



RESEARCH ARTICLE

PERIPARTUM CARDIOMYOPATHY: ITS PRESENTATION AND OUTCOME AT A TERTIARY CARE CENTRE

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Abstract

Objective(s): This study is aimed to evaluate the age of presentation, various associated comorbidities, mode of delivery, along with maternal outcome of peripartum cardiomyopathy, in postpartum patients over a period of 1 year in a tertiary health care centre.

Method(s): This was a hospital prospective observational study done on 28 out of 1189 postpartum women at Swaroop rani hospital, Prayagraj from 2022 to 2023 belonging to the reproductive age group of 18 -40 years and presented with heart failure in the postpartum period without any history of heart disease in the past. The data recorded included age, parity, risk factors, mode of delivery, major adverse cardiovascular events, LV ejection fraction at time of diagnosis and after six months and the treatment given.

Result(s): Out of the 28 patients in postpartum ward with peripartum cardiomyopathy majority of the patients fell in the age group of more than 35 years (50%). The most common risk factor associated was multiparity (82.1%). The mode of delivery was caesarean section in 60% of the cases and 96.4% cases had acute LVF. LV ejection fraction between 20-30% at diagnosis had significant association with gestational diabetes mellitus (p value-0.021). There was no maternal mortality recorded in the above study.

Conclusion: Peripartum cardiomyopathy has a significant correlation with gestational diabetes mellitus. There is need for more multi-centric studies in order to understand the underlying pathogenesis and to determine the possible early interventions to help provide better pregnancy outcome.

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Introduction:-

Peripartum cardiomyopathy (PPCM) refers to heart failure of unknown etiology occurring during the last few months of gestation or immediately following delivery. Diagnostic criteria include diagnosis within the first 5 months of the postpartum period or in the last month of gestation.

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It is an idiopathic and reversible form of dilated cardiomyopathy. The incidence varies globally between 1:15,000 and 1:100¹. Its etiology is unclear and appears to be multifactorial and polygenic. Genetic predisposition, inflammation, autoimmune reaction, oxidative stress, low selenium levels, viral infections, as well as the effects of antiangiogenic factors, are all potential contributory factors.² Although peripartum cardiomyopathy is a phenotype of dilated cardiomyopathy, its clinical course is highly variable. It is a rare but potentially life threatening form of cardiac failure with a high degree of morbidity and mortality. A rapid progression to end stage of heart failure can occur within days. On the other hand a spontaneous and complete recovery may also occur. Both these features make it a distinct clinical entity. The rarity of the condition and lack of awareness of it among obstetricians and nurses/medical workers often leads to late diagnosis and treatment.

Aim and Objectives:-

This study the age of presentation, various associated comorbidities, mode of delivery, along with maternal outcome of peripartum cardiomyopathy, in postpartum patients over a period of 1 year in a tertiary health care centre

A detailed history, physical examination, echocardiography, mode of delivery, complications and maternal outcome was recorded. Statistical analysis was done using SPSS.

Materials And Methods:-

This was a hospital based cross sectional study carried out at the Swaroop Rani Nehru hospital, Prayagraj. The study participants included 28 postnatal women with diagnosis of Peripartum cardiomyopathy within a duration of 12 months from 2012 to 2023.

Inclusion Criteria

It is based on the National Heart, Lung, and Blood Institute (NHLBI) criteria to diagnose PPCM.⁵ The criteria include the following: • The emergence of heart failure symptoms in the last month of pregnancy (>36 weeks of gestation) or within the first 5 months after delivery. • With no evidence of preexisting cardiac disease. • Other causes of heart failure are ruled out. • Systolic dysfunction of the left ventricle with an ejection fraction (EF) of less than 45% or left ventricular end-diastolic size of more than and equal to 2.7 cm/m².

Exclusion Criteria

Exclusion criteria for the study were preexisting ischemic heart diseases, congenital heart diseases and prior known cardiomyopathy, liver disorders and malignancies.

On inclusion a detailed history was taken, and a clinical exam and 2D ECHO was done at time of diagnosis and 6 months postpartum. Analysis was done using SPSS software 11. The statistical tests used were chi square test and Fischer exact test.

Observation and Results:-

MATERNAL AGE IN YEARS	NUMBER	PERCENTAGE
<= 24 YEARS	4	14.3%
25-34 YEARS	10	35.7%
>=35 YEARS	14	50%

comorbidities	number	percentage
preeclampsia	19	67.9%
Gestational diabetes mellitus	9	32.1%
anemia	24	85.7%
obesity	9	32.1%
Thyroid disorder	15	53.6%
Multiple pregnancy	23	82.1%

Mode of delivery	number	percentage
vaginal	11	39.3%
LSCS	17	60.7%

TOTAL	28	100%
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MAJOR ADVERSE CARDIOVASCULAR EVENTS	NUMBER	PERCENTAGE
ACUTE LVF	27	96.4%
RESP DISTRESS	15	53.6%
CARDIAC RHYTHM DISTURBANCE	3	10.7%
DEATH	0	0%

		number	percentage
LV-EF at diagnosis	20-30%	20	71.4%
	31-40%	8	28.6%
	41-50%	0	0%
	>50%	0	0%
LV-EF after 6 months	20-30%	1	3.6%
	31-40%	9	32.1%
	41-50%	15	53.6%
	>50%	3	10.7%

Discussion:-

in our study Out of the 28 patients with peripartum cardiomyopathy majority of the patients fell in the age group of more than 35 years (50%). According to a study published in 2015 by Davis et al., the majority of individuals with PPCM are over the age of 30.³ Demakis et al. discovered that multiparity and rising age were major risk factors for its development.⁴

Similarly in our study the most common risk factor associated was multiparity (82.1%). Multiparity and increasing age are not as critical risk factors in the Haitian population compared with western population, as studied by Fett et al.⁵ According to Sliwa et al., PPCM is more common in (24–37%) young primigravida and white patients contrary to older and black women.⁶

Preeclampsia (67.9%) was a strong risk factor for PPCM in our study, and this is similar with Agarwal et al. study.⁷ However, Prasad et al. found that coexisting hypertension was detected in 37% of patients at presentation, whereas preeclampsia was seen in only 25% of patients.¹ A meta-analysis of 22 studies published in 2013 discovered a 22% prevalence of preeclampsia in women with PPCM. It is four times more than the global prevalence.⁸

Conclusion:-

Majority of the study participants were elderly multigravidas with anemia, and preeclampsia being strongly associated risk factors. Physiological hemodynamic changes in pregnancy can delay diagnosis of PPCM and result in adverse outcomes. A strong index of suspicion is required for early diagnosis. A multidisciplinary team approach and timely intervention are key measures for a favorable outcome.

Peripartum cardiomyopathy has a diverse clinical outcome and can even recur in subsequent pregnancies. A thorough cardiac follow-up is essential. Also, patient education regarding risk of recurrence and the need to avoid subsequent pregnancies is of paramount importance.

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