

DOI: <https://dx.doi.org/10.18203/2320-1770.ijrcog20242083>

## Case Series

# Fetomaternal outcome in pregnancy with cardiac disease-a case series

Usha Doddamani<sup>1</sup>, Ramya M. S.<sup>1\*</sup>, Shali Sohail<sup>2</sup>

<sup>1</sup>Department of Obstetrics and Gynecology, GIMS Kalaburgi, Karnataka, India

<sup>2</sup>Department of Aesthesia and Critical Care, GIMS, Kalaburgi, Karnataka, India

**Received:** 13 June 2024

**Revised:** 15 July 2024

**Accepted:** 16 July 2024

### \*Correspondence:

Dr. Ramya M. S.,

E-mail: msramya196@gmail.com

**Copyright:** © the author(s), publisher and licensee Medip Academy. This is an open-access article distributed under the terms of the Creative Commons Attribution Non-Commercial License, which permits unrestricted non-commercial use, distribution, and reproduction in any medium, provided the original work is properly cited.

## ABSTRACT

Cardiac disease is an important cause of maternal mortality and morbidity in ante partum and postpartum period. Incidence of heart disease in pregnancy is <1%. Pre pregnancy diagnosis, counselling, antenatal supervision, delivery at equipped centre and management with multidisciplinary approach favours the maternal and fetal outcome. This consists of case series of 16 patients with cardiac disease admitted in the department of obstetrics and gynecology at Gulbarga institute of medical sciences, Kalaburgi from January 2022 to June 2023.

**Keywords:** Cardiac disease, Maternal outcome, Fetal outcome

## INTRODUCTION

Cardiac disease is an important cause of maternal mortality and morbidity in ante partum and postpartum period. Incidence of heart disease in pregnancy is <1%, but tertiary referral centre has higher incidence for obvious reason.<sup>1</sup>

Cardiac disease complicates 0.2-4% of all pregnancies in western countries. In developing countries like India, it complicates 2% of pregnancies and contributes to 1/5<sup>th</sup> of all maternal deaths.<sup>2</sup>

Cardiac diseases are broadly divided into congenital and acquired. Among the cardiac diseases rheumatic heart disease is the common type in developing countries. Congenital heart diseases and cardiomyopathies are common in developed countries. Among RHD mitral valve stenosis is predominant lesion which accounts nearly three quarter of all cases.<sup>3</sup>

In this study we present a case series of 16 pregnant patients with cardiac disease along with the fetomaternal outcome and discussion about effects of pregnancy on cardiac function and challenges of obstetrics management.

## CASE SERIES

In this study we report a case series of 16 pregnant patients with cardiac disease who were newly diagnosed/previously established.

Data collected from the department of obstetrics and gynecology at Gulbarga institute of medical sciences, Kalaburgi from January 2022 to June 2023.

A structured detailed proforma was used to collect the essential information regarding the cardiac disease in pregnancy. The case details including age, parity, gestational age, history, thorough clinical examination including general physical examination, cardiovascular system, respiratory system examination, per abdomen and per vaginal examination, investigations like routine investigation, ECG, 2D echo, type of cardiac lesion, use of cardiac medications, mode of delivery and fetal outcome are collected.

Age of the patients ranged from 19-35 years with maximum number of patients belongs to the age group

between 20-25 years (75%). Among 16 patients 8 (50%) were multigravida and 8 (50%) were primigravida.

In 16 cardiac patients most, common cardiac lesion was rheumatic heart disease 4 (25%) while valvulopathy were 3 (18.75%), peripartum cardiomyopathies were 3 (18.75%), post cardiac surgeries were 3 (18.75%), atrial septal defect was 1 (6.25%), Ebstein anomaly was 1 (6.25%) and hypertension induced cardiomyopathy was 1 (6.25%). In RHD majority had multiple valvular lesions.

Majority of them delivered by LSCS 10 (62.5%) while 5 (31.25%) delivered vaginally and 1 (6.25%) underwent MTP. Out of 16 patients there were 2 (12.5%) maternal deaths. Total live births were 14 (87.5%) among them NICU admission was 5 (31.25%), and still birth was 1 (6.25%).

All patients were managed with multidisciplinary approach involving obstetrician, anaesthetist, cardiologist and paediatrician.

**Table 1: Summary table.**

Age (in years)	parity	Period of gestation (in weeks)	Cardiac disease	Mode of delivery	Maternal outcome	Fetal outcome	NICU admission
20	Primi	38	Atrial septal defect	LSCS	Discharged	Live birth	No
22	Primi	40	Valvulopathy	FTVD	Discharged	Live birth	No
20	Primi	37	Post ASD closure	FTVD	Discharged	Live birth	No
28	Multi	31	Post DVR status with thrombosis	LSCS	Discharged	Live birth	Yes
24	Multi	34	Rheumatic heart disease with valvulopathy	LSCS	Discharged	Live birth	Yes
22	Primi	36	valvulopathy	LSCS	Discharged	Live birth	No
24	multi	35	Peripartum cardiomyopathy	LSCS	Death	Live birth	Yes
20	Primi	11	Ebstein anomaly	MTP	Discharged	-	-
30	multi	36	Rheumatic heart disease with valvulopathy	LSCS	Discharged	Live birth	No
22	Primi	38	valvulopathy	LSCS	Discharged	Live birth	No
23	primi	31	Peripartum cardiomyopathy	LSCS	Death	Still birth	-
35	Multi	36	Rheumatic heart disease with valvulopathy	LSCS	Discharged	Live birth	No
25	Multi	39	Hypertension induced cardiomyopathy	FTVD	Discharged	Live birth	Yes
22	Primi	40	Rheumatic heart disease with valvulopathy	FTVD	Discharged	Live birth	No
22	Multi	39	Post ICR status	FTVD	Discharged	Live birth	No
27	Multi	30	Peripartum cardiomyopathy	LSCS	Discharged	Live birth	Yes

