



PREGNANCY WITH CARDIAC DISEASE; PREVALENCE FETAL AND MATERNAL OUTCOME IN PREGNANCY WITH CARDIAC DISEASE

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ABSTRACT... Objective: Objective of study was to find out prevalence and fetal and maternal outcome in pregnancy with cardiac disease. **Study design:** A retrospective descriptive study. **Setting:** Services Hospital Department of Obs and Gynae unit-2. **Period:** 1st January to 31st December 2015. **Methodology:** All cardiac patients who delivered after 28 week gestation were included in the study. Case-notes of cardiac patients were reviewed, patients age, parity and gestational age was recorded. Maternal and fetal outcome was noted in relation with NYHA classification, data was analyzed. **Results:** In our study prevalence of cardiac disease was 1.09%. Age of most patients were between 26-30 years, 44.68%. Most of patients were multiparous 57.44%. According to NYHA classification, 63.82% had class 3 & 4 cardiac disease. Rheumatic heart disease was present in 91.48%. Thirty patients were delivered by caesarean section. There were 3 IUD and 2 perinatal deaths. Maternal mortality was 2.12%. Preterm delivery occurred in 20 patients. **Conclusion:** Cardiac disease is important cause of maternal and perinatal morbidity and mortality. It's important to counsel all women of reproductive age with known cardiac disease, about increased fetal and maternal risk during pregnancy. Cesarean section may be considered in patients with moderate or severe MS with class 3-4 symptoms.

Keywords: Cardiac disease, NYHA classification, mitral stenosis, maternal and fetal outcome.

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INTRODUCTION

All over world prevalence of cardiac disease during pregnancy is 1%.¹ During pregnancy rheumatic heart disease is common in developing countries while CHD is more common in developed countries.² Cardiac disease is the leading cause of death during pregnancy in UK.³ "In the European registry on pregnancy and heart disease, mitral stenosis and/or regurgitation were the most common types of valvular pathologies (63%) followed by Aortic valve disease (23%)." During pregnancy MS is commonest cause of death due to cardiac disease.^{4,5} Congenital heart disease is usually low risk but there is 30-40% maternal mortality in case of Eisenmenger Syndrome.⁶ Fetal morbidity (IUGR, Preterm) is increased with severity of MS, in mild MS 14% while in severe MS up to 33%.^{7,8} Vaginal delivery is preferred in cardiac patient with class 1-2 NYHA, however cesarean section may be considered in class 3-4 with severe MS.⁹

METHODOLOGY

Study was conducted from January 2015 - December 2015. Gynae Unit 2 of SIMS/ Services Hospital Lahore. Total number of deliveries during this period and cardiac patients delivered during this period were noted. Case-notes of cardiac patients were reviewed, patients age, parity and gestational age was noted. Obstetric and medical data was noted. Maternal and fetal complications, mode of delivery and NYHA classification was noted. All patients were managed in collaboration with cardiologist. Spontaneous vaginal delivery was preferred; induction of labor and cesarean section was done for obstetric reason and severe cardiac disease.

RESULTS

During one year period total 4307 patients were delivered, out of this 47 patients were with cardiac disease. Prevalence of cardiac disease was 1.09%. Age of most patient were between 26-30 years (44.68%). Most patients were multiparous,

57.44%. According to NYHA classification, 63.82% were in class 3-4 cardiac disease. Rheumatic heart disease was present in 91.48%. Out of 47 patients 30 were delivered by cesarean section. IUD occurred in 3 patients and 2 had perinatal death. Maternal mortality was 2.12%. Preterm delivery occurred in 20 patients.

Age	Number	%
20-25	18	38.29%
26-30	21	44.68%
31 and above	8	17.02%

Table-I. Distribution according to age

Parity	Number	%
PG	14	29.78%
G2-G4	27	57.44%
G5-above	6	12.76%

Table-II. Parity of cardiac patients

Class	Number	%
1-2	17	36.17%
3-4	30	63.82%

Table-III. NYHA classification of cardiac disease

Cardiac disease type	number	%
Rheumatic heart disease	43	91.48%
Mitral stenosis	41	87.23%
Mitral regurgitation	2	4.25%
Congenital heart disease	4	8.51%
Ventricle septum defect	2	4.25%
Atrial septum defect	2	4.25%

Table-IV. Type of cardiac disease during pregnancy

Mode of delivery	Total	%	1-2 functional class	3-4
Cesarean section	30	63.82%	8 (26.66%)	22 (73.33%)
Vaginal delivery	17	36.17%	9(52.94)	8(47.05)

Table-V. Mode of delivery in relation with functional class

Term	27	57.44%
preterm	20	42.55%

Table-VI. Time of delivery

Class 1-2	4	80%
3-4	16	20%

Table-VII.

