

“ROLE OF MATERNAL 2D ECHO IN PREDICTING PERIPARTUM CARDIOMYOPATHY IN HIGH-RISK PREGNANT WOMEN AT DISTRICT HOSPITAL, TUMKUR” By Dr SARVADA UMERJIKAR, VASANTHKUMAR RATHOD

Peripartum cardiomyopathy (PPCM) stands as a significant contributor to heart failure (HF) during pregnancy, characterized by a rapid clinical course, and a likelihood of spontaneous recovery, yet marked by a high recurrence rate in subsequent pregnancies. And high maternal mortality rate . Despite notable advancements, PPCM lacks a precise definition. The European Society of Cardiology's (ESC) working group on PPCM defines it as cardiomyopathy with reduced left ventricular ejection fraction (LVEF, usually <45%), manifesting towards the end of pregnancy or in the months post-delivery in a woman without previously known structural heart disease.² The timing of PPCM remains uncertain, with the National Heart, Lung, and Blood Institute defining it as idiopathic cardiomyopathy onset between the last month of pregnancy and five months post-delivery. The vague nature of the definition reflects diagnostic challenges. Echocardiography is useful for counseling purposes and for risk stratification of PPCM women undergoing a subsequent pregnancy, individuating those that may benefit more from strict follow-up and timely treatment, also in the case of apparent full recovery of global LV systolic function

AIM

To evaluate the role of antenatal 2D echocardiography as predictor of peripartum cardiomyopathy in high-risk pregnant women attending antenatal clinic.

OBJECTIVES

Primary Objective o To estimate left ventricular ejection fraction by 2D echocardiography in high risk pregnant women

Secondary Objectives : To measure effectiveness of maternal 2D echocardiography as predictor of peripartum cardiomyopathy . To determine maternal and fetal outcomes of management of women with peripartum cardiomyopathy

MATERIALS AND METHODS

Study Area : Department of Obstetrics & Gynaecology (OBG), District Hospital, Tumkur, Karnataka. **Study Population** : High risk pregnant women with gestational age more than 32 weeks, attending as an outpatient or admitted as an inpatient under the Department of Obstetrics & Gynaecology at study centre during the proposed study period.

Study Design : Prospective Observational Study . Study Duration : October 2023 to March 2024 for a duration of 6 months

Sampling Method : Convenience sampling

INCLUSION CRITERIA : * High risk pregnant women with gestational age more than 32 weeks . * Asymptomatic pregnant women with high risks such as pre-eclampsia, elderly primigravida, gestational or overt diabetes, obesity, twin gestation or COVID-19 infection in the past . * Symptomatic pregnant women with emergence of heart failure symptoms in the last month of pregnancy with its onset between the last months of pregnancy

EXCLUSION CRITERIA : Pregnant women with; * Pre-existing known cardiac disease *Concomitant therapy for other systemic illness other than heart failure * Hemoglobin at the time of initiation of study was <8 g/dL
*Any congenital heart disease *Refusal of consent

METHODOLOGY

High risk pregnant women aged above 18 years, with gestational age more than 32 weeks, attending as an outpatient or admitted as an inpatient under the Department of OBG at study centre, and who were eligible for the study according to the above mentioned eligibility criteria were included in the study after obtaining informed consent. All patients were subjected to elaborate clinical examination along with detailed history of demographics, family history, and high risk condition during pregnancy etc. Routine antenatal blood investigations were conducted. Further, 2D ECHO was done as screening procedure. Women with left ventricular ejection fraction of <45% in 2D ECHO was shifted to cardiac ICU with multidisciplinary approach from cardiologist, obstetrician and pediatrician for immediate treatment.

RESULTS : In the study, the mean age of the subjects was 25.63 ± 4.07 years. Majority were primigravida (61.0%), and preeclampsia (41.0%) was the most commonly associated high risk condition, followed by gestational hypertension (25.0%). The incidence of PPCM was estimated to be 9.0%, which was found to be more prevalent among the mothers who were elderly primi or diagnosed with eclampsia, with statistical significance. There was significant increase in the hospital stay and need for ICU care, among them. Also the neonates born to PPCM mothers were at significant risk of IUGR. However, no mortality was observed in the as all the mothers or their children especially the cases with PPCM were provided with timely and appropriate management.

