

# **Congenital Heart Diseases Complicating Pregnancy and Perinatal Outcome**

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**ABSTRACT:** In the present study fifty cases of perinatal outcome were analysed. The study reveals that perinatal outcome is not affected in acyanotic heart disease. Incidence of heart disease complicating pregnancy is about 1% of all pregnancies. The study suggests that good maternal and perinatal outcome depends on the type of Lesion.

**KEYWORDS:** Perinatal, Lesion, Heart disease.

## **I. INTRODUCTION**

Perinatal outcomes are usually seen in the form of preterm birth and low birth weight babies. The severity of symptoms during pregnancy is a better indicator of perinatal outcome than the duration and type of heart disease. The study of 196 cases of congenital heart disease was done by N.Agarwal et al (2009). Maternal and perinatal outcome of pregnancy was compared with cyanotic and acyanotic cases, between surgically corrected and uncorrected cases, IUGR (intra uterine growth retardation) abortion rate was higher in cyanotic group. Mean gestational age at delivery was better in corrected group 37.13 versus 34.93 weeks in uncorrected group. V.M.E. Fesslova, et al (2008) reported prospective evaluation from single centre of pregnancy in women with congenital heart disease. The perinatal outcome in 201 pregnancies had prematurity rate of 19.2% with cyanotic and 5.7% with acyanotic. There were 6/201 recurrence of cardiac anomalies (3%).

The study was done in 90 pregnancy in 53 women with congenital heart disease and observed preterm delivery rate of 20.8%, small for gestational age 8.3% by Paul Khairy et al (2006).

Zuber et al (1999) reported 309 pregnancies in 126 women, Gestational age of newborn infant was 8.8 months. Women with complex shunt lesions more often underwent Caesarian section and gave birth small to smaller babies. Recurrence of congenital heart diseases was 2.5%.

A review was done on hemodynamic changes of pregnancy and pre-pregnancy risk stratification and subsequent management of the pregnant woman with congenital heart disease by CEG Head and Thosare (2004).

Neonatal complications occurred in 22.4% of pregnancies and included preterm delivery 16.3%, small for gestation age (12.2%) and neonatal death 2%. This study was conducted by young Bin song et al (2008).

## **II. MATERIAL AND METHODS**

The present study comprises of patients admitted in Government Maternity Hospital, Nayapul, Osmania Medical College, Hyderabad with congenital heart disease. The total No. of admission into Govt. Maternity Hospital is 44,593. Total number of heart disease patients were 177 and this includes 55 patients with congenital heart disease, the early parinatal outcome,type of cardiac lesion, when the lesion was diagnosed, when surgically corrected age of correction, medical and obstetric management, mode of deliver and indication for caesarean section and perinatal outcome were analysed.

General examination includes General condition, Temperature, pulse rate, rhythm, volume, respiratory rate, blood pressure, jugular venous pressure, pallor, edema, hepatomegaly, splenomegaly, thyroid, dental caries.

Cardio vascular system includes Heart sounds–S1, S2, Murmurs–Degree of murmur, Radiation of murmur and any other additional findings, Respiratory system: Lungs, Any e/o crepitations/wheeze.

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Obstetric examination includes P/A–Uterus–height, Relaxed/acting, Presentation, Fetal heart rate, Liquor content, Estimated fetal weight. P/V–Cx–length, Dilatation, Pelvic assessment.

Mode of delivery–Vaginal, LSCS

Baby details–sex, weight, Apgar, Nursery admission

### INVESTIGATIONS:

1. Investigations to assess the cardiac status (a) Electrocardiogram (b) Echocardiography (c) Evaluation with the cardiologist.
2. Investigations to assess the complicating factors (a) Hemoglobin (b) Urine: Routine and microscopy, Culture sensitivity (c) Serum electrolytes (d) Serum uric acid, blood urea nitrogen, blood sugar.
3. Investigation for fetal growth and fetal well being (a) Ultrasonography, EFW, GA, BPP, Liquor content, IUGR (b) Fetal Doppler

### III. RESULTS & DISCUSSION

In the present study fifty patients delivered in GMH Hospital, Hyderabad, live babies were forty eight (96%). One case of early neonatal death was noted. Mother had coarctation of aorta and fetal distress was noted, she complained non-ischemic chest pain for which she was evaluated and taken up for LSCS. Probably the delay in LSCS was the cause for neonatal death. Most of the babies born had birth weights between 2.6–2.9 kg (52%). Perinatal outcome is not affected in acyanotic heart disease. The commonest cause for nursery admission was pre-maturity (four cases between 32-34 weeks of GA. No baby was detected to have congenital heart disease.