Fetal outcome	Class 2 or less	%	Class 3 or more	%
IUGR	-	-	3	6.38%
Preterm	4	20%	16	80%
IUD	-	-	3	6.38%

Table-VIII. Fetal outcome according to class NYHA

Complications	number	%
Pulmonary hypertension	1	2.12%
Congestive cardiac failure	2	4.25%
Atrial fibrillation	1	2.12%

Table-IX. Complications of cardiac disease

DISCUSSION

Hematological and physiological changes during pregnancy put the cardiac patients at increased maternal and fetal risk. Pregnancy outcome depends upon functional class of patient.¹⁰ In this study prevalence of cardiac disease was 1.09%. Age of most patients were between 20-30 years, 82.97%, most patients were multiparous, 57.44%. Rheumatic heart disease was the cause in 91.48% while congenital heart disease was present in 8.51%. It is in accordance with a study by Riza et. al, where rate of RHD and CHD were 87.5 and 12.5% respectively.¹¹ In this study most of patients were in class 3-4, 63.82%, according to NYHA, followed by class 1-2 is 36.17%. Its important to note it is in contrast with study by Riza et. al, where most of cardiac patients were in class 1-2 (91.7%), while only 8.3% were in class 3-4.¹¹ In another study by E.Hink, A.C. Bolte.¹² According to NYHA 93.4% were in class 1-2, while only 6.6% were in class 3-4. Cesarean section was done in 63.82%, while SVD was conducted in 25.53%, 10.63% had ventouse delivery. Reasons of high cesarean section was that most of patients had class 3-4 cardiac disease (73.33%. It was recognized in vaginal delivery group 52.94% had class 1-2 cardiac disease. This study is in accordance with Aliraza et. Al.¹³ Where cesarean section rate was 76% and NVD 24%. Cesarean section may be considered in patients with moderate or severe mitral stenosis with class 3-4 symptoms.⁹ Mitral stenosis was commonest lesion, in this study, 87.23% followed by mitral regurgitation 4.25%. In the "European registry on pregnancy and heart disease".¹⁴ Mitral stenosis and /or regurgitation were the most common

types of valvular pathologies 63%. In this study 42.55% had preterm delivery, 6.38% IUGR, and 6.38% IUD. Eighty percent of patient who delivered preterm were in class 3-4, while in class 1-2 only 20% were delivered preterm. In a study by hameed A et. al.¹⁰ preterm deliveries were 20-30% while still birth 1-3%. A study by Nazia Ahmed et. al.¹⁵, showed preterm delivery 21.8% vaginal delivery in 66.3%, while 33.7% had cesarean section. Maternal mortality in this study was 2.12% while perinatal mortality was 10.63%. In western countries maternal mortality in cardiac disease is low, less than 3%.^{9,10} A study by Waseem. T et. al, showed 3.8% maternal mortality.¹⁶ Ashwani et. al, stated maternal mortality 3.3% and perinatal mortality.¹⁷ Our results were in accordance with study by Aliraza et. al, with maternal mortality 4% and fetal mortality 10%.¹³ High perinatal mortality in our study was due to the fact that 63.82% were in class 3-4, and fetal outcome depends on functional class of patients.

CONCLUSION

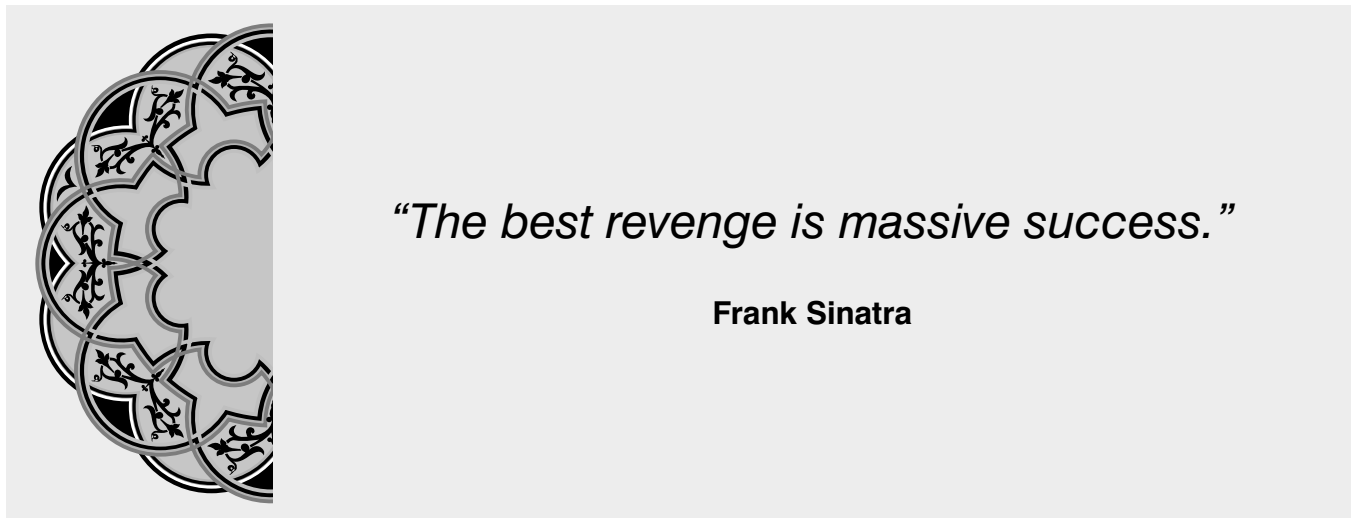
Cardiac disease important cause of maternal and perinatal morbidity and mortality. Its important to counsel all women of reproductive age with known cardiac disease, about increased fetal and maternal risk during pregnancy. Most patients first time, during pregnancy are diagnosed, due to lack of medical screening, so in early pregnancy cardiovascular assessment should be done. They should be managed by multidisciplinary team. Cardiologists and obstetrician should be responsible for educating women about safe contraception options. Cesarean section may be considered in patients with moderate or severe mitral stenosis with class 3-4 symptoms.

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AUTHORSHIP AND CONTRIBUTION DECLARATION

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