



Study of 50 Cases of Cardiac Disease in Pregnancy

KEYWORDS

Cardiac disease, Pregnancy, BMV in pregnancy

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ABSTRACT

Incidence of cardiac disease in pregnancy in our hospital for year 2000 was 0.92%. 76% of my patients were from lower socioeconomic group. The most common lesion in my series was rheumatic and 16% constitute congenital and other lesions. Complications in the form of pulmonary congestion was more common in severe MS or severe MR complicated by pulmonary hypertension. Most of my patients had normal vaginal delivery. Vaginal operative delivery was done for prophylactic reason. Average weight of babies was 2.44kg cardiac patients are prone to deliver small babies. Contraception in the form of barrier is a preferred temporary method for cardiac patients. Tubal ligation is the preferred permanent method of contraception.

INTRODUCTION. Cardiac disease is encountered in nearly 1% of pregnancies and the incidence is increasing. The increased incidence is due to advances in cardiac management over past 35 yrs particularly in cardiac surgery and drugs which have allowed more women with congenital and other anomalies not only to survive to reach the age of childbearing but also to carry out the pregnancy to term successfully. Some cardiac lesions like stenotic valvular disease, cases complicated by pulmonary hypertension and cyanotic disorders are associated with increased maternal and fetal morbidity and mortality and therefore require close monitoring during pregnancy. In developed countries there is decline in rheumatic heart disease an increase in congenital heart disease while in developing countries rheumatic heart disease is still a major cardiac lesion due to high rate of illiteracy, lack of hygiene and ignorance about basic health care. In our country we come across a lot of cases of mitral stenosis, close mitral valvotomy still holds a prestigious role as a life saving measure in patients who develop acute pulmonary edema not responding to medical management. Pregnancy is no bar to valve replacement under extracorporeal circulation. Pregnancy after successful valve replacement including continuation of anticoagulant therapy is a manageable condition.

MATERIAL AND METHODS.

The present study comprises of 50 cases of pregnancy with cardiac disease. The cases are selected from outdoor antenatal clinic from august 1999 to march 2001. The cases are studied antenatally in ward and in labour. They are thoroughly evaluated for cardiac problems.

1. Detailed history taking including thorough interrogation about their cardinal cardiovascular symptoms.
2. Thorough general and physical examination specially cardiovascular system, all cases were confirmed by joint consultation with cardiologist.
3. Antenatal care and management.
4. Management during pregnancy and puerperium.
5. Advise about cardiothoracic surgical consultation.

OBSERVATION AND DISCUSSION.

INCIDENCE:- the incidence in our series was 0.92%. various incidence recorded by different authors was in the range of 1% to 3.2%

BOOKED/EMERGENCY.

Out of 50 cases, 72% were booked while 28% were emergency cases, 3 or more antenatal visits book the patient.

Table 1. SOCIOECONOMIC CONDITION.

MODIFIED PRASAD'S CLASSIFICATION	PER CAPITA INCOME	NO.OF CASES	PERCENTAGE.
Class I	2071 & above	-----	-----
Class II	1035-2070	-----	-----
Class III	621-1034	12	24
Class IV	310-620	18	36
Class V	<309	20	40

As shown above 76% of my patients belonged to lower socioeconomic group class IV and V. patients of these groups are more prone to rheumatic fever in childhood due to improper hygiene. Out of 50 patients 5 patients had a definite history of rheumatic fever in childhood.

Table 2. INCIDENCE IN AGE GROUP.

Age group in years	No. of cases	Percentage.
16-20	3	6
21-25	13	60
26-30	11	22
31-35	5	10
36-40	1	2

As shown above more than 32% of patients are in the age group of 21-30years because of early marriages and high fertility.

PARITY DISTRIBUTION.

In my series 36% of the patients were primigravida and 60% of of gravida less than 4. Primigravida and patients of low parity are higher in number than grandmultiparae as cardiac patients are explained about the risks of recurrent pregnancies and deterioration of maternal cardiac status in 3rd and 4th delivery. Most patient adapt contraception or undergo permanent sterilization after family is complete.

Table 3. TYPE OF CARDIAC LESIONS.

type	Present series		k. sikdar	Bitsch and colleagues.
	number	percentage		
rheumatic	42	84	96.4%	50%
Congenital & others	8	16	3.6%	50%

Analysis of cardiac lesion in patients of my series shows preponderance of rheumatic heart disease forming main bulk of cases i.e. 84%. With progressive rise in socio-economic status in western countries the traditional preponderance of RHD is less whereas congenital heart disease is more common due to early and accurate diagnosis and advances in surgical management allowing more patients with CHD to reach childbearing age and becoming pregnant.

