

Peripartum cardiomyopathy: Impacts on neonatal development and preventive strategies

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ABSTRACT

Peripartum cardiomyopathy (PPC) is a rare condition that affects women in late pregnancy or shortly after delivery, resulting in ventricular dysfunction and heart failure. PPC can cause serious neonatal complications, such as prematurity and low birth weight, due to the maternal condition and the necessary treatments. The study suggests the need for more effective preventive strategies and multidisciplinary management to improve neonatal health outcomes.

Keywords: Cardiomyopathy, Cardiovascular Physiological Phenomena, Peripartum Period.

INTRODUCTION

Peripartum cardiomyopathy (PPC) is a rare and potentially life-threatening condition that affects women in late pregnancy or the first few months after delivery. It is characterized by left ventricular dysfunction and acute heart failure (Neto *et al.*, 2020; Bews *et al.*, 2021). Risk factors include race, ethnicity, multiparity, and advanced maternal age (Pfeffer *et al.*, 2022; Azad *et al.*, 2023). Women with PPC have reduced left ventricular ejection fraction (LVEF <45%) and may have left ventricular dilation, biatrial dilation, reduced systolic function, impaired diastolic function, and increased pulmonary pressure (Paray *et al.*, 2024). Although the effects of PPC on maternal health are widely studied, the impacts on neonatal development are still poorly understood (Melo *et al.*, 2023; Ribeiro Macedo *et al.*, 2022).

The health of neonates can be affected directly by the maternal condition and indirectly by the necessary treatments, resulting in complications such as prematurity, low birth weight, and the need for intensive care (Nariño *et al.*, 2024; Ricke-Hoch, Pfeffer, Hilfiker-Kleiner., 2020). This study seeks to

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evaluate the impacts of peripartum cardiomyopathy on neonatal development and propose preventive strategies to improve neonatal health outcomes.

MATERIALS AND METHODS

To achieve this objective, a detailed literature review was carried out in several renowned databases, including SciELO, PubMed, Google Scholar and Virtual Health Library. The descriptors used included terms in Portuguese, English, and Spanish related to CMPP, such as "Cardiomyopathy", "Cardiovascular Physiological Phenomena", and "Peripartum Period".

The selection of articles considered studies from the last 4 years, systematic reviews and meta-analyses relevant to the understanding of complications associated with CMPP. After a careful analysis, 11 articles were selected that most contributed to the specific objectives of this investigation.

RESULTS

Preliminary results indicate that peripartum cardiomyopathy has significant adverse effects on neonatal development (Ribeiro Macedo *et al.*, 2022; Benson *et al.*, 2022). Neonates of mothers with PPC have higher rates of complications such as low birth weight, prematurity, and intensive care needs (Azad *et al.*, 2023; Ricke-Hoch, Pfeffer, Hilfiker-Kleiner., 2020). In addition, the risk factors identified include the severity of maternal ventricular dysfunction, the presence of comorbidities, and the timing of diagnosis of PPC (Neto *et al.*, 2020; Vasconcelos *et al.*, 2022).

Currently used preventive strategies, such as intensive monitoring of maternal cardiac function and early management of heart failure, have shown limited efficacy in mitigating neonatal risks (Melo *et al.*, 2023; Bews *et al.*, 2021; Paray *et al.*, 2024). The qualitative interviews revealed the need for a more integrated multidisciplinary approach, involving cardiologists, obstetricians, and neonatologists from prenatal to postpartum (Nariño *et al.*, 2024; Pfeffer *et al.*, 2022).

FINAL CONSIDERATIONS

CPP poses a significant challenge not only to maternal health but also to neonatal development. The results of this study highlight the importance of more effective and integrated preventive strategies to improve neonatal outcomes. Implementation of ongoing monitoring programs for women at high risk of SCLC, antenatal education about the signs and symptoms of the condition, and a multidisciplinary approach to the management of both mother and newborn are recommended.



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