiography, random blood sugar, serum lipid profile, other investigations (as and when required) were done. All the procedures and investigations conducted under direct guidance and supervision of the treating consultant. Proforma of heart failure notes maintained.

Data entry and analysis:

The data were entered in Microsoft Excel and data analysis was done by using SPSS demo version no 21 for windows. The analysis was performed by using percentages in frequency tables and correlation of heart failure. $p < 0.05$ was considered as level of significance using the Chi-square test.

Results

The present Cross sectional study was done among 100 heart failure cases admitted to tertiary care centre during study period.

Table 1: Distribution of cases according to age (N=100)

Age in years	Frequency	Percentage
18-20	1	1%
21-30	5	5%
31- 40	14	14%
41-50	15	15%
51-60	22	22%
61-70	17	17%
Above 70	26	26%
Total	100	100 (100%)

Above table shows that majority of cases were found in above 70 years group (26 cases) followed by 51-60 years age group (22 cases), 61-70 years, 41-50 years, 31-40 years, 21-30 years and 18-30 years found 17, 15, 14, 5 and 1 case respectively.

Table 2: Distribution of cases as per sex (N=100)

Gender	Frequency	Percentage
Male	60	60%
Female	40	40%
Total	100	100 (100%)

Above table shows that majority of study participants were Males contributing 60 cases (60%) and Females 40 cases (40%)

Table 3: Distribution of cases according to Risk factors (N=100)

Risk factors	Frequency	Percentage
Hypertension	86	86%
Diabetes mellitus	23	23%
Alcohol Consumption	37	37%
Smoking	40	40%
Rheumatic heart Disease	17	17%
Obesity	15	15%

The above table shows majority of cases had a history of Hypertension (86 cases), followed by Smoking (40 cases), history of consumption of alcohol (37 cases), 23 cases were found with DM, Rheumatic heart disease in 17 cases and metabolic syndrome found in 15 cases.

Table 4: Distribution according to clinical feature (N=100)

Clinical feature	Frequency	Percentage
Dyspnoea on exertion	89	76%
Orthopnoea	73	73%
Pedal oedema	67	67%
Chest pain	56	56%
Cough	40	40%
Palpitation	49	49%
Syncope	40	40%
Others	56	56%

Majority of cases complained Dyspnoea on exertion (89 cases) followed by Orthopnoea in 73 cases, Pedal oedema in 67 cases, Chest pain in 56 cases, Palpitation in 49 cases, cough in 40 cases, syncope in 40 cases.

Table 5: Distribution of cases according to outcome (N=100)

Outcome	Frequency	Percentage
Survival/Discharged	81	81%
DAMA	12	12%
Death	7	7%
Total	100	100 (100%)

The above table shows majority of cases were discharged after treatment (81 cases), DAMA 12 cases and 7 cases death during treatment.

Discussion

The present cross sectional study was done among 100 cases of heart failure admitted to tertiary care centre during study period.

In current study majority of cases were found in above 70 years group (70 cases) followed by 51- 60 years age group (22 cases), 61-70 years, 41-50 years, 31-40 years, 21-30 years and 18-20 years found 17, 15, 14, 5 and 1 case respectively. Similar result was found in a study by Karaye KM et al (2021)¹⁷ He reported that the maximum cases in above 60 years age group. Another study conducted by Harikrishnan S et al (2022)¹⁸ He revealed that the mean age was 59.9 years.

In present study majority of study participants were Males contributing 60 cases (60%) and Females 40 cases (40%). Similar result was observed in the study conducted by Mistry BS et al (2019)¹⁶ He reported that the Males constituted more than half of patients. Another study that reported similar result was by Harikrishnan S et al (2022)¹⁸ He revealed that in his study 31% cases were women and 69% were male. In current study majority of cases had a history of Hypertension (86 cases), followed by Smoking which was present in 40 cases, history of alcohol consumption was reported by 37 cases, 23 cases were

found with DM. Rheumatic heart disease was seen in 17 cases and metabolic syndrome was found in 15 cases. Similar result was found in the study by Mistry BS et al (2019)¹⁶ He reported that the Common aetiologies found were ischaemic heart disease (IHD), hypertension (HTN), diabetes mellitus (DM) and valvular heart disease. 50-64 year patients constituted the major age group. IHD and DM were more common in this age group. Rheumatic heart disease (RHD) was seen commonly in 20-34 year of age group.

In current study Majority of cases complained Dyspnoea on exertion (89 cases) followed by Orthopnoea in 73 cases, Pedal oedema in 67 cases, Chest pain in 56 cases, Palpitation in 49 cases, cough in 40 cases and syncope in 40 cases. Similar result reported by Gupta V et al (2019)¹⁹ He observed that the dyspnoea was most common complaint.

In current study majority of cases were discharged after treatment (81 cases), DAMA 12 cases and 7 cases death during treatment. Similar result found in the study conducted by Mistry BS et al (2019)¹⁶ He reported that the out of 84 patients, 72 were discharged, 8 took discharge against medical advice and 4 patients expired. In hospital mortality was 5.26%

Conclusions

- Heart failure was seen commonly in age group of above 70 years
- Majority of cases had a history of Hypertension
- Majority of cases complained Dyspnoea
- Hospital mortality was 7%

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