Table 4. DISTRIBUTION OF VARIOUS HEART LESIONS.

DOMINANT VALVE DEFECTS	No. of cases	Percentage.
Pure MS	3	6
MS+mild MR	20	40
Dominant MR	10	20
MR+AR	5	10
MS operated in past	3(BMV)1(MVR)	8
ASD	6	12
VSD	1	2
MVP	1	2

In my series the dominant heart lesion was in the form of mild to severe MS with MR, followed by dominant MR, MR+AR and then pure MS.

Table 5. MAIN COMPLICATIONS IN RELATION TO DOMINANT VALVE DEFECT.

lesion	Pulmonary congestion	Pulmonary hypertension	Pulmonary edema.
Pure MS	1	3	-
MS+MR	3	8	-
MR	1	3	-

Pregnant patients with RHD are at increased risk of pulmonary congestion, pulmonary edema of congestive cardiac failure. Five patients of my series developed pulmonary congestion while 14 patients had pulmonary artery hypertension. A mild obstruction at mitral valve is transformed into severe one in pregnancy due to increased blood volume so pregnant patients are more prone to pulmonary congestion and pulmonary edema.

ASSOCIATED OBSTETRIC COMPLICATIONS.

Anemia in pregnant cardiac patient is directly responsible for cardiac failure as it leads to increase in cardiac output and heart rate and thus further accentuates the circulatory overload. Preeclampsia caused increase fluid retention and increases the burden on an already compromised heart. Twins pregnancy also causes increased fluid retention and preterm delivery.

Table 6. MODE OF DELIVERY.

	Present no.	percentage
MTP	1	2
PTVD	8	16
FTND	28	56
FORCEPS	8	16
VACCUUM	1	2
BREECH	2	4
LSCS	3	6

In my series 56% of patients had normal delivery, 18% had instrumental delivery which curtails the effort and duration of second stage of labour. Caesarean section was done in 3 patients only for pure obstetric indications. First trimester termination of pregnancy by vacuum aspiration is safer than continuation of pregnancy in cardiac patients. Prophylactic antibiotics should be given to all cardiac patients in labour to prevent bacterial endocarditis.

PERINATAL OUTCOME.

Average weight of full term babies in my series is 2.44kg. there is evidence that infants of women with cardiac disease are either premature or light for date.

Prematurity is very common in cardiac patients . In my series 8 pregnancies were complicated by preterm labour resulting in 4 still births and 3 neonatal deaths due to prematurity and hyaline membrane disease.

FETAL MORTALITY.

In my series fetal mortality was 14%. It was 14.07% according to K. sikdar(1980).

MATERNAL MORBIDITY AND MORTALITY

In my series of 50 patients there was no maternal mortality. Maternal morbidity in the form of pulmonary congestion was observed in five patients. CONTRACEPTION.

In my series of 50 patients, 23 patients were primigravida, 14 were second gravida with one live issue. They chose barrier mode of contraception. While patients with two or more children preferred either tubal ligation, depoprovera or barrier. Oral contraceptive should not be used due to its cardiovascular effects however low dose oc pill may be given with strict monitoring for limited period.

Table 7. PRE MITRAL VALVOTOMY AND PREGNANCY OUTCOME.

Mode of delivery	No. of patients with BMV
FTND	4
FT OUTLET FORCEPS	1
LSCS	1

Six of my patients had undergone balloon mitral valvotomy before present pregnancy. None of these patients had any complications in the form of pulmonary edema or heart failure. 4 patients delivered normally, one patient had prophylactic forceps delivery and LSCS was done in one patient for non progress of labour. BMV is only a palliative measure and deterioration of valve function may occur with time.

PREGNANCY SUBSEQUENT TO VALVE REPLACEMENT.

According to Japanese journal article 1986 on " pregnancy and delivery following cardiac operations" it was observed that a stable course and successful delivery were observed

in patients who were treated surgically while impairment in clinical condition was observed in non surgical patients. Biological xenografts were preferable to older metal grafts. Anticoagulant therapy is necessary in patients with valve replacement to prevent embolism. Neither nonfractionated nor low molecular weight heparin cross placenta hence both are safe for fetus. Oral anticoagulants cross placenta and are associated with warfarin embryopathy, CNS anomaly and fetal haemorrhage. However they can be given to nursing mothers.

CONCLUSION.

Cardiac patients constitute 1% of all pregnant patients. Joint consultation of obstetrician with cardiologist and perinatologist can improve the outcome in these high risk patients.

CONFLICT OF INTEREST.

The authors here declare that they have no conflict of interest.

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