Research Article

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Peripartum Cardiomyopathy: Epidemioclinical, Therapeutic and Evolutionary Aspects in the Cardiology Department of the Kati University Hospital

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Abstract

Objectives: Peripartum cardiomyopathy (PPCM) is the occurrence of congestive heart failure in the preceding month and five (5) months following delivery in the absence of previously known cardiovascular disease or risk factors.

The aim of this work was to study its epidemiological-clinical, paraclinical, therapeutic and evolutionary aspects.

Methods: This was a descriptive cross-sectional study from January 2016 to December 2023 in the cardiology department of Kati University Hospital. Any woman admitted for heart failure between the eighth month of pregnancy and the first five months postpartum without an etiology found and a dilated cardi omyopathy found on echocardiography was included.

Results: In our study, the prevalence of CMPP was 25.3%. The average age was 28.4±7.9 years. More than half of the patients were multiparous. Symptoms began mainly in the postpartum period (73%). The average treatment time was 61.8 ± 49.8 days. Dyspnea was present in all patients. The central signs were dominated by tachycardia (92.1%) and the peripheral signs by turgor of the jugular veins (77.8%). Global heart failure (77.8%) was its main mode of expression. Sinus tachycardia (80.0%) was the dominant electrical sign. Global hypokinesia, left ventricular dilation and systolic dysfunction were the main echocardiographic abnormalities. His treatment was for heart failure. The evolution was favorable in 96.8%.

Conclusions: This is a common pathology characterized by a delay in diagnosis and a generally favorable outcome.

Keywords

Peripartum cardiomyopathy, Epidemio-clinical, Therapeutic, Evolution.

INTRODUCTION

Peripartum cardiomyopathy (PCM) is defined as the onset of congestive heart failure in the month before and five (5) months after delivery in the absence of previously known cardiovascular disease or risk factors [1]. The aetiology of this condition is still poorly understood, hence its name of idiopathic or primitive cardiomyopathy [2,3]. Diagnosis is based on the presence of Doppler echocardiographic signs showing LV systolic function dysfunction of 45% or less [1]. Its global incidence is estimated at 1 to 3 per 4000 births, with considerable geographical variability. In developed countries, it accounts for less than 1% of pregnancy-related cardiovascular disorders [3,4].

In Africa, its frequency varies from one region to another. In Nigeria, its incidence was estimated at 1/100 births [5] and 1/2687 births in Côte d'Ivoire [4]. In Parakou (Benin), it accounted for 9.9% of cardiovascular diseases in 2016 [6] and its incidence was 1/362 births according to Pio [7].

In Mali, its hospital prevalence also varies according to the studies, from 6.8% according to Menta [8] to 18.4% according to Coulibaly [9]. The lack of data in our setting (Kati University Hospital) prompted this study, the aim of which was to examine the epidemiological, clinical, paraclinical, therapeutic and evolutionary aspects of this condition.

METHODOLOGY

This was a descriptive cross-sectional study from January 2016 to December 2023 (8 years) in the

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cardiology department of Kati University Hospital.

Inclusion criteria
All women admitted to the department for heart failure between the eighth month of pregnancy and the first five months postpartum without any etiology found and diagnosed with dilated cardiomyopathy on transthoracic Doppler echocardiography were included in this study.

Non-inclusion criteria
Any woman with heart failure of unknown cause before the eighth month of pregnancy or after the first six months postpartum or of known cause during this period had not been included.

Data Collection
Data were collected on a pre-established individual survey form including socio-demographic data, gynaeco-obstetric history, mode and course of delivery, history of the disease, clinical and paraclinical data especially trans-thoracic Doppler echocardiography (DTDVG > 32mm/m^2, LVEF ≤ 45%), treatment and hospital course.

Data entry and analysis were performed using IBM SPSS statistical version 21. Qualitative variables were expressed as proportions and quantitative variables as means.

Ethical Considerations
Given the retrospective nature of the study, patient consent was not obtained, but anonymity, confidentiality and medical secrecy were maintained throughout.

RESULTS
During the study period, we recorded 63 cases of in-patient CMPP, i.e. 7.8 cases per year. This represented 25.3% of heart failure cases.

More than 60% of patients were aged 31 years or less, with a predominance between 16 and 23 years of age. The mean age was 28.4±7.9, with extremes of 16 and 50 years (Figure 1).

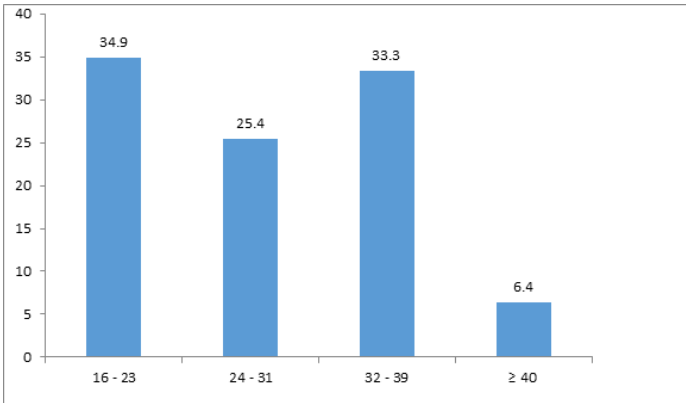

Figure 1: Breakdown of patients by age group.

