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A STUDY OF HEART DISEASE IN PREGNANCY IN WESTERN INDIA- A HOSPITAL BASED PROSPECTIVE STUDY

Obstetrics & Gynaecology

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ABSTRACT

Aims and objectives: This study aims at studying the incidence of various heart disease in pregnancy, the socio demographic profile of the women and the outcome in terms of mode of delivery.

Methodology: This was a hospital based prospective study from December 2011 to December 2013 in which 60 women were studied in the department of gynaecology and obstetrics in a tertiary teaching institute in western India.

RESULTS: Out of 60 women studied in total, the incidence of Heart disease in Pregnancy in my study was 0.40%. Majority of the patients of Heart disease during Pregnancy had Rheumatic valvular disease (89.99%) with mitral valve involvement (90%) while congenital heart disease is seen in less patients (10%).Outlet forceps delivery was conducted in 34 patients (57.62%) of the patients to cut short second stage of labour and to prevent maternal exhaustion in patients. 22 patients (37.28%) had normal vaginal deliveries and only 3 patients (5.08%) underwent caesarean section for obstetric indication.

KEYWORDS

heart disease, pregnancy

INTRODUCTION:

Incidence of cardiac disease is less than 1% amongst hospital deliveries but in tertiary centres it maybe higher due to referrals. Commonest cardiac lesion is of rheumatic origin followed by the congenital ones. With other understanding of the physiological changes of pregnancy, especially in relation to the hemodynamics of circulation a more pragmatic and rational approach can be undertaken to treat the patient with cardiac disease. The maternal mortality of heart disease which has remained static for quite some time can be lowered to western standards, if determined effort is made to diagnose and treat the disease in early pregnancy. The advances in diagnostic radiology, electrocardiography, cardiac catheterization, echocardiography and angiography and anaesthesia have now made possible a better evaluation of the patient's cardiac status. This has been manifested not only by the reduction in therapeutic abortion, maternal mortality and morbidity from heart disease but also by the fact that greater number of pregnant cardiac patients are carried to term and delivered safely The widening scope of cardiac surgery has given further impetus to the care of cardiac patients.

The benefits of careful antenatal and intranatal supervision go a long way in maintaining the patient's health and morale at its highest pitch. The child bearing state is accompanied by significant alterations in the circulatory and respiratory physiology. A diseased heart has to adapt itself to these changes. A normal heart can easily cope up with these unavoidable changes but the diseased heart fails and decompensates. Hence the need for maintaining cardiac efficiency at its highest peak during pregnancy, labour, and puerperium by means of careful antenatal, intranatal and postnatal supervision.

AIMS AND OBJECTIVES:

1. To study the incidence of various heart diseases in pregnancy and their socio-demographic profile.
2. To study the outcome in terms of vaginal versus abdominal (lscs) delivery.

METHODOLOGY:

This was a prospective study carried out at a major tertiary teaching institute in Western India over a period of 2 years from December 2011 to December 2013 and a total of 60 women were studied. Pregnant women with heart disease following up in ANC OPD and pregnant patients admitted in medical wards were studied. This study also includes the referred cases of heart disease complicating pregnancy, diagnosed for the first time during labour. In all cases a detailed record was maintained regarding age, parity, medical and obstetric history, symptomatology, physical signs, systemic and obstetrical examination. Study design is prospective and observational.

These cases were assessed by senior cardiologist using 2 D Echo for the purpose of documentation and evaluation. Patients were treated as a high risk pregnancy and managed accordingly. These patients were monitored more vigilantly in the ANC OPD and hospitalised if necessary. A multidisciplinary approach with close liasoning of the Cardiologist, Physician, the Obstetrician and anaesthetist were the key. All diagnosed cases of heart disease including rheumatic heart disease as well as congenital heart disease were studied.

Patients with associated medical disorders like bronchial asthma, diabetes mellitus , tuberculosis , severe anaemia , pregnancy induced hypertension and multiple pregnancies were excluded from my study.

OBSERVATION AND RESULTS:

Of the total 60 patients of heart disease, 50 patients (83.33%) were aged 20 -30 years. Only 5% of cases were more than 35 yrs. There were no cases of ischemic heart disease in pregnancy found in this study.

In my study, 36 patients (60 %) of the patients of heart disease were belonging to lower socioeconomic class. All these 36 patients were diagnosed as rheumatic heart disease.

Of the 24 cases of heart disease that belonged to middle class category, 6 patients (25%) had congenital heart disease and 18 patients had rheumatic heart disease. (Table 1)

In my study Rheumatic heart disease was found in 54 patients (89.99%). Of these 43 patients (71.66%) had mitral stenosis. 11 patients (18.33%) had rheumatic heart disease with mitral regurgitation. Only 6 patients (10%) had congenital heart disease.

7 patients (11.66%) underwent cardiac intervention / surgery prior to or during second trimester of pregnancy. (table 2)

Outlet forceps delivery was conducted in 34 patients (57.62%) of the patients to cut short second stage of labour and to prevent maternal exhaustion in patients.

