

Precipitating Factors of Acute Decompensated Heart Failure in Hospitalized Patients in Cardiology in Burkina Faso

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Keywords: Heart failure, factors of decompensation, Burkina Faso

ABSTRACT

Introduction

Heart failure is a common health condition in the course of which many acute episodes of decompensation may occur and require hospitalizations.

The objective of this study is to identify the precipitating factors of acute decompensated heart failure in hospitalized patients.

Patients and methods

We conducted a transversal and descriptive study at the Inpatient cardiology unit from May 2014 to December 2014. All patients over 15 year of age, under treatment for previously diagnosed heart failure, and hospitalized for acute decompensated heart failure were enrolled.

Results

We enrolled a total of eighty one (81) patients. Mean age was 56.25 years with extremes of 21 and 85 years. Sex ratio was 1.07. Patients with permanent job and regular income accounted for 8.6% of cases. Underlying heart diseases were hypertensive cardiomyopathy in 37% of cases and rheumatic valvular diseases in 26% of cases. No precipitation factor was identified in 13.6% of cases. Noncompliance with treatment was noticed in 65.4% of cases and 12% of patients were out of medications due to: lack of financial resources (60.4%), and abatement of symptoms (15.8%). Other precipitating factors were rhythm disorders (39.5%), conduction disorder (4.9%) and infection (27.2%). Lung infections (54.5%) and urinary tract infections (18%) were predominant. Anemia was reported in 35.8% of cases.

Conclusion

Diagnosis of heart failure implies proper therapeutic follow up from health professionals and good compliance to treatment from patients.

INTRODUCTION

Heart failure is a chronic, complex, and severe condition which can highly impact patients' quality of life. Heart failure remains the outcome of most cardiac diseases.

The course of the disease is marked by episodes of acute decompensated heart failure leading to several hospitalizations and high mortality. Heart failure affects 15 millions individuals worldwide [1]. According to the European society of cardiology, 2 to 3% of Europeans are affected [2]. In 2010, 23,882 deaths primarily from heart failure were reported in France [3]. In Sub-Saharan Africa, few epidemiologic and mortality data were extracted from hospitalizations sources [3-5].

Heart failure represents 3 to 7% of hospital admissions in several English speaking African countries [6].

A study looking at seven French speaking African countries, found that 27.5% of hospitalized patients for acute decompensated heart failure were classified New York Heart Association class IV [7].

The precipitating factors of acute decompensated heart failure can be patient-related such as the non-compliance with medications or diet, but also to the degree of myocardial alteration in advanced heart failure. Other factors are unpredictable though such as an arrhythmia and concurrent diseases.

The goal of our study is to identify the factors of acute decompensated heart failure in hospitalized patients for acute decompensation of chronic heart failure in the cardiology service.

METHODOLOGY

Our study is a transversal and descriptive study at the inpatients cardiology unit from May 2014 to December 2014.

We included all patients over 15 years of age hospitalized for acute decompensated heart failure, who were previously diagnosed with chronic heart failure and under treatment

Data were collected through patients' interviews and after obtaining their consent.

Other data were obtained from inpatients chart review and ambulatory care follow-up booklet.

We collected epidemiologic and clinical data, data from the underlying heart disease and the length of the disease course, as well as the treatment received. The compliance with treatment was assessed through a six questions survey created by Girerd. We also inquired about life style and type of diet followed. The clinical presentation upon admission and the factors of acute decompensation were also noted.

All the data were analysed with the software Epi-info version 7.

RESULTS

Eighty one (81) patients were enrolled in the study. During the study period, the inpatients prevalence of heart failure was 53.08% and 28.5% of hospitalizations were attributed to acute decompensated heart failure in patients already diagnosed and being treated for heart failure. Out of the 81 patients, 42 were male (51.9%) and 39 female (48.9%). Sex ratio was 1.07. Mean age was 56.25 years ranging from 21 to 85 years old. 53.08% of patients were above 60 (Table 1). The majority of patients lived in urban area (79.7%) and 20.3% were from rural areas. 61.7% of patients had never been to school. 16% of patients' education level was elementary school and only 4.9% went to college. All the socio-professional categories were represented; patients who had a permanent employment with a fixed and regular monthly income accounted for 8.6% of cases.

Table 1: Age distribution of patients

Age	Numbers (n)	Percentages (%)
[20-30]	7	8.6
[30-40]	13	16
[40-50]	10	12.4
[50-60]	8	9.9
[60-70]	20	24.7
[70-80]	16	19.8
> 80	7	8.6
Total	81	100

The majority of the population (72.8%) had a monthly income of less than 60euros (40.000F.CFa). 22.2% of the population had an income ranging from 60 to 150euros (40.000 to

100.000F. CFa) and 5% earned more than 150euros a month.

The cardiovascular risk factors identified were hypertension in 35% of cases, Diabetes Mellitus in 2.5%, Tobacco 11% and dyslipidemia 7.5%. An excessive alcohol intake was noted in 13.6% of cases. Chronic renal failure was found in 43.21%.

All our patients were followed and received the heart failure regiment which included a diuretic, an angiotensin-converting enzyme inhibitor or an antagonist II receptor antagonist, an antiplatelet or an anticoagulant, and an aldosterone antagonist (spironolactone) in ambulatory care. No beta blocker was used in the treatment. Thirty percent (30%) of patients were on digitalis and 10% on nitrate therapy.

