

A Study of Clinical Profile in Patients Admitted with Congestive Heart Failure in a Tertiary Care Hospital

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Abstract

Background

Heart failure (HF) is a common cardiovascular condition during this decade whose incidence and prevalence are increasing. It is a standard reason for urgent hospital admission, morbidity and mortality for the patients. Within the developed countries, CAD remains the leading explanation for HF, whereas, within underdeveloped countries, RHD remains the most typical causes of HF admission.

Materials and Methods

This was a retrospective study analysing registered data of HF admissions within the General Medicine department of Saveetha Medical College, Kancheepuram, TamilNadu. 255 patients with diagnosis of HF based on Framingham Criteria were included in the study. All patients admitted for HF management of NYHA functional class-II and above were included during this study.

Results

CAD leading to HF was found in 93 (36.5%) patients. RHD leading to valvular lesion and HF in 65 (25.5%), dilated cardiomyopathy in 37 (14.5%), hypertensive HF in 22 (8.6%) and HF due to congenital heart disease in 7 (2.7%) patients. The commonest presenting symptom was dyspnoea (81%) followed by Pedal edema (56%), fatigue (23%), elevated jugular venous pressure (34%), and hypotension (SBP < 90 mmHg) in 25%. From all patients, 89%, 64%, 51%, 16%, 48%, and 32% received loop diuretics, ACEI, digoxin, ARBs, spironolactone, and beta-blocking agents respectively.

Conclusion

CAD leading to HF was the commonest cause of HF admission in our hospital. Despite current guidelines suggesting the use of beta-blocking agents in patients with HF, only 32% of our patients received this class of medications.. To improve the outcome of these patients adherence to HF guidelines is needed.

Keywords: Heart failure, Framingham criteria, CAD, RHD, Digoxin, Diuretics, Tamil Nadu.

Introduction

Heart failure (HF) is a common cardiovascular condition during this decade whose incidence and prevalence are increasing. It is a standard reason for urgent hospital admission and morbidity and mortality for the patients. Within the developed countries coronary artery disease remains the leading explanation for HF, whereas, within the underdeveloped countries, rheumatic heart condition resulting in valvular lesion still remains the most typical causes of HF admission. 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 hospitalised with HF are quite 65 years old. burden of HF in India is additionally rising with a prevalence of 1.3million. Compared to US statistics HF patients in India are relatively younger.¹ Despite all recent developments in HF therapy, patients with advanced HF contribute to high rates of hospitalisations and mortality; additionally, HF related costs are the foremost expensive globally. India is witnessing an epidemiological transition of coronary failure compared to the recent past. While Rheumatic heart condition still tops the danger factors, others like obesity particularly Asian Indian phenotype of obesity, diabetes, hypertension, tuberculous pericarditis and

anaemia are explanation for concern. Risk behaviour like tobacco usage, sedentary life, stress got to be addressed.

Materials and Methods

Study setting and period

This was a retrospective study analysing registered data of HF admissions within the General medicine department of Saveetha Medical College, Thandalam, Kancheepuram, Tamil Nadu.

Inclusion criteria

- Both gender
- Who fulfil the Framingham criteria
- NYHA functional class-II

Exclusion criteria

- Dilated cardiomyopathy having dilated left ventricle
- With or without ventricle involvement and reduced left ventricular ejection fraction (<40 years)

Procedure

The study included a total of 255 patients fulfil the inclusion and exclusion criteria. All the patients demographic and clinical data was collected from the medical record section. The study protocol was approved by Institutional Research Committee and Institutional Human Ethics Committee.

Statistical analysis

The data was expressed in number and percentage. Microsoft Excel 2000 version used for analysis.

Results

A total of 255 patients were admitted in General Medicine department of Saveetha Medical College, with the diagnosis of HF, from March 2020 to May 2020, from which 158 (62%) people were male and 97 (38%) were female. The details of the patients are shown in Table-1. The mean age of the patients was 58 years (age ranges from 11 to 95 years). Various causes of HF resulting in hospitalization are listed. CAD leading to HF was found in 93 (36.5%) patients. Rheumatic heart disease leading to valvular lesion and HF in 65 (25.5%), dilated cardiomyopathy in 37 (14.5%), hypertensive heart failure in 22 (8.6%) and HF due to congenital heart disease was found in 7 (2.7%) patients. Although, HF due to cor-pulmonale is not usually advised to be admitted in cardiology department, 31 (12.2%) patients were admitted for the management of HF due to cor-pulmonale. The commonest presenting symptom was dyspnoea (81%) followed by Pedal edema (56%) and fatigue (23%). %, elevated jugular venous pressure (34%), and hypotension (Systolic Blood Pressure < 90 mmHg) in 25%. From all patients, 89%, 64%, 51%, 16%, 48%, and 32% received loop diuretics, angiotensin-converting enzyme inhibitor, digoxin, angiotensin receptor blocker, spironolactone, and beta-blocking agents respectively.

Discussion

HF may be a progressive clinical syndrome originating from a cardiac disorder. The ability of the heart to pump blood is impaired and fails to meet the metabolic demands of the body.³ It is caused by impaired ventricular relaxation and filling during diastole, ventricular contractile dysfunction during systole, or a mixture of both. Based on being systolic or diastolic, HF is split into two major categories. Preserved systolic function can be seen in approximately twenty to fifty percent of incident cases of HF⁴, which could be missed if diagnostic measures are not taken in clinical practice. Major causes include CAD, hypertension, valve disease and dilated cardiomyopathy, in which genetics can play a role in up to thirty percent of patients.⁵ Control of risk factors affecting the heart, like hypertension, atherosclerotic disease and DM could contribute to stop or delay the event of the disease. In fact, a relative risk reduction of twenty-nine to over fifty percent has been reported after the treatment of hypertension.^{6,7} Progression of HF is mostly altered by activation of certain neurohormonal systems like the sympathetic systema nervosum and therefore the renin-angiotensin-aldosterone system after the disease is established. The aforementioned neurohormonal systems assisting the failing heart within the short term would ultimately be related to undesired effects on myocardial function over time; hence, leading to increased hospitalization and death rates.