22 patients (37.28%) had normal vaginal deliveries and only 3 patients (5.08%) underwent caesarean section for obstetric indication. 2 LSCS done in view of primigravida with breech presentation in labour and one LSCS was done for previous LSCS with CPD. All LSCS were done in general anaesthesia.
(figure 1)

DISCUSSION:

Heart disease complicates 1% of pregnancies with range of 0.3-2.7 % of pregnancies (1,2). Although a relative decline in the incidence of

rheumatic fever and a rise in congenital heart disease has been reported because of better modalities of diagnosis, still rheumatic heart disease is responsible for the majority of the cases with dominant lesion of mitral stenosis in developing countries (5).

Pregnancy is associated with many physiologic changes, to bring these women of heart disease safely through pregnancy, a good coordination between the Cardiologist, Obstetrician, Physician and anaesthetist is necessary.

60 patients of heart disease were studied prospectively from time of presentation to puerperium.

Incidence of Heart disease

In the period of 2 years total number of deliveries were 19,450 in our institution, of which 78 patients were found to have heart disease, giving incidence of heart disease 0.40% which is comparable with study conducted by Sudhir Bose (0.45%) and Sachdev (0.46%). Of these, 16 patients had associated medical disorders and 2 cases of twin pregnancy with heart disease were excluded from my study.

In my study, out of 60 patients, 54 patients (89.99%) had rheumatic heart disease and mitral valve was affected in 54 patients (90%) and of these 71.66% had mitral stenosis (3, 4). Rheumatic heart disease with mitral regurgitation was seen in 11 patients (18.33%).

6 patients (10%) had congenital heart disease, of these 4 patients (66.66%) had atrial septal defect (ASD) of ostium secundum type. Two patients (16.66%) had small ventricular septal defect.There were no cases of ischemic heart disease and peripartum cardiomyopathy in this study.

Age of the patient

In general, the prognosis for these patients becomes poor as age increases, because the duration of heart disease increases. The medical and obstetrical complications increase with age and more patients tend to fall in the higher parity groups with advancing age. In the study conducted by Asghar F and Kokab H (2005) ages of women with cardiac disease in pregnancy ranged from 26-35 yrs (64%). (7)

Most of the cases (83.33%) in this study were aged 20-30 yrs. Only 5% of cases were more than 35 yrs.

Socioeconomic class

In the study conducted by Vijaykumar M et al (1994) RHD is more common in lower socioeconomic class. (6). In developing countries where the incidence of rheumatic fever and streptococcal sore throat is high, the incidence of cardiac disease also high.

In my study, 36 patients (60 %) of the patients of heart disease were belonging to lower socioeconomic class (Kuppuswamy classification). All these 36 patients were diagnosed as rheumatic heart disease.

Of the 24 cases of heart disease that belonged to middle class category, 6 patients (25%) had congenital heart disease and 18 patients (75%) had rheumatic heart disease.

MODE OF DELIVERY

In the study conducted by Hiralal Konar and Snehamay C (2012), 46.6% had spontaneous vaginal deliveries.

In the study conducted by Faiz S.A. et al (2003), caesarean section was performed in 3.6% of cases (8)

Outlet forceps delivery was conducted in 34 patients (57.62%) to cut short second stage of labour and to prevent maternal exhaustion in labour.

22 patients (37.28%) had spontaneous vaginal deliveries.

The incidence of caesarean section is low in all series .Caesarean section was performed in only 3 cases for obstetric indications in my study. 2 lower segment caesarean sections were performed in view of primigravida with breech presentation in labour and one LSCS was performed in view of previous 1 LSCS with CPD. These LSCS were done under general anaesthesia and postoperative period was uneventful.As tocolysis is contraindicated in heart disease, patients who presented as threatened preterm were not put on tocolysis but given injection betamethasone 12 mg 12 hrly to improve fetal lung maturity, complete bed rest and limitation of physical activity. All the patients in my study received injectable antibiotics for 7 days after delivery as prophylaxis against bacterial endocarditis.

CONCLUSIONS:

Thus Rheumatic heart disease was found to be more common in lower socioeconomic group. More studies are needed to validate the findings of this study.

TABLES AND FIGURES:

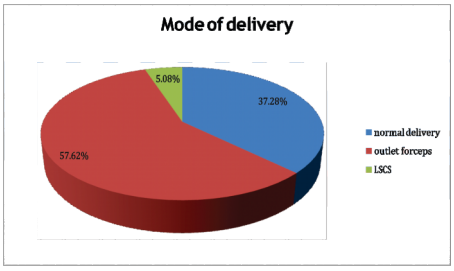
Table 1 showing sociodemographic profile of the study subjects

Characteristic	Frequency (n=60)	Percentage (%)
Age in years		
20-24	26	43.33
25-29	24	40
30-34	7	11.66
>35	3	5
Socioeconomic class (kupusswamy's scale)		
Lower	36	60
Middle	24	40
uppper	0	0

Table 2 showing incidences of various heart diseases based on 2D ECHO findings

2 D Echo findings	Frequency (n=60)	Percentage
RHD with mild MS	26	43.33%
RHD with moderate MS	8	13.33%
RHD with severe MS	9	15.00%
RHD with mild MR	9	15.00%
RHD with severe MR	2	3.33%
Congenital heart disease(ASD,VSD)	6	10.00%
Ischemic heart disease	0	0.00%
Total	60	100%

Figure 1. showing the outcome in terms of mode of delivery



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