## DISCUSSION

During pregnancy there are physiological hemodynamic changes which causes significant burden on Cardio-vascular system. Diseased heart unable to adjust to these changes and results in adverse maternal and fetal outcomes. And it depends on the type and severity of cardiac disease. There should be timely diagnosis and adequate management to prevent fetomaternal morbidity and mortality.<sup>4</sup>

Due to the 50% increase in plasma volume and sixfold increased risk of thrombosis pregnancy is a challenge to the women with cardiac disease.<sup>5</sup>

Heart disease in pregnancy is one of the three major indirect causes of maternal mortality in India. Maternal mortality is most commonly seen with mitral stenosis and Eisenmenger syndrome has the highest maternal mortality.<sup>6</sup>

In developing countries many of the women with cardiac disease becomes pregnant before seeking the therapeutic intervention and many of them are diagnosed with cardiac disease only during the pregnancy.<sup>7</sup>

Women with heart disease have increased risk of spontaneous miscarriage and therapeutic abortion.<sup>8</sup>

The children born to the mother with congenital heart disease have increased risk of having congenital heart disease, 3-5% is the overall risk of inheriting polygenic cardiac disease in women with cardiac disease as compared to 1% in general population.<sup>9</sup>

The risk of inheriting cardiac disease depends on the condition of the affected parent and the risk is increased if there is a previously affected siblings.<sup>10</sup>

The management of these patients should be multidisciplinary approach involving obstetrician,

cardiologist and anesthetist and the management should start before the conception.<sup>11</sup>

## CONCLUSION

Cardiac disease in pregnancy is associated with significant maternal and perinatal morbidity and mortality. Pre pregnancy diagnosis, counselling, antenatal supervision, delivery at equipped centre and management with multidisciplinary approach favours the maternal and fetal outcome.

*Funding: No funding sources*

*Conflict of interest: None declared*

*Ethical approval: Not required*

## REFERENCES

1. Misra R. Ian Donald's practical obstetrics problems. Chapter 10, 8<sup>th</sup> edition. New Delhi: Wolter Kulwer India Pvt Ltd. Cardiac Disease; 2020:211.
2. Bhide A, Arulkumaran S S, Damania KR. Arias' practical guide to highrisk pregnancy and delivery. Chapter 16, 5<sup>th</sup> edition. RELX India Pvt Ltd; Cardiac Disease and Pregnancy; 2020:250.
3. Salam S, Mushtaq S, Mohiud-Din K, Irfan G. Maternal and fetal outcome in pregnancy with heart disease in tertiary care hospital in India. *Int J Reprod Contracept Obstet Gynecol.* 2017;6(9):3947-51.
4. Mohan A, Mohan U, Singla R, Pratima M, Divya P, Rekha B. Feto-maternal outcome in pregnancy with heart disease: A tertiary care centre experience. *MOJ Women's Health.* 2020;9(2):59-62.
5. Steer P. Heart disease in pregnancy. *Women's health medicine. Med Prob Pregnancy.* 2005;2(2):18-21.
6. Bafna KK, Nakum K, Vithal A. Fetomaternal outcome in pregnancy with cardiac disease. *Int J Med Biomed Studies.* 2021;5(7):24-7.
7. Sawhney H, Aggarwal N, Suri V, Vasishta K, Sharma Y, Grover A. maternal and perinatal outcome in rheumatic heart disease. *Int J Gynecol Obstet.* 2003;80(1):9-14.
8. Siu SC, Colman JM, Sorensen S, Smallhorn JF, Farine D, Amankwah KS, et al. Adverse neonatal and cardiac outcomes are more common in pregnant women with cardiac disease. *Circulation.* 2002;105(18):2179-84.
9. Romano Zelekha O, Harish R, Bliden L, Green M, Shohat T. the risk for congenital heart defects in offspring of individuals with congenital heart defects. *Clin Genet.* 2001;59(5):325-9.
10. Burn J, Brennan P, Little J, Holloway S, Coffey R, Somerville J, et al. Recurrence risk in offspring of adults with major heart defects: results from first cohort of British collaborative study. *Lancet.* 1998;351(9099):311-6.
11. Madazli R, Sal V, Clift T, Onur G, Abdullah G. Pregnancy outcomes in women with heart disease. *Arch Gynecol Obstet.* 2010;281(1):29-34.

**Cite this article as:** Doddamani U, Ramya MS, Sohail S. Fetomaternal outcome in pregnancy with cardiac disease-a case series. *Int J Reprod Contracept Obstet Gynecol* 2024;13:2130-2.