

Fetomaternal Outcome in Pregnancy with Rheumatic Heart Disease

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I. Abstract :

Objective : To evaluate the maternal & fetal outcomes of pregnancies, complicated by rheumatic heart diseases in a developing country.

Methods: This was a 3 ½ years observational study carried out in 100 pregnancies in a women with rheumatic heart disease from January 2015 to June 2018 at a tertiary care centre in India.

Results : Mitral stenosis was the commonest lesion (38%) caused by rheumatic fever. 75% of pregnancies were in NYHA class II group, 72% of patients had spontaneous vaginal delivery. The incidence of PAH (mild to moderate) was 53% & CCF developed in 14% cases. No maternal death occur in our study. The incidence of LBW baby was 40%. Intrauterine fetal death was noted in one case (1%) only.

Conclusion: Heart diseases in pregnancy has a major impact on pregnancy outcome. Multidisciplinary co-operation, proper pre-conceptual & antenatal care are the key measure to improve the fetomaternal outcome.

Keywords: Rheumatic heart disease, Pregnancy outcome, NYHA classification.

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II. Introduction

The incidence of heart disease is about 1%^{1,2}. Rheumatic heart disease remains a common disease in developing countries like India with Mitral stenosis (MS) being the most significant lesion.^{3,4}

Pregnancy is associated with marked hemodynamic changes such as increases in Cardiac output, Blood volume and prone to develop arrhythmia in established structural & electrical abnormality of heart. Valvular heart disease affecting either a single or multiple valve increase the risk of pregnancy both mother and child. It required a careful fetal & maternal monitoring and assessment for successful outcome of pregnancy.

Rheumatic heart disease may become symptomatic during pregnancy particularly at 3rd trimester & during labour & delivery. It is an important cause of premature death of mother in low socio-economic group. Functional status of mother before conception and duration of the disease is an important predictor of successful pregnancy outcome.

In our study we try to establish that though majority of population come from low socio-economic status, successful pregnancy outcome was established if the patient had good functional status before conception and careful follow-up inspite of severe single or multiple valve disease.

III. Patients & Methods

This descriptive study was conducted in B.S. Medical College, Bankura, West Bengal, India. One hundred (100) women with rheumatic heart disease were registered in this study from January 2015 upto June 2018.

All primi-gravida patients with Rheumatic heart disease without any other risk factor for pregnancy were included in our study.

Patients with hypertension, congenital heart disease, other high risk pregnancy, multipara history of valve replacement & history of CVA were wexcluded from study.

Our study was carried out at high risk pregnancy unit in our hospital managed by co-management of both obstetrician & cardiologist. In first visit full history, physical examination, obstetrics examination was done. Ultrasonography & echocardiography was done to diagnosis type & severity of lesion.

Patients were routinely examined in each antenatal visit for signs of anemia & congestive cardiac failure. Regarding assessment of cardiovascular status NYHA class done in each visit and Echocardiography if required. The frequency of visit was every 2 week till 30 weeks and thereafter every week till delivery. They

were usually admitted on 32 weeks of gestation unless they presented with symptoms of Cardiac failure earlier in pregnancy. Each patient was managed conservatively including penicillin Prophylaxis, decongestive medication as per requirement. Anemia was corrected by oral iron supplementation. Patients in cardiac failure were managed in intensive coronary care unit.

IV. Results

A total of 100 women with rheumatic heart disease were enrolled in this study.

Table – 1 shows the type of lesion. Mitral stenosis was detected in 38% of cases, MS with MR was detected in 24% of cases, only MR detected in 8% of cases and aortic valve involvement detected in 30% of cases.

Table – 2 shows age distribution of the study population. 60% of patients were between 21-24 yrs.

Table – 3 shows time of detection of RHD. Among the study population pre-conceptual detection of RHD was 73% & first trimester detection of RHD was 27%.

Table – 4 shows NYHA functional class. 75% of patients were NYHA class II group, 18% of patients were in NYHA III Group, 4% of patients were NYHA IV Group & 3% of patients were in NYHA I group.

