

# Peripartum Cardiomyopathy: Clinical and Prognostic Aspects in the Cardiology Department of the Ignace Deen National Hospital

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## Abstract

**Summary:** Peripartum cardiomyopathy (PPCM) or Meadows syndrome is a dilated cardiomyopathy that occurs during or after pregnancy, defined as heart failure with a left ventricular systolic ejection fraction of less than 45% without other causes explaining this failure. **Methodology:** Twelve (12)-month retrospective study from November 1, 2023 to October 31, 2024, conducted from June 1 to November 31, 2023, focusing on the records of patients hospitalized for a CMPP at the Ignace Deen Hospital. **Results:** We recorded 14 patients out of a total of 513 patients hospitalized during the study period, the most represented age group was 18 to 27 years. 64% of our patients were multiparous. Cardiac echography revealed a dilatation of the left ventricle with systolic dysfunction in all our patients and the presence of a thrombus in 14% of cases. We counted 2 deaths, or 14%.

## Keywords

PPCM, Cardiology, CHU

## 1. Introduction

Peripartum cardiomyopathy (PPCM) or Meadows syndrome is a dilated cardiomyopathy that occurs during or during pregnancy, defined as heart failure with a left ventricular systolic ejection fraction of less than 45% without other causes ex-

plaining this failure [1].

The PPCM can be life-threatening with an overall mortality rate of 9% but with large disparities between countries [2]. The study by Gentry *et al.* in the USA showed that the Black American population was 16 times more likely to develop PPCM compared to other ethnic groups [3].

Sub-Saharan Africa and Haiti are among the most endemic areas. The overall incidence in Africa is 1 case per 1000 live births: Nigeria is one of the most affected countries with 1 case for 102 births, Haiti 1 case for 300 births [4].

Symptoms appear at the end of pregnancy or in the postpartum: 78% diagnosed within 4 months of the postpartum and 9% during the last month of pregnancy [5]. There are no pathognomonic clinical signs of PPCM. Thus, it is often difficult to distinguish the symptoms of pregnancy from those related to left ventricular failure [6]. Responsible for diagnostic delays and has a potentially preventable increased morbi-mortality [7].

The severity and context of the disease require emergency hospitalization, followed by specialized follow-up. The treatment of PPCM is the conventional treatment for heart failure, its goal is to reduce preload, decrease peripheral vascular resistance, and increase myocardial contractility [8].

This study aims to describe the clinical and prognostic aspects of the PPCM in the cardiology department of the Ignace Deen hospital in Conakry.

## 2. Methodology

**Study design:** 12-month retrospective study from November 1, 2023 to October 31, 2024, conducted from June 1 to November 31, 2023, focusing on the records of patients hospitalized for a PPCM at the Ignace Deen Hospital.

**Population study:** the inclusion criteria were women with signs of HF that appeared during the last few months of pregnancy and up to five months after delivery, with no identifiable causes of heart failure before the last month of pregnancy and with left ventricular systolic dysfunction demonstrated by classical echocardiographic criteria such as LV ejection fraction (less than 45%).

Exclusion criteria were that patients with a history of cardiomyopathy due to other causes or structural heart disease were excluded.

**Data collection:** The socio-epidemiological, clinical, paraclinical, therapeutic data were collected via a dedicated form. The analysis was carried out using SPSS 21 software, with frequencies for qualitative variables and averages for quantitative ones.

**Ethical considerations:** The data was collected anonymously, ensuring confidentiality.

## 3. Results

We recorded 14 patients out of a total of 513 patients hospitalized during the study period, the most represented age group was 18 to 27 years (**Table 1**). 64% of our patients were multiparous (**Table 3**) The time for symptom onset was postpartum in 71% of cases (**Figure 1**) The symptomatology was characterized by dyspnea in

all our patients (**Table 2**).

The electrocardiogram showed left ventricular hypertrophy in all our patients, or 100% atrial fibrillation in 21% of cases (**Table 3**).

The echocardiographic results revealed a dilation of the left ventricle with systolic dysfunction in all our patients and the presence of a thrombus in 14% of cases (**Table 3**). In our study, we counted 2 deaths, or 14% (**Table 4**).

