

The Peri-Partum Cardiomyopathy in the Cardiology Department of Chu Gabriel Touré of Bamako

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ABSTRACT

Aim: To study the prevalence of peripartum cardiomyopathy (PPCM) in the cardiology department of Gabriel Touré University Hospital Center in Bamako.

Material and Methods: This was a retrospective study, conducted over a 5-year period, from January 2011 to December 2015 and included all women hospitalized for either congestive heart failure or left-sided heart failure in the cardiology department of CHU Gabriel Touré.

Results: From January 2011 to December 2015, 1933 patients were hospitalized in the cardiology department of CHU Gabriel Touré. Among them, 1154 women with heart failure, including 132 cases of peripartum cardiomyopathy, a prevalence of 6.8% of hospitalizations and 11.4% of women hospitalized for heart failure.

Conclusion: Peripartum heart failure is a particular impaired maintenance due to its target population (reproductive age and childbearing women) and its context. Its support requires close collaboration between several specialists. Its prevention can be considered if the management of certain factors such as anemia and malnutrition is effective in this target population during antenatal consultations. Good coverage of family planning could be beneficial for the prevention and management of recurrence.

Keywords

Cardiovascular diseases, Pregnancy, Chu Gabriel Touré, Sinus.

Introduction

Cardiovascular diseases currently account for 30% of all deaths worldwide. These deaths concern developing countries (PEVD) in 80% of cases. Heart failure is one of the main circumstances in which these diseases are discovered, often at an advanced stage [1]. Cardiomyopathy of the peripartum is defined as a clinical picture of heart failure (CL) secondary to left systolic dysfunction occurring between the last month of pregnancy and the fifth month

after childbirth [2]. It resembles dilated cardiomyopathy (DMC) but differs in a highly variable course, from rapid progression, often within a few days or weeks, to end-stage heart failure with high mortality and recovery that can be complete even in straightaway apparently serious forms [3]. The impact of PPCM is estimated at 1 per 3000 to 4000 deliveries in the United States of America.

The highest impact in Africa is in the Sudano-Sahelian zone [4,5]. In the West African region of Burkina Faso, it accounted for 2% of cardiovascular diseases in 1991 according to a study conducted in the Department of Internal Medicine of the National University

Hospital Center of Yalgado Ouedraogo (CHU YO).

In Mali, a thesis presented and in 2004 at the cardiology department at the Sikasso Regional Hospital reported a prevalence of 56.7% (22/41 cases) of CMPP in women hospitalized for heart failure in a peripartum context [68].

Materials and Methods

This was a retrospective study, carried out over a period of 5 years, from January 2011 to December 2015. All women hospitalized for global or left heart failure, in the cardiology department of CHU Gabriel Touré; in whom echocardiography showed LV systolic dysfunction in a peri-partum context with or without left ventricular dilatation, were included.

Results

The 20-29 age group was the most represented in our study at 46.1%. Twin pregnancy was found in 15.4% of our patients. The majority of our patients reported their symptoms one month after delivery (59.6%), and all our patients experienced 100% dyspnoea exertional. Shock spike was present in 31 patients, 59.6%. In addition, 94.2% of our patients had Tachycardia, followed in 71.2% of cough rattles at both lung bases. The presence of gallop rhythm (B3) was effective in 55.8%. At the electrocardiogram, 5.8% of our patients presented an irregular and non-sinus rhythm with a deflected axis of 28.8%. Sinus tachycardia was reported in 94.2% of cases. Nonspecific depolarization disorders were found in 25% of our patients. Hepatomegaly was found in 73.1% of patients. It was associated with ascites in 53.8%. On chest X-ray 100% had cardiomegaly and 59.6% had pleurisy. Left ventricular hypertrophy was present in 50% of our patients on the electrocardiogram. All of our patients (100%) had left ventricular and left atrium dilation while 50% had a significant alteration of ejection fraction. Only one patient (1.9%) had left intra-cavity thrombus. The majority of our patients had anemia (57.7%). The other biological disturbances during the study were mainly hypokalemia and hyponatremia-type ion disorders in 17.3% of our patients. We had functional renal failure in 7.7% of our patients. After 3 months of follow-up, we lost sight of 12 patients (23.1%). The large majority of patients (75%) had no functional or auscultatory signs. All our patients received a diuretic and an of the converting enzyme inhibitor (A.C.E). Only 25% of our patients received spironolactone. Besides, 50% of the patients received a beta blocker. Nitrates were used in 23.1%; pressor amines in 11.5% digoxin in 23.1% and low molecular weight heparins only in 5.8%. Only one patient had cardiomyopathy refractory to all treatments. Progress was positive in 94.2%. We observed three cases with complications during hospitalization (5.8%); respectively a case of stroke, a case of atrial fibrillation and a case of death.

Discussions

We observed a prevalence of 6.8% of CMPP in hospitalization. This high prevalence is very common in our countries. Some authors report higher rates [6,7], but others find a lower rate [8]. These differences could be explained by the size of our samples and the duration of the studies. The majority of our patients came

from rural areas and did a lot of physical work during pregnancy (57.7%). This could be related to their socio-economic level, which was mostly low in our study. The age group 20-29 was the most represented in our study with 46.1%, this can be explained by the fact that at this age they are multiparous women because of the early marriage practiced in our countries. Multiparity is considered as a factor favoring the CMPP [9-12].

