

Factors Precipitating Congestive Cardiac Failure in Local Community

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Objective: To fine out the common precipitating factors of congestive cardiac failure in local population which vary from community to community depending upon educational status, socio-economic conditions and health-care facilities in the community. **Study Design:** Descriptive with prospective data collection. **Setting :** Medical Departments of Mayo Hospital, Lahore. **Patients and Methods:** Fifty patients having decompensated CCF diagnosed on history, clinical examination and investigations including echocardiography were included. They were thoroughly interrogated regarding various precipitating factors by history, examination and investigations. **Results:** Fifty patients, 24 males and 26 females were included, mean age was 40 years. The commonest etiology for CCF was rheumatic heart disease 44%, followed by ischemic heart disease with hypertension 24%, IHD alone 20%, cardiomyopathy 8%. The commonest precipitating factor was non-compliance with diet and drugs; (44%) followed by infections (16%) arrhythmias (16%), uncontrolled hypertension 12% anemia 8% and peripartum cardiomyopathy 4%. **Conclusion:** Majority of the precipitating factors of CCF like non-compliance with drugs or diet can be prevented by better patients health education.

Key words: Congestive Cardiac Failure, Precipitating Factors, Etiology.

Heart failure is a major public health problem in industrialized as well as in 3rd world countries. It appears to be only common cardiovascular condition that is increasing in prevalence and incidence. In USA it causes one million hospital admission and 40,000 deaths annually¹.

Congestive Cardiac Failure (CCF) is a common final pathway in majority of the heart diseases. Majority of the patients of CCF have underlying ischemic, hypertensive, rheumatic heart disease or cardiomyopathy. These patients are well compensated with treatment either drugs or dietary in nature. Any kind of fresh insult or increase demand leads to decompensation. It is very important that just management of CCF with diuretics, vasodilators and inotropes is not sufficient, recognition and correction of precipitating factor is utmost important².

These precipitating factors vary from community to community depending upon health education status of the community, socio-economic conditions of the community. In communities having poor health education status, poor compliance to diet and drugs should be the most frequent precipitating factor where as in developed communities, reinfarction or ischemia, arrhythmias and infection may be important factors precipitating CCF. In order to find out common precipitating factors in our community this study was designed.

Material and methods

This is a descriptive study with prospective data collection.

Fifty patients having congestive cardiac failure presenting with decompensation were included, diagnosis of CCF was made on following grounds.

History and clinical examination: Detailed history regarding chest pain, hypertension, rheumatic heart disease, recent pregnancy was taken. Also the history of dyspnea resting and exertional, orthopnea, PND, fatigue, weakness was also taken. A thorough history regarding

precipitating factors e.g. compliance to diet and drugs, any fever, infections like chest infection or UTI, any history of fresh chest pain, palpitation, I/V drip, intake of new drug causing myocardial depression or causing salt water retention and regarding symptom of thyrotoxicosis was taken. On examination, raised JVP, enlarged tender liver, peripheral oedema, 3rd or 4th heart sounds, fine basal crepts were looked especially. Investigations especially ECG, X-ray chest, echocardiography blood and urine complete, urea S/creatinine, thyroid function test if indicated, were carried out.

Inclusion Criteria

1. Patient diagnosed to be having decompensated CCF.
2. All patient above the age of 12 years.

Exclusion Criteria

1. Patients below 12 years of age.
2. Patient having adult respiratory distress syndrome.
3. Patients having Cor. Pulmonale.

Data was collected on proforma and was analysed using SPSS ver 10.

Patients were collected from all four medical units of Mayo Hospital, Lahore.

Results

Fifty patients were included 24 were males and 26 females, mean age was 40 years. On the basis of Echocardiography various etiologies of CCF in 50 patients are given in table 1. In 22 patients underlying cause was rheumatic heart disease, in 10 patients ischemic heart disease along with hypertension and in another 10 patients ischemic heart disease alone was responsible, cardiomyopathy was responsible in 4 patients.

Various precipitating factors of CCF are given in table 2. The commonest factor was non-compliance to diet and/or drugs followed by infections, arrhythmia uncontrolled hypertension, anemia and peripartum cardiomyopathy.

Table 1. Underlying etiology of heart failure (n=50)

Underlying Cause	n=	%age
Rheumatic heart disease	22	44
Ischemic and hypertensive heart disease	12	24
Ischemic heart disease alone	10	20
Cardiomyopathy	4	8
Pericardial effusion	2	4

Table 2. Common precipitating factors of heart failure (n=50)

Precipitating factor	n=	%age
Non-compliance with diet and drugs	22	44
Infections	8	16
Cardiac Arrhythmias	8	16
Uncontrolled hypertension	6	12
Anemia	4	8
Peripartum Cardiomyopathy	2	4

Discussion

Fifty patients suffering from decompensated CCF were included in this study. In our study mean age was 40 years which is in contrast to Romos Polledo V et al³, where mean age was 73.6 ± 10.8 years, reason being in our study more patients with rheumatic heart disease were included which causes presentation at earlier age where as causes like IHD or hypertension causes late presentation.

In our study 52% patients were female and 48% were male. In our study the commonest underlying etiology of CCF was rheumatic heart disease 44% which is quite comparable with similar data collected from India, showing 52.8% by Joshi et al⁴. Romos Polledo V et al³ showed 38.8% of their patient were having rheumatic heart disease as a case of CCF.

In our study IHD and hypertension were underlying cause in 24% of their cases, which is comparable to Joshi et al showing 27.2% cases having same etiology. IHD alone was responsible in 20% of our cases, same figure 21.6% is reported by another study⁽³⁾. Same was true for cardiomyopathies showing almost 8% incidence in both studies. As for as various precipitating factors are concerned non-compliance with diet and/or drugs was most common precipitating factor responsible in 22 (44%) patients. Data reported by Joshi et al 49.6% of their cases were having non-compliance with diet and drugs.

Ghali JK et al⁵ reported that 22% their patients were non compliant to diet alone, 6% were non compliant to drugs alone and 37% were non compliant to both drugs and diet, making overall 65% patients having non compliance as causative factor.

Another study by Tsuyuki RT et al⁶ shows that just non compliance with salt is responsible for precipitation of CCF in 22% cases, and non compliance with medication is responsible for another 15 % of their cases, similar result has also been shown by Opasich C et al⁷.

We concluded that key preventive measure necessary in at least two third of patients centered around better adherence to drug and diet regimen highlighting the precept that better patients education is mandatory if we

want to minimize the number of hospital admissions for decompensated heart failure.

The second common factor precipitating CCF in our study was infections (table 2), particularly respiratory and urinary tract infection responsible in 8(16%) of cases. This data is quite comparable with other studies showing 11.2%, 12%, 20% and 12% cases respectively^{4,5,6,7}.

The relatively high percentage of the cases can be attributed to changing microbial pattern of resistance to antibiotics, delay on the part of patients to start treatment and poor nutritional status of patients in our community.

The third most important factor precipitating CCF in our study was arrhythmia particularly atrial fibrillation 8(16%) cases. This is also compatible with international data^{6,8}. Uncontrolled hypertension was responsible in 6(12%) cases and anemia was the factor in 4(8%) cases which is a bit low than international data showing 14.4% and 13.2% incidence^{4,8}.

Conclusion

Non-compliance to drug or diet is the leading cause of exacerbation of heart failure followed by infection, arrhythmia, uncontrolled hypertension and anemia. Majority of these factors can be tackled by better patient's education, early detection and treatment of precipitating cause.

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