In most of the cases lesion was diagnosed in childhood with the lesion ASD at top, sixteen cases of ASD and one case of ASD+PS was encountered in present study. Nine cases of ASD were operated. Next VSD stands in the queue. Eleven cases were present in the study. Total cases of coarctation of aorta were six of which two cases were operated. In the present study out of fifty cases, twenty cases had medical complications out of which the commonest complication was nutritional anaemia. One of the cause of nutritional anaemia is low socio-economic group of patients. The other medical complications were upper respiratory tract infection (6 cases), pyrexia (1 case), bronchitis (1 case) epilepsy (1 case) and non-ischemic chest pain which were treated, as mentioned in Table 1.

Following conclusions are drawn from the study:

1. Incidence of Heart Disease complicating pregnancy is about 1% of all pregnancies. Congenital heart disease is now more prevalent than acquired heart disease in pregnancy in the developed countries. Heart disease is a genuine risk factor for mother fetus.
2. The risk of congenital heart disease in the baby of a woman with congenital heart disease varies from 3-50% depending on the specific lesion.
3. In India, the incidence of Rheumatic heart disease continues to be more. Reported incidences of congenital heart disease with pregnancy vary between 0.2% - 19%. 90% were acyanotic lesion commonest are septal defects, PDA and others come next.
4. Good maternal and perinatal outcome depends on the type of lesion, associated conditions like: pulmonary arterial hypertension, shunt reversal, functional capacity of the heart and other complications that increase the cardiac load, previous history of cardiac failure and arrhythmia, quality of medical care provided, psychological and socio-economic status.
5. In the present study all the cases were under intensive care, with good obstetric management which resulted in good maternal and perinatal outcome. Multidisciplinary team approach and intensive cardiac care are essential measures to improve the maternal and perinatal outcome in pregnant woman with heart disease.
6. Management by an experienced team in a designated specialist centre also helps the accumulation of an evidence base in a situation where individual conditions are rare.
7. Perinatal outcomes are usually seen in the form of preterm birth and low birth weight babies. The severity of symptoms during pregnancy is a better indicator of perinatal outcome than the duration and type of the heart disease.

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**TABLE 1 DATA SHOWING LESION WISE ANALYSIS AND PERINATAL OUTCOME.**

Type of Lesion	Gravidity	Lesion Operated	Average Gestational Age at delivery	Medical Complications	Obstetrics Complications	Mode of delivery	Parental Outcome	Birth Weight <2Kg	Birth Weight >2Kg
ASD-17	Prime-10 Multi-7	Prime-5 Multi-4	Preterm-2	PIH-3, URTI-2, Anaemia-2, Epilepsy-1	Oligohydramniou-2 IUGR-2	SPVD-11, LSCS-4 OutletForcep-2	Good	--	17
VSD-11	Primi-5 Multi-6	--	37-38 Weeks	Anaemia-4 URTI-3 Pyrexia-1	Oligohydramniou-2 Abrupton-1	SPVD-2, LSCS-6, OutletForcep-3	IUD-1 Deeply Asphyxiates-1	--	11
Coarctation of aorta-6	Primi-1 Multi-5	Primi-1 Multi-1	37-38 Weeks	Anaemia-1, PIH-1 Non ischemic Chest pain-1	Fetal distress-1, IUGR-1, Abnormal Doppler-1 Oligohydramniou-1	SPVD-1 LSCS-5	Early neonatal Death-1	--	6
Tricuspid Regurgitation-2	Primi-2	--	37-38 Weeks	Bronchitis-1 Anaemia-1	IUGR	SPVD	Good	--	1
Patent ductus Arteriosus-2	Primi-1 Multi-1	Multi-1	37-38 Weeks	--	Diminished Fetal Movement-1	SPVD-1 LSCS-1	--	--	2
Aortic Regurgitation-2	Primi-2	--	37-38 Weeks	--	--	SPVD-2	--	--	2
Primary Pulmonary Hypertension-1	Multi-1	--	37-38 Weeks	--	--	SPVD-2	--	--	1
Tetralogy of Fallot-1	Multi-1	Multi-1	36-37 Weeks	--	--	SPVD	Good	--	1
TGA	Primi-1 Multi-1	--	1 Preterm (34 weeks)	PIH	IUGR-1	SPVD	Good	--	2
Cortriatrium-1		Primi-1	36-37 Weeks	PIH	--	SPVD	Good	--	1
MVP+MR-3	Primi-1 Multi-1	--	36-37 Weeks	Anaemia-1 URTI-1	IUGR-1 Low lying placenta	SPVD-1 LSCS-2	Good	--	3
Bicuspid aortic Valve-1	Primi-1	--	Preterm (34-35 weeks)	Anaemia-1	IUGR-1	SPVD	Good	--	1
AR, AS-1	Multi	--	--	--	--	SPVD	Good	--	1

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