

PERINATAL OUTCOME OF PREGNANCIES COMPLICATED BY HYPERTENSION

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SUMMARY

The incidence of hypertension during pregnancy was 8.95 per cent amongst 3014 deliveries. The overall perinatal mortality (PNM) in hypertensive group was 20 per cent and the corrected PNM was 16.3 per cent. A progressive increase in PNM was observed with increasing severity of the disease. About 1/3rd babies were born preterm with a PNM of 54.2 per cent and 34.8 per cent babies born at term were low birth weight. The incidence of babies born preterm and small for gestational age also showed a progressive increase with increasing severity of disease. The incidence of neonatal asphyxia was three times high in severe hypertension and four times in eclampsics in comparison to mild hypertensives. Proteinuria of more than 2 g/L and serum uric acid concentration of 6 mg% or more was associated with a very high PNM. About three-fold increase in PNM was observed in women with less than three ANC visits. Reasons for very high PNM observed here and possible measures to reduce it are discussed.

Introduction

Toxaemia of pregnancy is the second most common cause of fetal and early neonatal deaths and accounts for 10-15 per cent of perinatal deaths. In pregnancies resulting in perinatal deaths, the incidence of hypertension is twice as high as compared to those with no fetal loss. In FOGSI report, hypertensive diseases were found in 11.6 per cent of women who lost their babies as compared to 5.3 per cent

in those with living babies. The present study was carried out for finding out the incidence of pregnancies associated with hypertensive disorders and to study the perinatal outcome in these patients. The factors affecting the perinatal mortality were also analysed.

Material and Methods

Out of 3014 patients delivered at Sassoon General Hospitals, Pune, 270 were found to be hypertensive (Blood pressure of 140/90 or more). Hypertension was graded as mild, if the blood pressure

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(BP) was less than 160/110 mm of Hg and severe when systolic blood pressure was 160 mm of Hg or more and/or diastolic BP of 110 mm of Hg or more. The patients having convulsions or coma were grouped separately as having eclampsia. There were 155 patients of mild, 82 patients of severe hypertension and 33 patients of eclampsia. In all these patients, the incidence of prematurity, low birth weight and asphyxia was noted. The causes of all fetal and early neonatal deaths were investigated. The perinatal mortality was correlated with severity of hypertension, degree of albuminuria, serum uric acid concentration and retinal changes. The perinatal outcome in emergency admission group was compared with that in hospitalised hypertensive patients.

Observations

The incidence of hypertension during pregnancy was 8.9 per cent. Amongst all these patients, 10 patients had multifetal

pregnancy. One patient of severe toxæmia having vesicular mole was excluded from the study. Thus there were 280 births amongst 270 hypertensive mothers.

Perinatal mortality (PNM): The overall PNM was 20 per cent and a progressive increase was observed with increasing severity of the disease (Table I). The PNM in severe hypertension was significantly higher than that in mild ($P < 0.001$).

Preterm births: In all 32.2 per cent babies were born preterm (Table II). The PNM was about 8 times more in babies born preterm. The incidence of preterm birth went on increasing with increasing severity of disease with a significant difference in mild and severe hypertension ($P < 0.001$).

Birth weight: In all, 154 (55%) babies were low birth weight (less than 2500 gms) and PNM in them was 32.5 per cent (50/154). The incidence of low birth weight was progressively (Table III) increasing with increasing severity of the

TABLE I
Perinatal Mortality (PNM) According to the Severity of the Disease

Group	No. of pts.	No. of births	SB	END	PND	PNM %
Mild	155	161	8	10	18	11.2
Severe	82	85	13	12	25	29.4
Eclampsia	33	34	7	6	13	38.2
Total	270	280	28	28	56	20.0

TABLE II
Risk of Preterm Delivery in Hypertensive Pregnancy

Gest. age in weeks	Mild		Severe	Eclampsia	Total	
	No.	No. of cases	No. of cases	No. of cases	No. of births	PNM %
37 weeks	No. 36	36	39	18	93	48.4
	% 22.3		45.8	52.9	33.2	
37 weeks or more	No. 125	125	46	16	187	5.9
Total		161	85	34	280	20.0

TABLE III
Birth Weight Distribution and PNM in Hypertensive Pregnancy

Birth weight in gms.	Mild No. of cases	Severe No. of cases	Eclampsia No. of cases	Total	
				No. of cases	PNM %
Upto 1500	12	17	7	36	77.8
1501-2000	22	20	7	49	32.6
2000-2500	35	22	12	69	8.7
Sumtotal of LBW babies	69	59	26	154	32.4
2501 and more	92	26	8	126	4.7
Total	161	85	34	280	20.0

disease and it was 42.9 per cent in mild, 69.4 per cent in severe hypertension and 76.5 per cent in eclampsia, the difference between mild and severe hypertension being statistically significant ($P < .001$).

