

An observational study on the Maternal and Fetal outcome in heart disease complicating pregnancy in Tertiary care center in Chennai, India

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INTRODUCTION:

Cardiovascular abnormalities are considered to be the most common indirect obstetric cause of morbidity. The primary objective of the present study is to assess the effect of heart diseases in pregnancy and its outcome. An early diagnosis with multidisciplinary team collaboration of trained obstetrician, cardiologist, anesthetist, pediatrician and nurse results in a successful outcome for mother and child in majority of cases. ***“Birthing is the most profound initiation to spirituality a woman can have”***. Hemodynamic changes that occur physiological in pregnancy can result in maternal and fetal morbidity. In mothers with heart disease, maternal inability to adapt to these physiological changes can expose underlying, previously silent, cardiac pathology, which is why some call pregnancy nature’s stress test..

AIM:

- The primary objective of the study is to assess the effect of heart diseases on pregnancy and its outcome on maternal and neonatal morbidity and mortality.
- Early detection, intervention and effective management of heart disease among pregnant women.
- ECHO screening among adolescent girls through school health programs to diagnose cardiac diseases even before pregnancy.

METHODOLOGY:

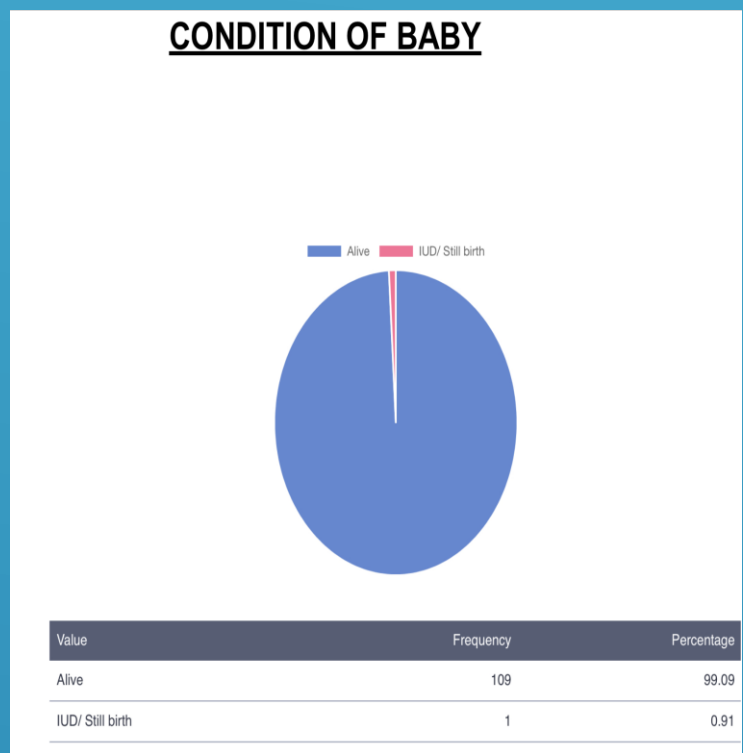
