

HEART DISEASE WITH PREGNANCY

by

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Disease of heart when associated with pregnancy is one of important causes of maternal deaths due to systemic diseases. During pregnancy and labour extra stress is put on the heart due to haemodynamic changes. Type of heart lesion as well as the margin of reserve power of heart to face extra demands during pregnancy is important. In India, due to poor antenatal care, patients are not diagnosed early and many of them come in congestive failure as emergency admissions. Maternal mortality due to heart disease can be reduced appreciably by good antenatal care, early diagnosis, management with the help of cardiologist and surgery in selected cases. Advances in cardiology have resulted in more successful treatment of pregnant cardiac patients.

Here is the review of 52 cases of heart disease with pregnancy in LNJP Hospital during the year 1977 and 1978.

Incidence of Heart Disease and Type of Lesion

During the year 1977 and 1978 we had 5,237 deliveries and 52 cases of heart disease with pregnancy. Out of 52 cases,

47 had rheumatic heart disease and 5 had congenital heart disease. In Western countries, incidence of rheumatic heart disease has come down from 93% to 75% due to good management of rheumatic fever and surgical treatment of congenital heart in early years which leads to more cases of pregnancy with congenital heart disease.

After 30 years of age we had 3 pregnant patients and this low incidence of pregnancy after 30 years is probably due to decreased fertility and increasing severity of disease. Pregnancy in early age group is due to early marriages in this country (Table I). Out of 52 casts, 30 were admitted as emergency.

Table V shows functional grades. These functional grades alone are not correct for assessing prognosis during pregnancy. Mortality due to pulmonary oedema has been found even in Grade I and Grade II cases of tight mitral stenosis when cardiac function is good. So for evaluation of prognosis clinical parameters are more significant. In functional grade IV maternal mortality is very high. In our series all Grade IV were admitted as emergency admissions and these improved during stay in hospital.

We did not have any hypertensive, thyrotoxic or syphilitic heart disease cases. Mitral stenosis was the dominant lesion. There were made 32 cases out of which 11 had valvotomy (Table III). We had 5

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Accepted for publication on 10-1-80.

TABLE I
Age Groups With Number of Pregnancies

Age in yrs.	Primi	2nd gravida	3rd grav.	4th grav.	5th gravida
15-20	8	2*P	1	1**	—
21-25	10	14**	2	—	2*****
26-30	3	3*	3*	—	—
31-35	—	—	1	1**	—
36-40	—	—	—	1	—

* Stands for abortion.

P—Stands for premature delivery.

TABLE II
Grading of Heart Disease (Functional)

Grade I	14
Grade II	22
Grade III	2
Grade IV	14
Total	52

TABLE III
Classification of Rheumatic Heart lesions

Groups	Total cases
A. Single valve lesion Mitral valve stenosis	21
B. Mitral stenosis operated	11
C. Mitral stenosis with other valve	9
D. Lesion other than mitral stenosis	6

cases of congenital heart disease (Table VII) and 1 out of them died after delivery.

In 11 cases of valvotomy done, only 4 were corrected and others went into failure or had mitral regurgitations (Table V).

Table VI shows the associated complica-

TABLE IV
Types of Congenital Heart Lesion

Pulmonary stenosis with ASD	1
ASD with PAH with CHF with Atrial fibrillation	1
Operated pulmonary stenosis	1
Aortic stenosis	1
Pulmonary stenosis with VSD	1

tions during pregnancy. Patients who had haemoglobin less than 10 grams, were taken as anaemia. Border line blood pressure for toxæmia was taken as 130/90 mm of Hg. Anaemia, toxæmia and various infections modify the prognosis in heart diseases.

Table VII shows the nature of delivery. LSCS was done for 1 case who had foetal distress. Total duration of labour was less in majority of cases of heart disease.

Seven cases had postpartum haemorrhage (PPH) (Table VIII). Out of these 7 cases 2 were in failure and 1 treated case of congestive heart failure went into failure after delivery and had PPH. Putting the other way round, out of 14 cases of congestive heart failure 3 had PPH. This shows increased incidence of PPH in failure cases.