CONCLUSION : In high-risk pregnant women, 2D ECHO-derived LVEF identified 9 cases of PPCM, underscoring the diagnostic efficacy of maternal 2D ECHO in predicting PPCM. Despite observed morbidity in PPCM cases, with some children experiencing IUGR, the study yielded a reassuring outcome; as no maternal or neonatal mortality occurred. This underscores the significance of timely and appropriate management in PPCM, highlighting the potential for positive outcomes and emphasizing the importance of proactive medical interventions to ensure the well-being of both mothers and their infants.

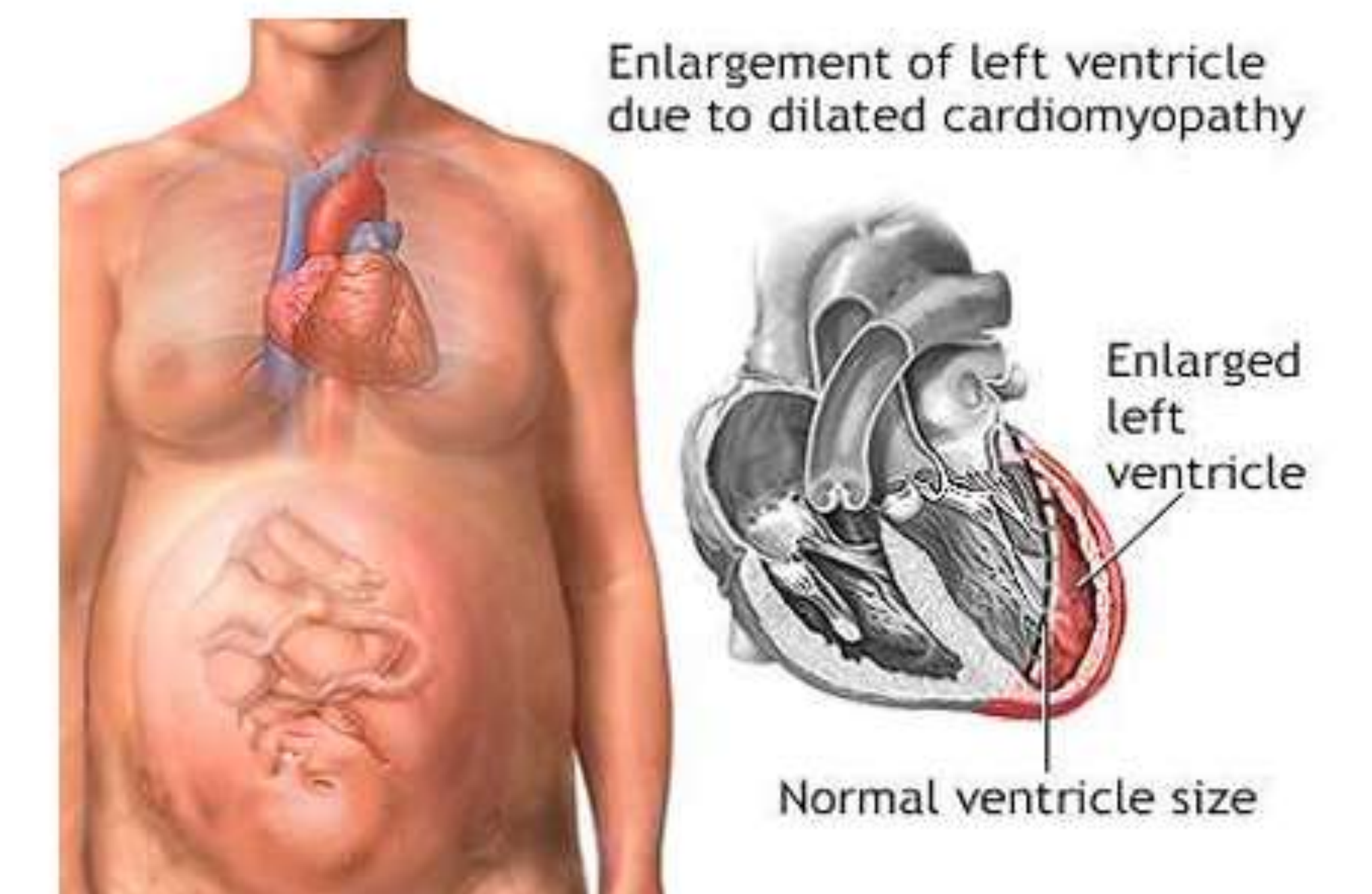


Figure 1: Peripartum cardiomyopathy