The majority of patients (85.7%) were housewives. Thirty-seven of the patients (58.7%) lived in urban areas.

Just over 56% of patients were multiparous. The average number of children per patient was 3.6 ± 2.6, with extremes of 1 and 11 children (Figure 2).

Symptoms began mainly in the postpartum period (73%). Management took place between 1 and 3 months after the onset of symptoms in 54.8% of cases, with an average delay of 61.8 ± 49.8 days (extremes 7 and 240 days).

Dyspnoea was the main symptom, as it was observed in all our patients (90.5% of whom were stage III and IV), followed by cough (71.4%). Tachycardia dominated the physical signs with 92.1%, followed by jugular turgidity (77.8%). Nearly 78% of our patients were found to have congestive heart failure compared with 22.2% with left heart failure.

Sinus tachycardia (80.0%) was the most common electrical sign, followed by non-specific repolarisation disorders (68.8%) and left ventricular hypertrophy (46.7%). Cardiomegaly was observed in all our patients who had an en face chest X-ray (Table 1).

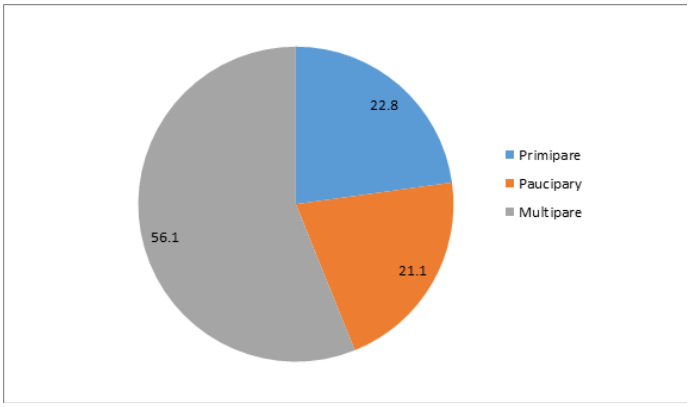

Figure 2: Distribution of patients according to obstetrical history.

Table 1: Distribution of patients according to clinical data.

Données cliniques		Effects (n = 63)	Percentage
Symptom onset period	Pre-delivery	17	27,0
	Postpartum	46	73,0
Time to take charge	≤ 1 month	15	24,2
	1 - 3 months	34	54,8
	≥ months	13	21,0
Functional symptoms	Dyspnoea	63	100
	Cough	45	71,4
	Palpitations	35	55,5
	Atypical chest pain	10	15,9
	Asthenia	5	7,9
	Other*	4	06,4
Physical symptoms	Tachycardia	58	92,1
	Heart murmur (MI)	30	47,6
	Gallop	26	41,3
	Crackling rales	29	46,0
	Jugular turgidity	49	77,8
	Hepatomegaly	48	76,2
	Hepato-jugular reflux	48	76,2
	Oedema of the lower limbs	44	69,8
	Ascites	5	07,9
	Other*	7	11,1
Syndromes	Congestive heart failure	49	77,8
	Left heart failure	14	22,2

Other: vertigo = 2, hemiplegia = 2*
*Other**: hemiplegia = 2, aphasia = 2, pleurisy = 2, MID gangrene = 1*

All patients had global hypokinesia, left ventricular dilation and systolic dysfunction (Table 2).

Table 2: Distribution of patients according to transthoracic Doppler echocardiography data.

Transthoracic Doppler echocardiography		Effects (n=63)	Percentage
Hypokinesia		63	100
Dilatation of the left ventricle		63	100
Systolic dysfunction	Moderately (46-49%)		100
	Medium (30-45%)		
	severely (< 30%)		
High filling pressures		28	44,4
Dilated left atrium		24	38,1
Pulmonary hypertension		24	38,1
dilated right ventricle		10	15,9
Dilated right atrium		06	09,5
Intra-VG thrombus		04	06,3
Epanchement péricardique		03	04,8

During the course of the disease, 34.9% of complications occurred and the case fatality rate was 03.8% (Table 3).

Table 3: Distribution of patients according to outcome.

Evolution	Effects (n=63)	Percentage
Favorable	61	96,8
Complications	22	34,9
Death	02	03,8

Acute Renal failure (ARF) with 45.4% was the most common complication, followed by left ventricular thrombus (31.8%) (Figure 3).

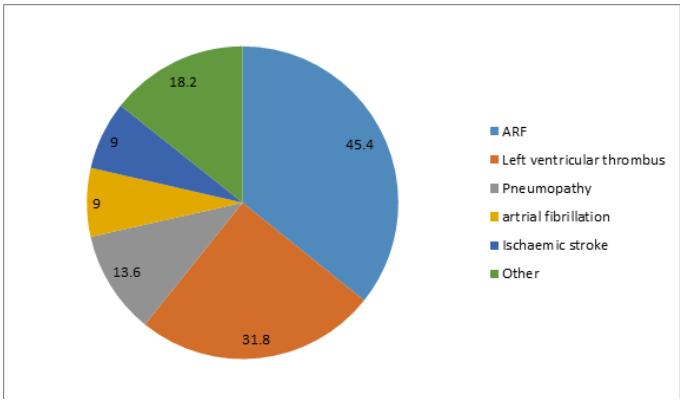

Figure 3: Distribution of patients according to complications. Other: pulmonary embolism=1, pneumothorax=1, gangrene of the right lower limb gangrene=1, pleurisy=1.

