ORIGINAL ARTICLE

To Find out Maternal and Fetal Outcome of Cardiac Disease in Pregnancy

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ABSTRACT

Aim: To determine maternal and fetal outcome of cardiac disease during pregnancy.
Setting: Services Hospital, Lahore.
Duration of Study: One year from January 2010 to December 2010.
Study Design: Retrospective study.
Sample Size: Twenty nine patients.
Results: Out of 29 patients 5 were PG. Twenty one patients were between G2-5 and only 6 patients were G6 onward. Twenty four patients were delivered vaginally. Caesarean sections were carried out in 5 patients. So, in cardiac patients, the mode of delivery was vaginal and C/S were carried out for obstetrical reasons. Ninety eight percent of patients had either class-I or class-II cardiac disease. Only 1(3%) patient had class-III cardiac disease. Ten (34%) patients had valve replacement. All these patients had their mitral valves replaced. No patient had aortic valve replacement. Most of the patients 24(83%) were booked and only 5(17%) were unbooked. All the booked patients also had evaluation from anaesthetist at the time of admission to have fitness from anaesthetist in case of emergency LSCS. In all the booked patient fresh echocardiography was carried out to know the status of her cardiac disease. Even when the unbooked patients were presented in the labour room both the cardiologist and the anaesthetist were involved. There was no maternal death and even no serious maternal morbidity. Ten patients had mitral valve replacement. No patient developed thrombus on the valve. Fetal outcome was good. There was no congenital defect in the babies due to warfarin.
Conclusion: Good maternal fetal outcome can occur in booked patients of cardiac disease with proper obstetric and cardiac care. Most of patients in Pakistan still have rheumatic heart disease.
Keywords: Cardiac disease in pregnancy, congenital heart disease, mitral or aerotic valves.

INTRODUCTION

Cardiac disease in pregnancy is rare in the developed world[1] but this is not the case in Pakistan. In Pakistan the most common cardiac disease in pregnancy is rheumatic heart disease[2]. In the developed world the most common cardiac disease in pregnancy is congenital heart disease under gone corrective or palliative surgery, in childhood survived into adult hood[3,4]. Although pregnancy complicated by heart disease is rare in United Kingdom, Europe and the developed world but cardiac disease is now the leading cause of maternal death in UK[3]. In Pakistan the most common cardiac disease is mitral stenosis or patients with heart valve replacements.[2] Because of the significant physiological changes in pregnancy not all women with cardiac disease are able to meet these increased physiological demands[1]. The care of these pregnant and parturient women requires multi disciplinary approach involving obstetrician, cardiologist and anaesthetist.

Most of the women have sufficient cardiac reserve to accomplish pregnancy[5]. Women with heart valve replacement require anticoagulation therapy with warfarin, heparin or low molecular weight heparin[2,5]. Anticogulation therapy during pregnancy is controversial since the interest of mother and the fetus are conflicting[6]. Good anticoagulation is acquired with warfarin but it causes embryopathy if given during the period of organonesis[7-10]. Warfarin also increases the risk of miscarries and still births[11].

METHODOLOGY

This study was conducted at Services Hospital Lahore for a one year period, from January 2010 to December 2010. All the patients beyond 28 weeks were included in the study, both booked and unbooked. Twenty nine patients were included in the study. This accounts to be about 1% of all the patients. Most of patients had rheumatic (25 out of 29). Women who developed rheumatic fever in childhood developed cardiac disease of their mitral or aortic valves.

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RESULTS

Out of 29 patients 5 patients were PG. Twenty one patients were between G2-5 and only 6 patients were G6 onwards. Out of 29 patients, 24 patients were delivered vaginally. Caesarean sections were carried out in 5 patients. 2 were elective Caesarean sections and 3 were emergency Caesarean sections. Out of 2 elective Caesarean sections, One patient was previous Caesarean section and postdate and 1 for bad obstetrical history. 3 were emergency Caesarean sections, 2 were due to fetal distress and 1 for failed progress of labour. So in cardiac patients, the mode of delivery was vaginal and Caesarean sections were carried out for obstetrical reasons. Ninety eight percent of patients had either class-I or class-II cardiac disease. Only 1(3%) patient had class-III cardiac disease. Out of 29, 25(86%) patients had acquired cardiac disease. One (3%) patient had congenital heart disease and only 1(3%) was with atrial fibrillation. Of the patients with acquired cardiac disease, all had rheumatic heart disease and mostly with mitral stenosis.