Neonatal asphyxia: Incidence of neonatal asphyxia was noted in liveborn babies delivered in this hospital. Progressive increase with increasing severity of disease was noted. 28.8 per cent of mild, 80.6 per cent of severe hypertension and all babies of eclampsia group were asphyxiated at birth.

There was a progressive increase in PNM with increase in systolic blood pressure and it was considerably higher when blood pressure was 180 mm of Hg or more (Table V).

Progressive increase in PNM with increase in diastolic blood pressure was seen. PNM was about 3 times higher when diastolic blood pressure was 110 mm of Hg or more in both pre-eclamptic and eclamptic women (Table VI).

Sudden increase in PNM was seen with albuminuria of more than 2 g/L (53.3%)

TABLE IV
Neonatal Asphyxia in Different Groups of Hypertension

Group	Apgar score						Total
	0-3		4-6		7 and above		
	No.	%	No.	%	No.	%	
Mild	8	5.8	32	23.1	99	71.2	139
Severe	13	19.4	14	61.2	13	19.4	67
Eclampsia	4	30.8	9	69.2	—	—	13

TABLE V
Systolic Blood Pressure and PNM

Systolic blood pressure in mm of Hg	Mild and severe		Eclampsia	
	No. of cases	PNM %	No. of cases	PNM %
140 - 159	159	13.2	13	23.1
160 - 179	55	23.6	12	33.3
180 and more	23	39.1	8	75.0
Total	237	181	33	39.4

TABLE VI
Diastolic Blood Pressure and PNM

Diastolic blood pressure in mm of Hg	Mild and severe		Eclampsia	
	No. of cases	PNM %	No. of cases	PNM %
90-109	156	11.5	11	18.2
110 and more	81	30.9	22	50.0
Total	237	18.1	33	39.4

as against 12.5 per cent with albuminuria of 2 gm/L or less ($P < 0.001$).

PNM was significantly higher ($P < 0.001$) in hypertensive patients with serum uric acid concentration of 6 mg% or more in both pre-eclamptic and eclamptic women (Table VII).

the 26 stillbirths in present study, 11 (42.3%) were due to abruptio placentae.

Antihypertensive treatment: Use of antihypertensive drugs in severe toxæmia did not seem to have any effect on PNM.

Cause of perinatal deaths: Prematurity and its complications accounted for 32.1

TABLE VII
Serum Uric Acid Concentration and PNM

Serum uric acid mgm %	Mild and severe		Eclampsia	
	No. of cases	PNM %	No. of cases	PNM %
Up to 5.9	170	11.2	14	14.3
6.0 or more	67	35.8	19	57.9
Total	237	18.1	33	39.4

Prenatal care: PNM was about 2½ times more in patients who had less than 3 antenatal clinic visits than those who visited clinic on 3 or more occasions.

Retinal changes: Lowest PNM was seen in absence of retinal changes and rise in PNM was noted when grade II retinal changes were seen.

Oedema: Presence moderate pedal oedema did not have any effect on PNM but generalised oedema was associated with very high PNM.

Placental abruption: The overall incidence of abruptio placentae was 5.6 per cent and 11 out of 15 babies born to these mothers (73.3%) were stillborn. Out of

per cent of perinatal deaths (PNDs). Asphyxia accounted for 41.1 per cent PNDs and corrected PNM was 16.3 per cent (46/280).

Discussion

The incidence of hypertensive disorders in pregnancy in our study is 8.9 per cent which is similar to that reported by Mudliar and Menon (7.9%). The incidence in Western population reported by Chesley is 6 per cent. However the proportion of severe disease in our study is considerably higher (30.4%), than that quoted by Chesley (10%), probably be-

cause of lack of antenatal care. The PNM is 20 per cent in our study, which is similar to that quoted by Das *et al* (26.0%) but it is three times higher than that quoted by Chesley, probably because maximum patients in our study were unbooked, emergency admissions and we do not have sophisticated techniques for fetal monitoring.

How do we account for high PNM even in hospitalised hypertensive patients? The majority of these hospitalised patients had earlier onset of toxæmia which was of greater severity.

In 3 patients of severe hypertension, intrauterine fetal deaths could not be predicted for want of facilities for antepartum fetal monitoring. Intranatal fetal asphyxia could not be predicted in some babies for want of intrapartum fetal monitoring. The neonatal deaths which occurred in premature and low birth weight babies could have been avoided provided the neonatal nursery was well equipped.

The perinatal outcome in hospitalized group can be improved if facilities for biophysical and biochemical monitoring of the fetus are available alongwith im-

proved facilities for caring the premature neonates.

We recommend that a hypertensive pregnant patient with any of the following observations should be regarded as a very high risk patient in terms of PNM if she has—

1. Systolic blood pressure 180 mm of Hg or more
2. Diastolic blood pressure 110 mm of Hg or more
3. Albuminuria more than 2 g/L
4. Serum uric acid concentration 6 mg% or more
5. Retinal changes of grade II or more
6. Presence of generalised oedema.

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