DISCUSSION

Epidemiology

Peripartum cardiomyopathy, with a non-negligible mortality rate, is diagnosed late in our context.

During the study period, we recorded 63 in-patient cases of PPCM, i.e. 7.8 cases per year. The mean age was 28.4 ± 7.9 years (extremes 16 and 50 years). This result is similar to those of other African series [7,10-13]. More than 60% of patients were aged 31 years or less, with a predominance between 16 and 23 years (34.9%), in line with the study by Maliki [11] where 66.7% of patients were aged 30 years. These results reveal the young age of patients in our sub-region.

More than half (56.1%) of the patients were multiparous. This is in line with other African series, where it concerned 82.9% of cases in Pio [7], 70.4% in Touré [10] and 79% in Maliki [11]. The mean number of children per woman was 3.6 ± 2.6 (1 and 11). Similar findings were reported by other authors with 3.1 children for PiO [7], 3.1 for Touré [10] and 3.4 for Manga [13]. Multiparity has been described in several studies as a factor favouring CMPP [7,11]. This multiparity in young patients could be explained by the early marriage which is rampant in our society on the one hand and on the other hand the low coverage of family planning in our countries. The majority of patients were housewives, i.e. 85.7%, in line with the West African literature [9,11,13]. This is not surprising given that this is the occupation of most women in our sub-region.

Clinical Aspects

The first signs occurred mainly (73.0%) in the post-partum period. The same observation was made by Touré [10], COULIBALY [9] and Maliki [11] with 85.9%, 65% and 67% respectively. Our patients consulted us on average 61.8±49.8 days (7 and 180 days) after the onset of symptoms. The average delay was 30 days for Touré (6-120 days). This delay in treatment could be explained by the fact that there is confusion between the symptoms of the disease and those of the post-partum period.

Over 78% of our patients had consulted a specialist for congestive heart failure. This proportion was 81.2% for Touré [10], 70.8% for Maliki [11] and 87.5% for Manga [13]. Dyspnoea was the main symptom, as it was observed in all our patients, 92.2% of whom were at NYHA stage III-IV. This is in agreement with other series [8-11]. Auscultatory signs were dominated by tachycardia with or without gallop rhythm (92.1%), a murmur of mitral insufficiency (47.6%) and crepitus rales (46.0%). The same observation has been made by other African authors but in different proportions [7,14-16].

Paraclinical Examinations

Sinus tachycardia (78.8%) was the main electrical sign, followed by non-specific repolarisation disorders (69.7%) and left ventricular hypertrophy (60.6%). These same abnormalities have been reported in other African studies [7,17-19]. This could be explained by the delay in management of our patients.

Cardiomegaly was observed in all our patients who underwent frontal chest radiography. This is consistent with Manga [13] and Menta [8]. This is further evidence of the late management of these patients. On the other hand, our proportions are higher than those of Pio [7] and Coulibaly B [9], respectively 95.1% and 60%. Doppler echocardiography data are part of the diagnostic criteria for the disease. The abnormalities found were global hypokinesia of the left ventricle, dilatation of the left ventricle and systolic dysfunction in all our patients. This is consistent with the data in the African literature [7,8,10]. Filling pressures were elevated in 44.4% of cases, and right chamber dilatation represented 15.9% of cases. These proportions were 90.6% and 10.9% respectively for Touré [10]. Four patients had an intra-cardiac thrombus, i.e. 6.3% compared with 21.9% for Touré [10].

Treatment

The standard treatment was diuretic (100%), ACE inhibitor or ARB 2 (100%), beta-blocker (100%). In addition to this standard treatment found in all African series [8,10,11,19], digoxin was used in 4 patients (6.4%) and anticoagulants in 19.1%. In contrast to the study by Touré [10] (9.4%), none of our patients had benefited from bromocriptine, not only because of the delay in treatment but also because their precarious situation made artificial breastfeeding impossible.

Progression

The outcome was favourable in 96.8% of cases, as in all African studies [7,8,10,13]. However, we recorded 22 cases of complications, with acute renal failure (45.4%) and thromboembolic events (40.8%) in the forefront. The hospital mortality rate was 3.8%. This result is close to those of Pio [7] (4.9%) and Coulibaly [9] (4.3%), but lower than those of Maliki [11] and Manga [13] (12.5%).

CONCLUSION

Peripartum cardiomyopathy is a frequent pathology in our country. Young women and multiparous women are most at risk. In our context, it is characterised by a delay in diagnosis. Its main manifestation is congestive heart failure. Its course is generally favourable despite the occurrence of complications such as acute renal failure and thromboembolic events.

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