ORIGINAL RESEARCH PAPER

Gynecology

KEY WORDS: Cardiac Disease, Pregnancy, Complications, Peripartum Cardiomyopathy

CARDIAC DISEASE COMPLICATING PREGNANCY – MATERNAL AND FETAL OUTCOME

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INTRODUCTION

In india incidence of cardiac disease complicating pregnancy is 1 – 2 %.

Among which rheumatic heart disease is the commonest accounting for 90 – 95% , congenital cardiac disease being 5 %.

Due to untoward effect of physiological changes in pregnancy on compromised heart the maternal mortality due to cardiac failure is as high as 15%.

There are several periods during pregnancy where cardiac decompensation is especially dangerous .

Initially in between 12 -16wks when hemodynamic changes begin and critical period is between 28 – 32 wks of gestation where hemodynamic changes of pregnancy peak and cardiac demands are maximum.

50% of patients who develop congestive heart failure at this gestational age are in NYHA class II (or) class III in early gestation.

OBJECTIVE

To assess the maternal and fetal outcome in heart disease complicating pregnancy

MATERIALS AND METHODS

This is a prospective study conducted in the department of obstetrics and gynecology in NRI medical and general hospital Chinnakakani between august 2017 – august 2018 50 antenatal women who were admitted in the department of obstetrics and gynecology at term with confirmed heart disease were included in this study.

Relevant history pertaining to heart disease was noted. Thorough general, cardiovascular and respiratory system was examined to diagnose the type of lesion clinically and also to know NHYA class . later obstetric examination was done to know whether the patient is in labour or not.

Investigations done to assess the fetal and maternal status on admission blood investigation like hemoglobin percentage grouping & typing, urine analysis, ultrasonography , non- stress test, ECG & Echocardiogram to know the organic lesion & functional capacity of heart.

All the 50 patients were followed upto delivery and until one week postpartum period. maternal and fetal outcome was assessed in relation to parity , type of heart lesion, NYHA class , complications in the antenatal and postnatal period, mode of delivery , fetal well being.

RESULTS

50 women were included in my study . out of which 20were primipara , among patients with rheumatic heart disease around (23) half of them were in NYHA class I and II . Three patients had cardiomyopathy delivered spontaneously, one died due to cardiac failure. one patient had takayasis arteritis with out any complications in antepartum and postpartum period had spontaneous delivery and one presented with infective endocarditis infective endocarditis prophylaxis given and emergency ceasarean section done for obstetric indication.

We had three patients with mitral stenosis out of them one underwent mitral valvotomy and delivered spontaneously, other two were treated medically.

In relation to the parity (n=50)

Table no -1

S.NO	PARITY	NO.OF PATIENTS	PERCENTAGE
1	Pprimipara	20	40%
2	Multipara	18	36%
3	Grand Multipara	12	24%
Total		50	100%

Table no -2 Based on the NEWYORK HEART ASSOCIATION FUNCTIONAL CLASSIFICATION most of patients comes under NYHA class I and class II

S.no	Class	No. of patients
1	NYHA CLASS I	24
2	NYHA CLASS II	10
Total		34

Mode of delivery

Normal deliveries were – 21

Ceasarean sections were - 29 due to obstetric reasons

Table no -3

S.NO	Mode of delivery	No.of patients
1	Normal delivery	21
	Spontaneous instrumental delivery	19
	Vaginal birth after cesarean section (VBAC)	2
2	cesarean section	29
	Elective cesarean section	11
	Emergency cesarean section	18

Depends on anesthesia

Table no -4

S.NO	Mode of anesthesia	No. of patients
1	epidural	14
2	general	9
3	spinal	6
Total		29

Out of 50 patients, 36patients had complications. 24 are had obstetric complications 6 had associated medical complications , 6 had surgically corrected lesions one had mitral valve replacement, two under went mitral valvotomy and one during second trimester. Three underwent corrected percutaneous ballon aortic valvotomy . three had peripartum cardiomyopathy .