One case of congenital heart disease (Ventral septal defect with pulmonary stenosis) died after delivery. She was admitted at 38 weeks with mild pre-eclamptic toxæmia and was functional grade II. She was not digitalised during pregnancy. Patient had accidental haemorrhage in first stage and mild PPH after delivery. Foetal heart had disappeared and diagnosis of accidental haemorrhage was made after delivery. She

TABLE V
Further Break up of Different Groups of Rheumatic Heart Lesions

Group A	Group B	Group C	Group D
M.S.—10	Mitral Valvotomy—4	M.S.M.R.—1	M.R.—4
M.S. with P.A.H.—4	Mitral valvotomy leading to M.R.—1	M.S.M.R. with P.A.H.—2	M.R. with PAH with CHF—1 A.S.A.R.—1
M.S. with P.A.H.—4 with C.H.S.	Mitral Valvotomy—1 leading to M.R. with P.A.H. with atrial fibrillation	M.S. with M.R. with T.R. with P.A.H.—1	
M.S. with T.R. with P.A.H. with C.H.F.—2	Mitral valvotomy leading to C.H.F.—4	M.S. with A.R.—1	
M.S. with T.R. with P.A.H. with C.H.F. with a trial fibrillation—1	Mitral Valvotomy leading to M.R. with C.H.F.—1	M.S. with A.S.—1 M.S. with P.A.H. with A.R.—1 M.S. with A.S. with A.R.—1 M.S. with A.R. with P.A.H. with C.H.F.—1	

TABLE VI
Complications during Pregnancy

Anaemic	9
Toxaemia	5
Congestive failures	14
Haemoptysis	1
Atrial fibrillation	3
Pulmonary embolism	1
Chest infection	4
Otitis interna	1
Fever with Rigor	1
Pulmonary oedema	-
Ac. Rheumatic fever	-
S.A.B.C.	-

TABLE VII
Nature of Delivery

Total deliveries	37
Normal vaginal delivery	19
Outlet forceps	16
Vacuum delivery	1
L.S.C.S.	1 F.D.
Abortion	1
Undelivered	14

TABLE VIII
Post partum Haemorrhage

Details of PPH	
Total cases	7
No. of cases who had transfusion	3 (2 packed cells 1 whole blood)
Cervical tears	1
Congestive failure	3 (2 had packed cells)
Maternal death	1 Pulmonary stenosis

had marked tachycardia after delivery and had pallor and sudden perspiration. She died within half hour of delivery and exact cause of death was not known. Blood loss was approximately 500 cc and retroplacental clot was of 100 cc.

Acyanotic heart disease tolerates pregnancy better as there myocardium is in good condition but sudden changes in blood pressure and circulatory volume

are taken badly by these congenital heart lesions.

TABLE IX
Pregnancy Outcome

Live births	33
Still births	2 (Accidental—1 P.E.T.—1)
Premature	2
Abortion	1

Table IX shows the pregnancy outcome. Out of 2 still births, 1 came with absent foetal heart sounds. She was unbooked primi having mitral stenosis and was functional grade II. The other still birth was in the case of VSD with pulmonary stenosis functional grade II and mild pre-eclampsia. This patient had accidental haemorrhage. Out of 2 premature deliveries, 1 was a case of atrial septal defect with pulmonary hypertension with congestive failure and left to right shunt. She was admitted in failure. The other case was not in failure. We had 1 maternal death out of 38 cases who delivered giving maternal mortality of 2.6% in cases of heart disease.

Discussion

Incidence of heart disease varies between 0.4-3.4% depending upon frequency of rheumatic fever in the area. Lesion is mostly of rheumatic origin. In Western countries incidence of rheumatic heart disease has come down due to better management. In India, however, incidence is same due to poor health care. In our review 90.3% were of rheumatic origin and 9.2% of congenital origin. We did not have any case of Thyrotoxic, hypertensive or syphilitic heart disease. This may be due to the fact that most of our patients belong to younger age group.

Four of 11 cases of valvotomy did not go into failure during pregnancy. Rest of them either had congestive heart failure or mitral regurgitation. The had valvotomy done, 2 to 5 years back. Long term evaluation of the mothers after valvotomy does not show continued improvement and many of them deteriorate or need a second operation. Deterioration seems directly related to the time lapse following operation. Mitral valvotomy is only a temporary palliative measure.

We had 7 cases of postpartum haemorrhage, thus showing the high incidence of PPH in heart disease cases. This may be due to non use of prophylactic methergin.

We had maternal mortality of 2.6% in cases of heart disease. The incidence of maternal mortality due to heart disease had fallen to 3.4% in 1970-77 from 21.4% in 1962-69 in our institution, due to better understanding of treatment. Pregnancy is just an incidence in cardiac cases when there is departure from haemostatic balances and there is no evidence that pregnancy as such lessens the life expectancy of mothers. Long term prognosis for these cardiac cases can be improved if they are followed up properly because they come in contact with good team of cardiologists and obstetricians during this period. Most of the cases can be treated with good medical management and interruption of pregnancy and cardiac surgery during pregnancy is rarely indicated.

Acknowledgement

We thank Dr. S. K. Lal, Dean, Maulana Azad Medical College and Dr. S. D. Vohra, Medical Supdt. L.N.J.P.N. Hospital, for permitting us to use the hospital records.