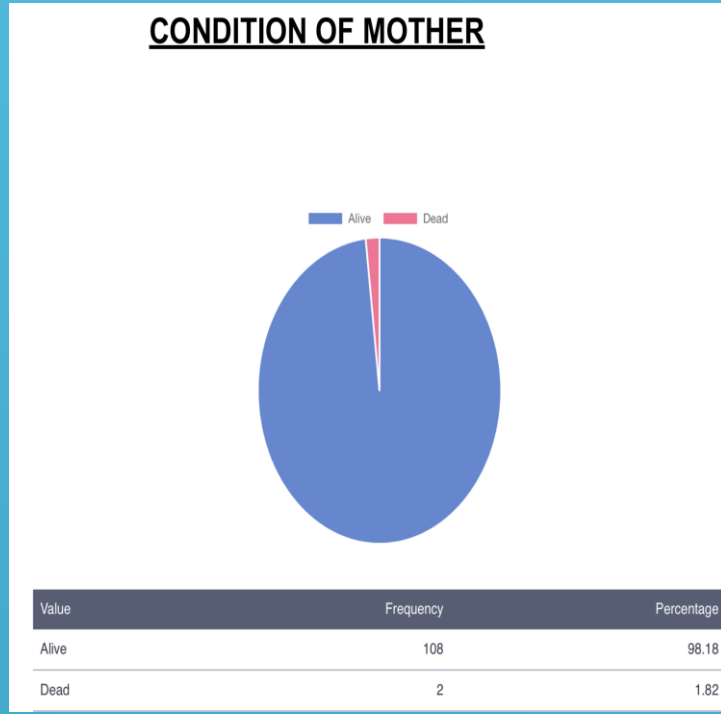
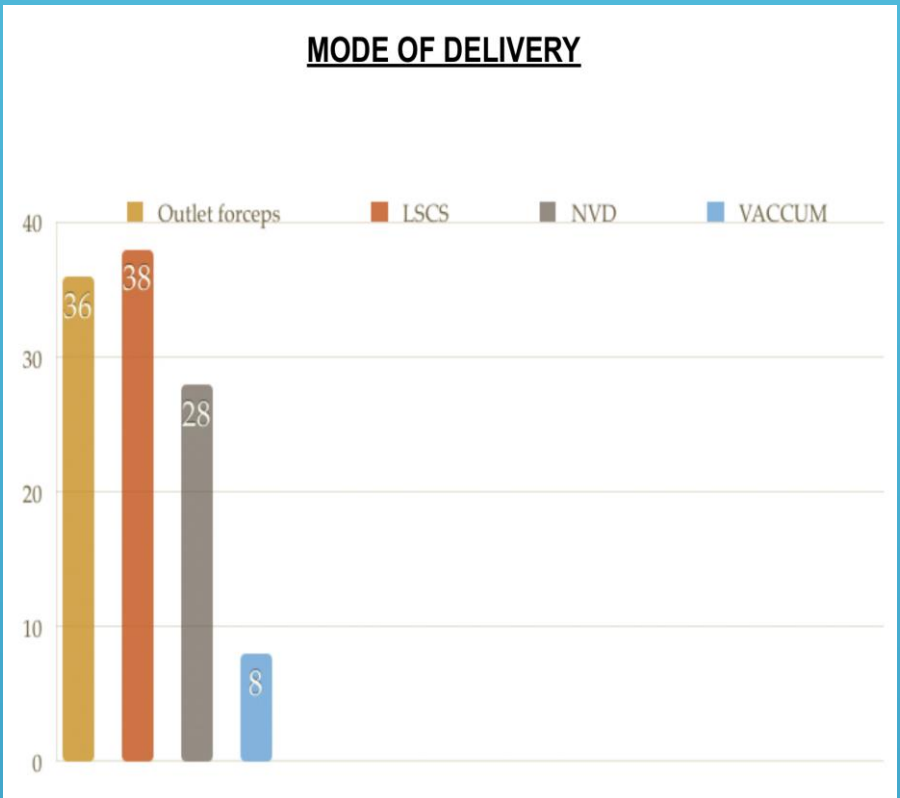
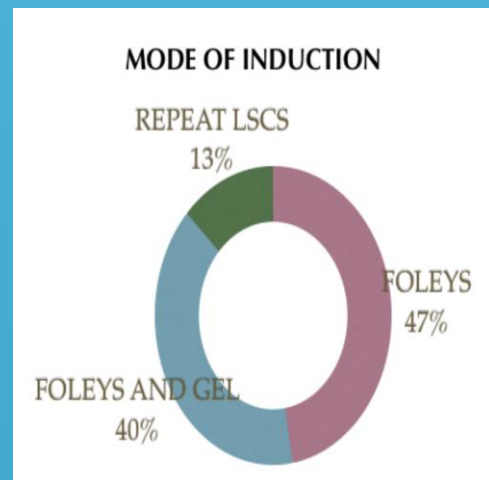
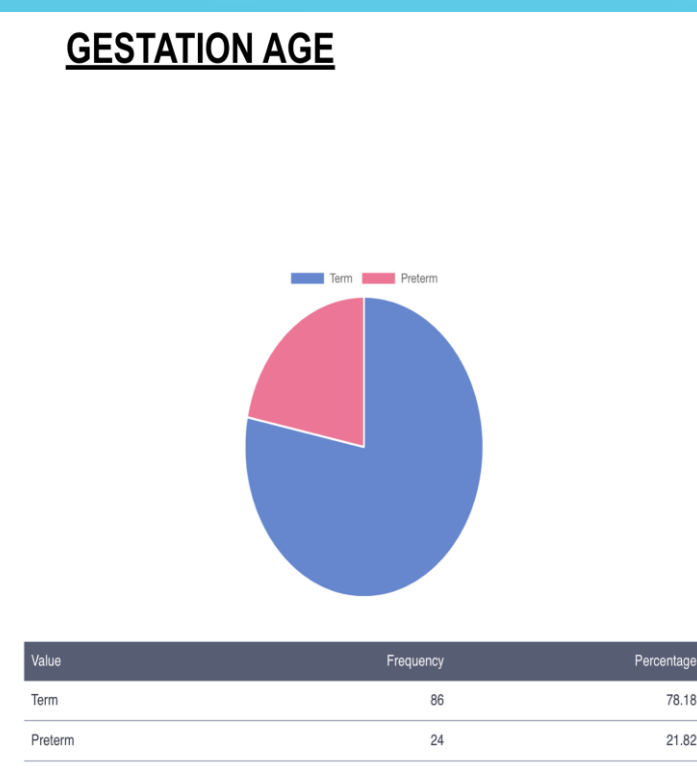
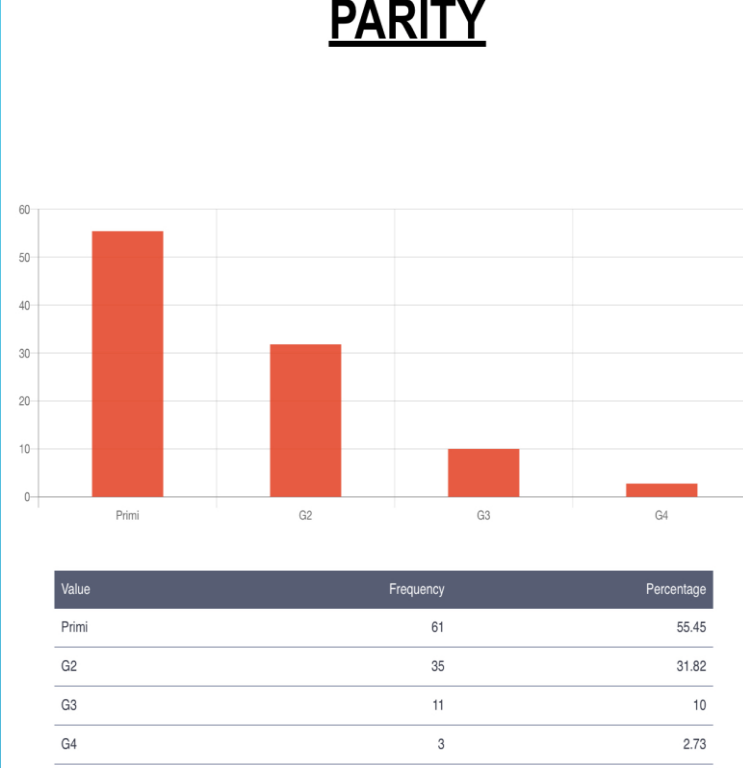
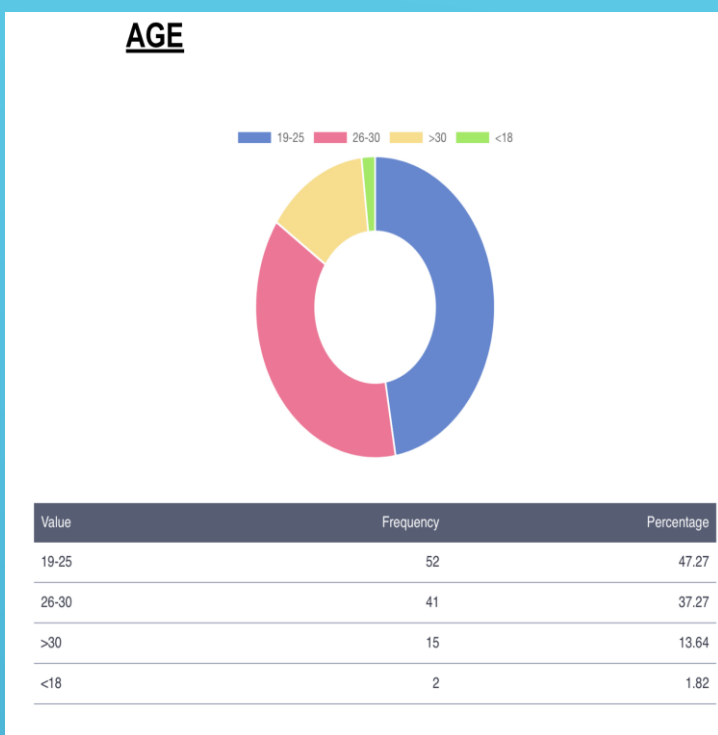
The study was carried out in a tertiary care centre in Chennai, India over the period Jan 2022- November 2022. All antenatal patients having cardiac diseases either previously diagnosed or diagnosed during antenatal visits, referrals with cardiac diseases, emergency admissions, patients who developed cardiac complications during peripartum period were included in the study. Data was statistically analysed with KOBO. The etiological type of heart disease and maternal and neonatal outcome were evaluated.