Table – 5 mode of delivery of patients. 72% of patients had spontaneous vaginal delivery, 8% had outlet forceps delivery & 20% of patients had LSCS.

Table – 6 shows maternal complications. The incidence of Pulmonary arterial hypertensive (mild to moderate) was 53%, Atrial fibrillation developed in 16% of cases, CCF developed in 14% of cases. Incidence of anemia was 13% & fever was 4%. No maternal death occur in our study.

Table – 7 shows perinatal outcome OF OUR STUDY. The incidence of LBW baby was 40%, Birth asphyxia was 4%, Sepsis was 3% & intrauterine fetal death was 1%.

V. Discussion

Our study provide a contemporary assessment of maternal & neonatal outcome associated in women with RHD in pregnancy. In our study, it was shown that RHD is still most important cause of cardiac lesion and complication rates were high if not associated with close surveillance. Though it is a single centre study and hence not reflects the total burden of disease, as a single tertiary referral centre, statistics shown here may be an useful guide for disease burden in this area. Multiparous women were excluded from our study as 2nd pregnancy rarely create problem after a successful 1st one.

In our study Mitral Stenosis was the most common lesion (38%) detected. Similar results were noted in the studies by Mahesh et.al & by Nilaj Kumar et.al.^{5,6}

In our study majority of the patients (75%) were in NYHAHA class II group. Similar findings (77.4%) were seen in study conducted by Shawney et.al⁷.

In our study 72% women had spontaneous vaginal delivery as compared to 76.2% (Mazhar et.al)⁸ & 73.5% (Hameed et.al)⁹.

In our study 20% women had LSCS. LSCS was done only for obstetrics indications. Nilaj Kumar et.al reported caesarean section in 20.6% of cases. This is corroborated with our study.

In our present study 14% cases developed CCF. Similar findings were seen in study conducted by Mahesh et.al.

In our study the incidence of LBW baby was 40%. In the study conducted by Salem et.al¹⁰ the incidence of LBW baby was 27.8%.

VI. Conclusion

Heart disease in pregnancy has a major impact on pregnancy outcome. RHD being the predominant cardiac lesion. Multidisciplinary co-operation, proper pre-conceptual and antenatal care are the key measure to improve the fetomaternal outcome & can reduce maternal & fetal mortality & morbidity.

TABLE – 1 : Distribution of Cardiac Lesion

Cardiac Lesion	No. (100)	Percentage (%)
MS	38	38%
MS with MR	24	24%
MR	8	8%
Aortic valve involvement	30	30%

TABLE – 2 : Age Distribution of Patients

Age (Years)	No. (100)	Percentage (%)
< 20	4	4%
21 – 24	60	60%
25 – 28	28	28%
≥ 30	8	8%

TABLE – 3 : Time of Detection of RHD

Time	No. (100)	Percentage (%)
Pre-conceptional	73	73%
At First Trimester	27	27%

TABLE – 4 : NYHA functional classification

NYHA Classification	No. (100)	Percentage (%)
I	3	3%
II	75	75%
III	18	18%
IV	4	4%

TABLE – 5 : Mode of Delivery

Mode of Delivery	No. (100)	Percentage (%)
Spontaneous vaginal delivery	72	72%
LSCS	20	20%
Outlet forceps delivery	8	8%

TABLE – 6 : Maternal Complication

Complication	No. (100)	Percentage (%)
Pulmonary arterial Hypertension (mild to moderate)	53	53%
Atrial Fibrillation	16	16%
CCF	14	14%
Fever	4	4%
Anemia	13	13%

TABLE – 7 : Perinatal Outcome

Outcome	No. (100)	Percentage (%)
Low Birth weight (<2.5 kg)	40	40%
Birth weight (≥ 2.5 kg)	60	60%
Birth Asphyxin with LBW	4	4%
Sepsis with LBW	3	3%
Intrauterine fetal death with LBW	1	1%

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