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Maternal And Fetal Outcome in Women with Cardiac Disease - A Retrospective Study in Tertiary Care Center

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Abstract
Background*: cardiac disease is one of the 3 major indirect causes of maternal mortality in india .ITcomplicates 1% of all pregnancies*
Objective of study*:To evaluate the maternal and fetal outcome in cardiac disease in pregnancy .*
Methods *: a retrospective analysis was carried out in 70 pregnant women with known or recently diagnosed heart disease from aug-2015- aug 2017in a teritiary care hospital (GGH GUNTUR)*
Keywords: *Cardiac Disease, RHD, outcome, pregnancy, retrospective, NYHA class*

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I . Introduction

Cardiac disease is an important cause of indirect maternal morbidity and mortality with a reported incidents of 1% in India. Cardiac disorders contribute to 20.5% of maternal deaths. The ratio of RHD:CHD is decreasing due to improved pediatric care and improved surgical interventions early in childhood. Cardiac output increases by 30% to 50% during pregnancy and a further increase during labor and delivery imposes burden on diseased heart leading to maternal complications and death. Development of Obstetric complications like Anemia, Preeclampsia preterm labor and IUGR are commonly seen in patients with heart decease that worsens the outcome. The objective of the study was to evaluate the maternal and fetal outcome in patients with cardiac disease in pregnancy.

II . Materials And Methods

A retrospective study was conducted in the department of Obstetrics and Gynaecology, Guntur Medical College, Guntur, Andhra Pradesh. A total of 70 pregnant woman with a history of cardiac disease or newly diagnosed for the first time in pregnancy admitted to the Obstetrics ward from August, 2015 to August, 2017 were included in the study. The data were obtained from the review of medical records. Baseline data recorded included age, parity, gestational age, type of lesion, duration of disease, time of diagnosis, treatment history, NYHA functional class, maternal complications, mode of delivery and indication of caesarean section, neonatal outcome and admission to NICU were noted. In case maternal mortality, the cause of death was noted.

Characterestics	**No%**
Age (yrs)	No%
<20	5(7.14%)
20-24	35(50%)
25-29	22(31.4%)
30-34	6(8.5%)
>35	2(2.8%)
Gravida	No%
Primigravida	37(52.8%)
gravida 2	21(30%)
Gravida 3or more	12(17.14%)
Booking status	No%
Booked	15(21.49%)
Unbooked	55(78.51%)
Time of diagnosis	N0%
Before pregnancy	45(64.2%)
After pregnancy	25(35.7%)
Gestational age	No%
Term	59(84.2%)
Preterm	11(15.71%)
NYHA Class	No%

1 and II	40(57.1%)
III	14(20%)
IV	16(22.8%)
Habitat	No%
Urban	30(42.8%)
Rural	40(57.14%)

Table 2. Distribution of cardiac lesion

Cardiac lesion	No%
Rheumatic heart disease	36(51.4%)
MS	5(7.1%)
Post balloon valvastomy	2(2.8%)
MR	4(5.7%)
MS+MR	6(8.5%)
AS	3(4.2%)
MS+MR+PAH	9(12.8%)
MR+TR	7(10%)
Congenital heart disease	24(34.2%)
ASD	10(14.5%)
ASD REPAIR	4(5.7%)
VSD	5(7.1%)
VSD REPAIR	2(2.8%)
PDA	1(1.4%)
PDA REPAIR	1(1.4%)
TOF	3(4.2%)
TOF REPAIR	1(1.4%)
EISENMINGER SYNDROME	1(1.4%)
PERIPARTUM CARDIOMYOPATHY	6(8.5%)

Table3. Associated maternal complications

Obstetric complications	**Total**
Anemia	5(7.1%)
Preeclampsia	11(15.7%)
Preterm	11(15.7%)
Previous lscs	16(22.8%)
Placentaprevia	2(2.8%)
breech	3(4.2%)
Twin	1(1.4%)
Cardiac complication	Total
CCF	16(22.8%)
ARRYTHMIAS	1(1.4%)
MATERNAL MORTALITY	10(14.5%)

Table 4. Neonatal outcome

Complication	**Total**
Small for gestational age	17(24.2%)
NICU admission	8(11.4%)
Birth asphyxia	3(4.2%)
Prematurity	17(24.2%)
IUGR	9(12.8%)
APGAR <7	10(14.2%)
GOOD fetal outcome	42(60%)
Perinatal mortality	8(11.4%)

Fig 5. Mode of delivery

Mode of delivery	**No (%)**
Normal vaginal delivery	33(47.1%)
Instrumental deliveries	10((14.2%)
LSCS	23(32.8%)
Assisted breech	3(4.2%)
Twin delivery	I(14.2%)

A total of 70 pregnant women with cardiac disese were included in the study. The incidence of the cardiac disease at our center was 1.25%. Among the 70 pregnant women Primigravida were 37(52.8%), 2ndgravida 21(30%), and 3rdgravida or more 12 (17.14%). Most of the patients 40 (57.14%) presented in NYHA Class I and II. In the study, it was seen that the outcome worsend as the class of disease increased.

Out of the 70 patients 15 (21.49%) cases were booked and 55 (78.51%) cases were unbooked. 30(42.8%) cases fromUrban, 40(57.14%) from Rural area. Majority of the patients 36 (51.4%) in the study had rheumatic heart disease 24(34.2%) cases had congenital heart diseases and 6(8.57%) cases had cardiomyopathy. The most common lesion in patient with RHD was mitral stenosis seen in 7 (10%) cases followed by MS+MR+PAH 9 cases(12.8%). IUGR was seen in 9(12.8%) cases and prenatal mortality seen in 8(11.4%) cases (Intra Uterine Deaths). I.U.Ds are seen in mothers with severe preeclampsia, twins and anemia complicating cardiac disease

III . Discussion

In the present study, the incidence of cardiac disease at our center was 1.25%. In the study by Sheela etal, the incidence of cardiac disease in pregnancy was 1%. Rheumatic Heart disease was predominant cardiac problem septal defect were most common predominant in congenital cardiac disease. Patients with NYHA class-I & II had few maternal complications and their babies had higher birth weight. Patients with Cardiac intervention performed prior to pregnancy (prosthetic valve replacement 4 cases, ASD repair 4 cases, and PDA repair 1 case, Fallot's tetralogy repair 1 case had good maternal and fetal outcome. The common mode of delivery was vaginal route 33(47.1%), outlet forceps 10(14.2%), LSCS 23(32.8%). The commonest indication for LSCS was previous LSCS. Most of the babies were delivered at term and healthy 42(60%).

There were 10 maternal deaths in our study 1 case of severe MS with PAH died in the antenatal period at 28 weeks due to pulmonary edema, 1 case of Eisenmenger's syndrome, 1 case of uncorrected Fallot's tetralogy and 5 cases of peripartum cardiomyopathy died in the post natal period 2 to 3 days after delivery and 1 case of severe MS with twins with IUD with severe Anemia died after delivery

V. Conclusion

The management of pregnant woman with heart disease requires multi disciplinary approach. Surgically corrected RHD and CHD patients tolerated pregnancywell. The prognosis in peripartom cardiomyopathy was poor, as these patients had associated comarbid conditions like severe anemia and severe preeclampsia and they were referred in terminal condition. Vaginal delivery was safe and LSCS should be reserved for Obstetric indications only. Maternal and perinatal outcome can be improved by team approach at tertiary care center.

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