The results of the Framingham Study published in 1971 showed that hypertension was the commonest (75%) underlying heart disease contributing to congestive HF. In our study, however, only 8.6% of HF patients had hypertension as an underlying heart disease. In developed countries, CAD causing HF remains to be the very best reason, and that we found the similar leads to this study.

However, rheumatic heart disease leading to valvular lesion is more prevalent in this part of the world and we found 25.5% of patients hospitalized with HF had rheumatic heart disease. Heart failure, is a growing public health concern, have reached epidemic levels creating need for prevention and treatment. Angiotensin-converting enzyme inhibitors, beta-blockers, and spironolactone have been documented to improve HF patients' clinical status and survival^{8,9}, but less than half of our patients who were hospitalized with HF received beta-blockers. However, 64% of patients received angiotensin-converting enzyme inhibitors. This relatively low percentage of patients treated with beta-blockers could also be explained by the very fact that the sensible usage of the results of trials on this class of medicine is harder thanks to the very fact that beta-blockers are contraindicated in congestive HF patients for several years, and every one above-mentioned trials are newer than those been conducted on angiotensin-converting enzyme inhibitors.

Conclusion

CAD leading to HF was the commonest cause of HF admission in our hospital. Despite current guidelines suggesting the use of beta-blocking agents in patients with HF, only 32% of our patients received this class of medications. To improve the outcome of these patients adherence to HF guidelines is needed.

Conflict of interest: Nil

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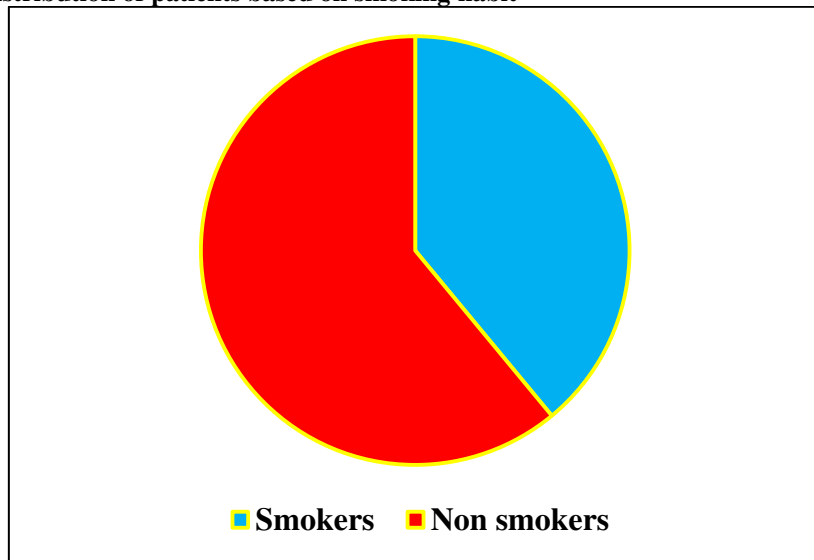
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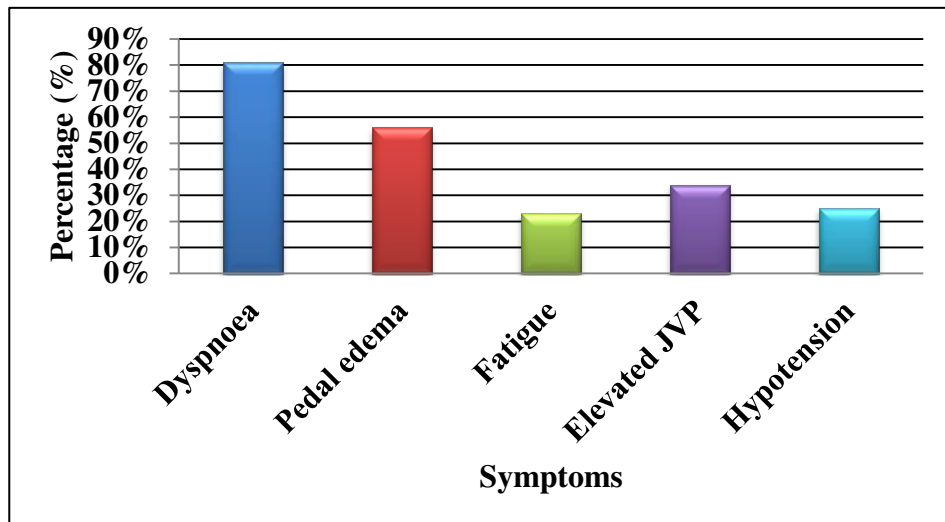
Table-1: Distribution of patients based on the demographic data

Demographic data	Number	Percentage (%)
Gender		
Male	158	61.96
Female	97	38.04
NYHA functional class		
NYHA-II	123	48.23
NYHA-III	96	37.64
NYHA-IV	36	14.17

Graph-1: Distribution of patients based on smoking habit



Graph-2: Distribution of patients based on the symptoms



Graph-3: Distribution of patients based on the etiology of heart failure

