

Feto-Maternal Outcome in Patients with Heart Disease

Dr. Alakananda¹, Dr. Biva Rani Goswami², Dr. Mridusmita Das^{3*}

¹Professor, ²Assistant Professor, ³Post Graduate Trainee, Department of Obstetrics and Gynecology, Gauhati Medical College and Hospital, Guwahati, Assam, India

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*Corresponding author: Dr. Mridusmita Das

Abstract

Original Research Article

Background: Pregnancy has a profound effect on the cardiovascular system and is associated with a significant risk on maternal and fetal outcome. It has been reported that 0.2-2 % of all pregnancies are complicated by cardiovascular disease. **Objective:** To study feto-maternal outcome in patients with heart disease. **Methodology:** A total of 70 cases with known or newly diagnosed cases of heart disease were enrolled in this hospital based observational study. **Results:** In the present study, the incidence of cardiac disease was 0.6%. Majority i.e 41 (58.6%) were of 20-25 years of age, 44 (62.9%) were primigravida, 31.4% cases were unbooked, 60 cases (85.7%) were in NYHA I and NYHA II. The principal cause of heart disease was Rheumatic heart disease i.e 65.7 % while congenital heart disease was 24.3 %. Cardiomyopathy constituted 5.7%. Majority i.e 52.9% had vaginal delivery while 12.9% had instrumental delivery. There were 4 maternal deaths. Perinatal mortality was 7.1%. **Conclusion:** Cardiac disease in pregnancy is a high risk condition which has major impact on pregnancy and its outcome. Early detection, treatment, proper follow up and correction prior to pregnancy shall improve the outcome.

Keywords: Heart disease, Pregnancy, RHD, NYHA classification.

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INTRODUCTION

Heart disease complicates 0.2 to 2 % of all pregnancies [1]. It contributes 10-15% of maternal deaths globally [2]. Rheumatic heart disease is the commonest etiological factor in developing countries, followed by congenital heart disease. Hemodynamic changes during normal pregnancy are well tolerated by women with normal cardiac reserve. With limited cardiac reserve, the risk for complications in pregnancy increases. Maternal and perinatal outcome can be improved by team approach at tertiary care center.

MATERIALS AND METHODOLOGY

This was a hospital based observational study conducted in the Department of Obstetrics and Gynecology, Gauhati Medical College and Hospital from 1st July 2018 to 30th June 2019. 70 cases including known cases and newly diagnosed cases of heart disease were taken up for study. The study excluded diseases with similar picture like hyperthyroidism and pulmonary pathology. Detailed history and clinical examination were done. Maternal functional status was analysed by New York Heart Association (NYHA) functional classification. ECG and ECHOCARDIOGRAPHY was done to confirm cardiac

lesions. Cases were analysed according to the following parameters.

Classification of functional heart disease

The clinical classification of the New York Heart Association (NYHA) is based on past and present disability and is uninfluenced by physical signs:

Class I: uncompromised- no limitation of physical activity.

Class II: slight limitation of physical activity.

Class III: marked limitation of physical activity.

Class IV: severely compromised- inability to perform any physical activity without discomfort.

RESULTS

Table-1: Age distribution

Age (years)	No. of patients	Frequency (%)
<20	5	7.1
20-25	41	58.6
26-30	16	22.9
>30	8	11.4
Total	70	100

In the present study, maximum i.e 41 (58.6%) cases were in the age group 20-25 years.

Table-2: Parity distribution

Parity	No. of patients	Frequency (%)
Primigravida	44	62.9%
Multigravida	26	37.1%
Total	70	100

In our study 44 cases (62.9%) is in primigravida group and 26(37.1%) in multigravida group. It was seen that patient with cardiac disease developed more in primigravida group compared to multigravida group.

Table-3: Distribution of cases according to booking status

Booking status	No. of patients	Frequency (%)
Booked	48	68.6
Unbooked	22	31.4
Total	70	100

Maximum cases were booked cases i.e 48 cases (68.6%). Unbooked cases were 22 (31.4%).

Table-4: Distribution of cases according to NYHA classification

NYHA Grades	No. of patients	Frequency (%)
I	49	70
II	11	15.7
III	7	10
IV	3	4.3
TOTAL	70	100

Maximum number of cases was of NYHA I and II i.e 85.7%, 7 (10%) cases of NYHA III and 3 (4.3%) cases were of NYHA IV.

Table-5: Distribution of cases according to type of heart disease

Type of heart disease	No. of cases	Frequency (%)
Rheumatic heart disease	46	65.7
Congenital heart disease	17	24.3
Cardiomyopathy	4	5.7
Corrected cardiac lesion	3	4.3
Total	70	100

Amongst the cases, the commonest type of heart disease was rheumatic heart disease which constitute 65.7% followed by congenital heart disease constituting 24.3%. Cardiomyopathy constitute 5.7% and 4.3% cases had undergone corrective cardiac surgery. Amongst the types, cardiomyopathy has the worst outcome. 2 out of 4 cases expired with cardiomyopathy.

Table-6: Distribution of cases according to fetal outcome

Fetal outcome	No. of cases	Frequency (%)
IUFD	1	1.4
Stillborn	1	1.4
Neonatal death	3	4.3
Live baby	65	92.9
Total	70	100

Amongst the studied cases, perinatal mortality was 7.1%

Table-7: Distribution of cases according to maternal outcome

Maternal outcome	No. of cases	Frequency (%)
Expired	4	5.7
Recovered	66	94.3
Total	70	100

It has been observed that maternal mortality was 5.7% amongst the studied cases.

DISCUSSION

In the present study, incidence of heart disease is 0.6% which is comparable to the study of Pandey k *et al.* [3] (0.8%) and Kavitha Gayek *et al.* [4] (0.39%). Majority of the cases i.e 58.6% were between the age group 20-25 years which is comparable to Lubna Latif *et al.* [5] (57.1%). The present study includes 62.9% cases of primigravida which was nearly similar to studies by Pandey K *et al.* (61.5%). Majority of the patients (85.7%) belong to NYHA class I and II. The percentage of patients with NYHA class III and IV was 14.3% and had a poor outcome. These observations were similar with the study done by Pujitha KS *et al.* [6].

Rheumatic heart disease was the predominant lesion (65.7%) followed by congenital heart disease (24.3%) and cardiomyopathy (5.7%) in our study. Similarly Asghar *et al.* [7] found 66% RHD, 28 % CHD and 4% cardiomyopathy.

In our study perinatal mortality was 7.1% which is comparable to the study done by Doshi *et al.* [8] (5.9%) and Konar *et al.* [9] (4.5%). We found 4 (5.7%) maternal deaths. Similarly, Pandey K *et al.* found 5.12 % and Saleem S *et al.* [10] found 4.4%.

CONCLUSION

- Cardiac disease in pregnancy is a high risk condition which has major impact on pregnancy and its outcome.
- Rheumatic heart disease is still a predominant cardiac problem affecting the pregnancy and its outcome.
- Adverse outcome has been seen predominantly in unbooked cases and NYHA III and IV.

- Early detection, treatment, proper follow up and correction prior to pregnancy shall improve the outcome and decrease the maternal mortality and morbidity in heart disease.
- The management of pregnant women with heart disease requires a multidisciplinary team for optimal maternal and fetal outcome.

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