Most of our patients were married, illiterate women doing only housework and field work, 94.2%. This raises the question of the participation of intense physical labor during pregnancy as a factor favoring this pathology.

Twin pregnancy was found in 15.4% of our patients, the same finding is made by authors with sometimes different proportions even in the American continent [13,14].

The first signs of the disease occurred one month after delivery in 59.6% of patients. Many authors report the same beginning mode with sometimes different rates [6,11,12,15,16]. A dyspnoea exertional was found in all our patients, 100%. This finding was also made by these same authors. This can be explained by the fact that dyspnoea exertional is one of the first signs of left heart failure and also this sign is most often the reason for complaint.

Hepatomegaly was found in 73.1% of patients and was associated with ascites in 53.8%. This combination is the indicator in the context of heart failure advanced stage. Similar findings were made in the cardiology department of the Point-G Hospital [6].

The presence of gallop rhythm (B3) was effective in 55.8%. In similar studies, smaller proportions have been reported locally [6,11].

Cardiomegaly x-ray was found in all our patients who could perform this examination. This constancy of cardiomegaly x-ray is not always found in some studies conducted in sub-Saharan Africa [6,12,17,18,]. In all cases this aspect seems to indicate an advanced stage of the pathology.

In terms of the electrocardiogram 94.2% of our patients had sinus tachycardia; Dioma at the G point found 81.8% [6]. This tachycardia may also be explained in this context by the very common association in the study of anemia.

Left ventricular hypertrophy was present in 50% of our patients; Dioma reported 63.6% in another hospital in Bamako. Non-specific repolarization disorders were found in 25% of our patients, which is in agreement with the results of some authors [2].

2cocardiogram found left ventricular dilatation in all our patients and significant systolic dysfunction in 50% of cases and left intra-cavity thrombus. Dioma and Coulibaly reported a higher rate of intra-cavity thrombus [6,11]. This could be explained by the more frequent presence of severe systolic dysfunction in these studies because the two study populations seem to be super imposable in

many ways.

The anemia found in 57.7% of our patients could be due to a nutritional deficiency but also to bleeding that may occur during pregnancy, especially during delivery, particularly because prenatal cares in most our patients were not properly done [19-21].

We recorded functional renal impairment in 7.7% of our patients most probably related to a significant decrease in cardiac output seen on patients' Doppler echocardiography. The other biological disturbances during the study were mainly hypokalemia and hyponatremia-like ion disorders in 17.3% of our patients.

These ionic disorders could be explained by the high dose diuretic treatment that our patients received during the congestive phase of their heart failure. The average length of hospitalization was two weeks in the unit. We consider this length of hospitalization to be righteous because the patients arrived in an advanced heart failure picture. In the series, rest and a dietary salt restriction were observed by all our patients. Diuretics were primarily used in all our patients (100%) in agreement with the literature [6,11].

As for the inhibitors of the converting enzyme (I.E.C), they were used in all our patients with a careful introduction in those who had an elevation of the creatinemia. Only 25% of our patients received spironolactone and this molecule was administered when patients had the means to control serum creatinine and serum potassium during their follow-up. Beta-blockers were used in patients who had endurance to these molecules, so only half or 50% of the patients in our study received beta-blocking treatment with sometimes insufficient doses. This could be explained by the hospitable nature of the treatment that could be optimized after the exit.

In the series, the use of nitrates was reserved for patients who had presented a picture of flash pulmonary edema. For this purpose 23.1% of the patients received a nitro derivative in this study and this treatment was consistently associated with the diuretics. Vasopressin amines, such as dobutamine, were administered in cases of absolute emergency in patients who presented a cardiogenic shock or a low-flow state that was refractory in usual treatment during hospitalization. They were administered in 11.5% of the patients.

Digitalis was used in 23.1% of patients with severe supraventricular tachycardia and also with acute atrial fibrillation (AC/FA). Low molecular weight heparins (LMWH) were relayed by the vitamin K antagonist in 5.8% of our patients with complete arrhythmia with persistent atrial fibrillation also when there was the presence of an intra-cavity thrombus at the same time in echocardiography.

The intra-hospital evolution of the disease was favorable for 94.2% of our patients. This confirms the good prognosis attributed to this affection by the literature. We recorded ischemic stroke (A.V.C) complications in one patient; persistent CA / FA in another, which justifies, according to the authors, the use of long-

term anticoagulant therapy in this condition [8,19,20]. One case of death was recorded in a context of refractory heart failure.

Conclusion

Peri-partum heart failure is defined by its target population (reproductive age and childbearing women), and its context as a particular disease entity. The CMPP is the primary cause of heart failure associated with pregnancy and sometimes constitutes a diagnosis of elimination. Its support requires close collaboration between several specialists. Its prevention can be considered if the management of certain factors such as anemia and malnutrition is effective in this target population during prenatal consultations. Good coverage of family planning could be beneficial for the prevention and management of recurrence.

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