1. Rheumatic heart disease 25.
2. Congenital heart disease 2
   a Esermenger Syndrome
   b Atrial septal defect
3. Acquired cardiac disease
   a Atrial fibrillation and ST depression
   b Angina

The patient with essermenger syndrome was G_3P1+1. She came at 31 weeks with preterm labour. She delivered a baby boy of 1.3kg with A/S 6/10 and 8/10. The baby was shifted to the nursery. The mother after delivery was stable and shifted to PIC. One cardiac patient had a twin pregnancy. She was G_8P4+3 and came at 36 weeks with labour pains. She delivered a baby boy of 1.6kg and baby girl of 1.9kg. Both the mother and the baby were fine and patient had rheumatic heart disease with mitral regurgitation and tricuspid regurgitation.

Baby weight: In my study most of the babies delivered were between 2.5kg and 3kg. No baby was more than 3.kg. In this study both the maternal and the fetal outcome were good. There was no maternal mortality. Only one preterm baby expired after 3 days. Out of the 29 patients 5(17%) were PG, 18(62%) patients were between G2 to G5. Only 6(21%) patients were G6 and onwards. Ten (34%) patients had valve replacement. All these patients had mitral valve replacement. No patient was with aortic valve replacement.

Mode of delivery: Out of 29 patients, 24(83%) were delivered vaginally, C/S were carried out in 5(17%). One (3%) patient was with previous to Caesarean sections and 1(3%) was BOH. So in cardiac patients mode of delivery was vaginal and C/S was carried out for obsteric reasons only. Three (10%) had emergency C/S.

Booked and unbooked patients: In the current study most of the patients, i.e., 24(83%) were booked and only 5 (17%) were unbooked. It is contrary to most of the population in Pakistan. The reason for this is that these patients were booked patients of PIC and were referred to Services Hospital Lahore, for care of their pregnancy. Patients were given antenatal care in laisone with cardiologist of PIC. At full term, fitness for vaginal delivery/ caesarean section were taken from cardiologist for all booked patients. All the booked patients also had evaluation from anaesthetist at the time of admission to have fitness from anaesthetist in case of emergency LSCS. In all the booked patients, fresh echocardiography was carried out to know the status of her cardiac disease. Only 5 patients were unbooked. Even when these patients presented in labour room both the cardiologist and anaesthetist were involved.

Table 1: Frequency of gravidity

	n	%age
PG	5	17
G2-G5	18	62
G6	6	21

Table 2: Indications of caesarean section

	n	%age
Vaginal delivery	24	83
Caesarean sections	5	17

Table 3: Frequency of baby weight

Weight (kg)	**n**	**%age**
<2.5kg	8	28
2.5 – 3kg	21	72

Mean±SD = 2.62±0.28

Table 4: Frequency of booked and unbooked patients

	n	**%age**
Booked	24	83
Unbooked	5	17

DISCUSSION

In this study, the maternal and fetal outcome was good. There was only one perinatal death. It was a premature baby of the patient with essermenger syndrome. This is in consistence with the study of presbitero P, somerbille. They found in their study that in cynotic congenital heart disease the chance of live birth was less than 20%[12].

Out of the 25 patients, 10 patients had prosthetic heart valves. All were with mechanical heart valves.

All these patients were given anticoagulation therapy during pregnancy. Most of them received heparin or LWH during first trimester and then warfaring were given throughout pregnancy till 36 weeks. All these patients were shifted to heparin or LWH after 36 weeks. Their heparin was stopped 6 hours before labour or surgery.

There was no serious maternal mortality or thrombosis. This is contradictory to study of March[13]. Who found serious maternal morbidity during his study in patients with prosthetic heart valve receiving anticoagulation therapy[4].

In my study all patients with valve replacement had mitral valve replacement. A similar study was carried out by Nassar which is contradictory to my study[2]. They studied 33 women with valve replacement. In their study the valve replacement was mitral (60%), aortic (18%) and both (21%). In my study there was no maternal death. This is consistent with the study of Nassar et al. In their study there was no maternal death, however 3 patients had mitral valve thrombosis[2].

Most of the patients in our study were PG5 or G2 or G3. A study carried out by Akhtar et al which is contradictory with our study. In their study 33 women with mechanical heart valve, 22 had single, 22 had single and 10 were G2 or G3[14].

In this study there was no haemorrhage requiring blood transfusion. This is contradictory to study carried out by Akhtar et al who found in his study, requiring blood transfusion in 2 (5%) patients in warfarin group[14].

CONCLUSION

Good maternal fetal outcome can occur in booked patients of cardiac disease with good obstetric and cardiac care. Most of patients are still of rheumatic heart disease in Pakistan.

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