Detailed history of cardiovascular examination was performed to determine the type of lesion, patient suspected of cardiac lesions were evaluated by cardiologist to diagnose specific cardiac lesions. Risk assessment done with functional status (NYHA class III or IV) or cyanosis, Left ventricular systolic dysfunction (Ejection fraction < 0.40), Left heart obstruction (Mitral valve area <2.0 cm2, aortic valve area < 1.5 cm2, or peak left ventricular outflow tract gradient > 30 mm Hg) A cardiac event (Arrhythmia, stroke, transient ischemic attack, or pulmonary oedema).

RESULTS:

1. The most common age group of the patients with the heart disease was 22yrs (19yrs–25yrs)
2. 52 cases accounting to 47.27% which included mostly nulligravida (primi 61 cases accounting to 55.45 %) with POG from 37 to 41 weeks of gestation (Term - 86 cases - 78.18 %) .
3. All the patients were booked cases.
4. Congenital heart disease (OS-ASD)was the most prevalent (47 cases - 42.72%) followed by rheumatic heart disease 40 cases accounting to 36.36%.
5. It was also found in the study that outlet forceps was the preferred method 32.72% followed by LSCS 34.54%.
6. 1 still birth occurred in a mother with Eisenmenger syndrome.
7. There were 2 maternal mortalities due to Ebstein’s anomaly and Eisenmenger syndrome.

VALVULAR LESIONS:			
Trivial MR – 7 MS : 16 Mild - 8 Moderate - 3 Severe – 5 Mitral valve prolapse- 9	TR- 8		
	❖ ASD - 47	❖ Ebstein's anomaly - 2	❖ IAS ANEURYSM - 1
	❖ PDA- 1	❖ Eisenmenger syndrome - 2	❖ PPCM - 1
	❖ Patent foremen ovale - 4	❖ VSD - 1	❖ Complete heart block - 1
	❖ Hypertrophic obstructive cardiomyopathy HOCM - 3	❖ Dextrocardia with situs inversus totalis - 1	❖
	❖ ASD closure done- 3	❖ Acyanotic congenital heart disease - 1	❖



CONCLUSION:

Reducing maternal mortality is a World Health Organization (WHO) global health goal. Effective early diagnosis and multidisciplinary approach plays a vital key.

Pre conception: All women of reproductive age with cardiac disease should have access to specialized multidisciplinary preconception counseling in a joint obstetric and cardiac clinic, to empower them to make choices about pregnancy. They should be given advice about contraception and how to access services rapidly when they become pregnant.

Termination of pregnancy: Rapid access to termination of pregnancy services should be facilitated, if for whatever reason a woman chooses this. The termination of pregnancy service should be able to provide the appropriate level of medical care for the severity of the woman’s cardiac disease.

Antenatal care: All pregnant women with heart disease should be assessed clinically as soon as possible by the multidisciplinary team. All pregnant women with cardiac disease requiring treatment or care by other specialists should have an integrated care plan developed and agreed between all specialities involved. An escalation and transfer protocol must be available in all units should a woman with cardiac disease deteriorate during pregnancy or postpartum.

Intrapartum care: Senior input and multidisciplinary care are imperative. One should aim for a vaginal delivery unless obstetric or cardiac indications for LSCS. Women with cardiac disease should see the obstetric anaesthetist antenatally to discuss analgesia. When a woman with cardiac disease is admitted to the labour room, the anaesthetic staff should be involved early.

Fluid balance needs to be assessed accurately using an hourly input/output chart and an hourly urometer in moderate and high risk cases.

Observations should be charted on a HDU chart in moderate and high risk cases. For some cardiac conditions hypotension is poorly tolerated. Prompt and accurate replacement of lost volume is necessary. An arterial line may be indicated. This should be specified in the care plan.

For some women a short active second stage, or no active second stage may be necessary and vaginal delivery should be assisted with forceps. If needed this should be specified in the care plan.

Tocolytics, such as nifedipine, may severely compromise cardiac function. The use of tocolytics should be discussed with the consultant. Atosiban is the tocolytic of choice for women with severe cardiac disease as it has the least cardiovascular side effects.

Current NICE guidelines state that antibiotic prophylaxis against infective endocarditis should not be offered for gynaecological and obstetric procedures or childbirth. However, there should be a low threshold for antibiotic prophylaxis because of the serious nature of endocarditis and the low risk of anaphylaxis.

For post partum haemorrhage, due to uterine hypotonia, mechanical methods such as bimanual compression and a B Lynch suture can be used.

Postnatal Care: This is often a time of decompensation; hence close continued observation is appropriate. Staff should not become complacent. Fluid balance should be monitored closely and there should be daily medical review. An extended post natal stay may be indicated.

Women with cardiac disease should be supported with breastfeeding, given appropriate contraception advice and offered lifestyle advice (diet, smoking, exercise).

Medication should be reviewed and appropriate cardiology follow-up arranged prior to discharge from maternity care. A comprehensive discharge summary should be prepared by the woman’s obstetrician