**Table 1.** Distribution of patients according to sociodemographic characteristics.

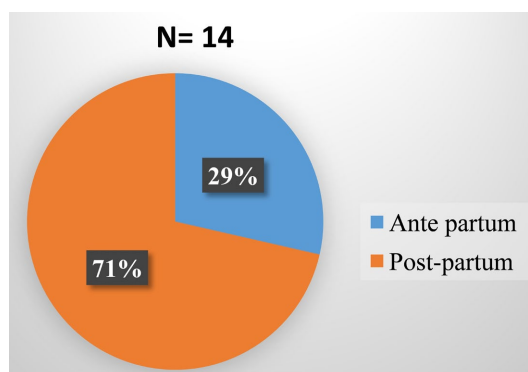
characteristics	size	Percentage
<b>Age (years)</b>		
- 18 - 27	9	64.28
- 28 - 37	4	28.57
- 38 - 47	1	7.14
<b>Average And [extremes]</b>		<b>[18 - 47]</b>

**Table 2.** Distribution of patients according to clinical characteristics.

clinics	size	Percentage
<b>Reasons for consultation</b>		
- Dyspnoea	14	100
- LE	7	50
- fast heartbeat	2	14.28
- cough	5	35.71
- hemoptysis	1	7.14
<b>Etiological factors</b>		
- Multi gesture	9	64.28
- Close pregnancy	3	21.42
- Age less than 18 years	1	7.14

**Table 3.** Distribution of patients according to paraclinical characteristics.

characteristics	size	Percentage
<b>imaging assessment</b>		
<b>Electrocardiogram</b>		
- RVH	14	100
- LVH	2	14.28
- LBBB	1	7.14
- atrial fibrillation	3	21.42
<b>Cardiac Doppler echo</b>		
- LV dilation	14	100
- systolic dysfunction	14	100
- Thrombus	2	14.28
- Elevation of the LVEDP	14	100



**Figure 1.** Distribution of patients by type of CMPP.

**Table 4.** Distribution of patients according to the evolution.

Evolution	size	Percentage
<b>Died</b>		
- Yes	2	14.28
- No	12	85.71
<b>cause of death</b>		
cardiogenic shock	2	18.2

#### 4. Discussion

The hospital prevalence of PPCM in our study (2.72%). This prevalence is lower than that of Codjo *et al.* in 2021 in Benin, Bamba-Kamakaté *et al.* in 2021 and Coulibaly *et al.* in 2023 in Mali [9]-[11]. This difference between the prevalences could be linked to several aspects, notably the difference between the studied samples as attested by Coulibaly *et al.* [11].

The time to onset of symptoms was postpartum (71%). This period of appearance has been found in several studies ranging from 67% to more than 95% according to some authors [9] [12]. On the other hand, 29% of cases were diagnosed during the antenatal period. This result corroborates with that of Bamba-Kamakaté [10]. For early diagnosis, better follow-up during prenatal consultations is probably needed [10].

In our study, dyspnea was the predominant symptom in all our patients, same finding made by several authors [7] [10]. This testifies that this symptom remains the major sign of this condition [13].

LVH was the frequent signs on the ECG in our patients. Our result is similar to those of Pio *et al.* [14]. These electrocardiogram signs have no specificity, can be found in most DCM [13].

The TTE is a key examination to affirm the diagnosis with certainty, but also allows for scalable, reproducible, and non-invasive monitoring [13]. The criteria thus developed facilitated the diagnosis and elimination of other pre-existing or unknown cardiopathies. In our study, the LV was dilated with systolic dysfunction of the LV in all our patients (100%) and presence of thrombus 14%. Our result is

similar to that of Maliki M A *et al.* [10].

The mortality in our study (14.28%) is similar to Coulibaly *et al.* in Bamako.

## 5. Conclusion

Peripartum cardiomyopathy is a serious cardiac complication of pregnancy. It occurs preferentially in the postpartum. The risk factors were: multiparity and close pregnancies. Dyspnea was the most common symptom. Echocardiography is a key examination to affirm the diagnosis with certainty, and also allows for scalable monitoring.

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## Authors' Contribution

All authors have read and approved the final and revised version of this article. Barry Alpha, Camara Ousmane Mamadama, kaba Abdoul Karim, contributed to the study design and discussion of the results.

Camara Ousmane Mamadama and Kaba Abdoul Karim contributed to the data collection and analysis of the statistical data of the study

Abdoulaye Fodé Toure actively participated in the drafting of the manuscript and in the revision of the article, ensuring the accuracy and clarity of the information presented.

## Conflicts of Interest

The authors declare no conflicts of interest regarding the publication of this paper.

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## List of Abbreviations

PPCM	Peripartum Cardiomyopathy
UH	University Hospital