Table no-5

S.NO	Obstetric complications	No. of patients
1	Previous cesarean sections	18
2	Twin gestation	1
3	breech	1
4	Prelabour premature rupture of membranes	1

5	Past dates	1
6.	RH -ve	2
Total		24

Table no -6

S.NO	Medical complications	No. of Patients
1	Post thyroidectomy	1
2	diabetes	2
3	Pregnancy induced hypertension	2
4	Bronchial asthma	1
Total		6

Table No – 7
Surgical Corrections

S.No	Surgical Corrections	No. of Patients
1	Post Mitral Valvotomy	2
2	Percutaneous balloon aortic valovotomy	3
3	Post Mitral valve replacement	1
Total		6

DISCUSSION

Heart disease complicating pregnancy has been implicated as the second most common indirect cause of maternal mortality in INDIA next to anaemia[1] maternal mortality in some conditions can be as high as 30% . The rate of complications is related to several factors including maternal cardiac functional status , myocardial dysfunction.

The current study was undertaken between August 2011 and July 2012. Involving 50 pregnant women with cardiac disease confirmed by clinical and echocardiographic evaluation. from the time of admission till their discharge from hospital . patients were managed was according to our standard hospital protocol.

In our study majority of women were in the 21 -30 years of age group. A study group was analyzed retrospectively, 2223 pregnancies complicated by cardiac disease. They reported that 92 % of patients were less than 30 years of age which is similar to our study[2].

In our study spontaneous onset of labour was awaited in women admitted before labour .During the intrapartum period continuous maternal monitoring and fluid balance should be followed closely . In the postpartum period fluid balance must be monitored carefully during the first 24 hours to 72 hours, significant fluid shift occur and can lead to congestive heart failure . In patients with cardiac disease careful attention should be paid to rule out clinical pulmonary edema. For all the patients in second stage was cut short with forceps[5]. Cesarean section was done for obstetrical indications. In case of cesarean section manual removal of placenta is probably best avoided. Oxytocics like ergometrine have major effects on vascular tone and should not be used[6]. Prostaglandins can be cautiously used because it causes vasodilatation and increased cardiac output . In a study done by colman JM , et al. the rate of caesarean section was 27% out of all indications for caesarean sections, 4 % were maternal cardiac conditions.

The type of delivery had no association with maternal cardiac events[3].

FETAL OUTCOME

Fetal complications in pregnancies associated with maternal cardiac disease commonly include growth restriction and preterm delivery. In patients who are on drug therapy potential fetal effects must be considered.

The over all incidence of preterm births in pregnancies with cardiac disease is 28%[5] .

A study group reported by vasishata k, et al. a rate of 19.3% in 223 pregnancies complicated by maternal cardiac disease[2].

The incidence of prematurity in rheumatic heart disease group was 15% that in acyanotic congential heart disease was 17% all values being higher than present study . the reason being majority were at term and well managed. However the rate of preterm birth in the cyanotic congenital heart disease group was 60%.

Hameed A, kara alp IS, TUMMULA pp, et al. explained the high incidence of preterm birth as a consequence of chronic uteroplacental hypoperfusion[4].

The incidence of preterm births was 17.5% in a prospective study and 23% in a retrospective study.

CONCLUSION

In this study 50 patients were included , inspite of the best efforts we had one maternal death with peripartum cardiomyopathy died due to cardiac failure .one had postpartum hemorrhage due to warfarin as the patient did not stop warfarin intake until latent phase as she was an unbooked case and corrected with five units of fresh frozen plasma and vitamin k injections three doses and two units of whole blood and patient recovered .

To conclude all cardiac disease complicating pregnancy patients should be encouraged to be delivered in institution under multi –disciplinary care.

As we can avoid maternal morbidity and mortality and there is a need to educate them about family planning mostly barrier methods or surgical sterilization for males would be preferable.

Regular or frequent antenatal check ups should be advised to minimize associated obstetric and medical complications. Thorough screening should be done during antenatal period and 2D fetal ECHO should be advised in case of all cardiac diseases.

Pre –conceptional counseling, Early screening , frequent antenatal check ups should be educated to all antenatal women as early as possible.

Counseling for family planning to multiparas Should be advised strictly as soon as possible in the postpartum itself. To reduce the maternal morbidity and mortality.

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