The average duration of chronic heart failure was 20 months, ranging from 1.6 years to 5.9 years. Sixty three percent (63%) of patients were known and followed for chronic heart failure for at least 12 months.

The average number of hospitalizations for acute decompensated heart failure was 0.84, ranging from 1 to 3 hospitalizations.

The underlying heart diseases were hypertensive cardiomyopathy in 37% of cases, rheumatic valvular diseases in 26% of cases, ischemic cardiomyopathy is 12.3%, idiopathic dilated cardiomyopathy in 9.9%, myocarditis in 6.2%, postpartum cardiomyopathy in 3.7%, chronic cor pulmonale in 3.7%, and toxic cardiomyopathy in 1.2%.

The mode of decompensation was congestive heart failure in 93.8% and right heart failure in 6.2% of cases.

The average ejection fraction was 38%, ranging from 10 to 70%. 49.4% of patients had a severe systolic heart failure with a left ventricle ejection fraction less than 35%. 8.5% of patients with heart failure had a preserved ejection fraction.

Among our patients, 3.7% were diagnosed with depression according to the Hamilton scale, 2.5% had mild depression, and 1.2% moderate depression. None of the patients had a severe depression.

No factor de decompensation was identified in 13.6% of cases.

Low salt diet was followed by 34.6% of patients and no salt diet in 21%.

A non-compliance with treatment was found in 65.4% of cases and a discontinuation of treatment in 23% due to financial reasons in 60.4% of cases and improvement of the symptoms in 15.8% of cases ([Table 2](#)).

Table 2: The causes of non-compliance or discontinuation of treatment

Reasons of noncompliance with medications or discontinuation of therapy	Percentage
Financial reasons	60.4%
Improvement of symptoms	15.8%
No reasons	13.2%
Lack of understanding of prescriptions	5.7%
Occurrence of other diseases	3.8%
Medications unavailability	1.9%

An acute decompensation of heart failure was also precipitated by the onset of an arrhythmia in 39.5% of cases, and a conduction disturbance such as a complete auriculo-ventricular block in 4.9%. The types of arrhythmias encountered were an atrial fibrillation in 71.8% and an atrial flutter in 12.5%.

We found an acute renal failure in 32%, an acute coronary syndrome in 2.46% and a pulmonary embolism is also 2.46% of cases.

An infection was the precipitating factor in 27.2% of cases, lung infection in 54.5% and urinary in 18% of cases.

An anemia was implicated in 35.8% of cases, moderate in 29% of cases, and severe in 13%.

DISCUSSION

The prevalence of heart failure increases in sub-Saharan Africa [[5](#), [7-10](#)]. We found that the prevalence of heart failure in hospitalized patients was 53.08% and 28.5% were secondary to an acute decompensation of heart failure in patients known with heart failure and undergoing treatment and follow up. The sex ratio, 1.07 tends to equilibrate. The relatively younger mean age compared to Europeans data [[8](#)], could be explained by the prevalence of rheumatic heart disease and postpartum cardiomyopathy in Africa

[5, 9, 10]. All the socio-professional categories were represented, with half of the patients who have never been to school. The majority of patients with acute decompensated heart failure had limited socio-economic resources, with only 8.6% of patients who had regular income and 72.8% earning less than 60 euros a month.

The most common underlying heart diseases, after the hypertensive cardiomyopathies, were the rheumatic valvular heart diseases which occur in sub-Saharan Africa during young age and progress to chronic heart failure in the absence of heart surgery or interventional cardiac procedures. In Europe, coronary artery diseases are among the most frequent etiologies of heart failure [8].

Non-compliance with medications or discontinuation of therapy was respectively found in 65.4% and 44.4% of cases mainly due to financial reasons with the limited socio-economic resources noted in our population. Those results are also supported by the literature [11]. Patients and their relatives' education on the chronicity of heart failure, the importance of hygiene and diet as well as the importance of medications compliance remain crucial.

The precipitating factors of acute decompensated Heart failure, which are at times not patients-related such in the case of arrhythmia, could sometimes be triggered by a discontinuation of treatment. Infections and anemia could also be linked to the poor socio-economic status of the populations. In our patients population also, the degree of myocardial alteration was severe leading to an advance heart failure with frequent episodes of acute exacerbations.

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CONCLUSION

Heart failure is a frequent, severe and costly disease. It leads to frequent hospitalizations, affects the quality of life of patients and induces a loss of autonomy. It is a major public health issue for which a new model of care is needed. Patient's education is a continuous process, should be patient-centered, and help patients reconciling with their disease, the requirements of the treatment, and their quality of life, all this supported by an improvement of the living standards of the populations.

CONFLICTS OF INTEREST

The authors have not reported any conflict of interest

WHAT IS ALREADY KNOWN ABOUT THIS TOPIC

- The facts on the precipitating factors of acute decompensated of heart failure
- The challenge to often identify them.

WHAT DID WE LEARN FROM OUR STUDY

- The precarious socio-economic status often leads to acute decompensation of heart failure in Africa.
- The risk factors can be identified if efficiently assessed.
- The relatively young age of our patients is related to the rheumatic etiology

CONTRIBUTION OF AUTHORS

We certify that all the authors actively participated to the article.

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