Original Research Article

Perinatal mortality in pregnancy induced hypertension

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Abstract

Background: The overall incidence of pregnancy induced hypertension (PIH) is 7%. In developing countries like India, PIH accounts for a sizable number of perinatal mortality. **Methods:** 200 consecutive births to mothers with pregnancy induced hypertension were studied in a tertiary care hospital. **Results:** There was significant increase in perinatal mortality in PIH. PNMR in PIH was 345/1000 which was 4.5 times higher than general perinatal mortality rate of hospital. PNMR was highest in eclampsia (627.9/1000). The leading cause of neonatal death was prematurity (37%) followed by severe birth asphyxia and septicemia (18.5% each). 18 babies (11.4%) developed meconium aspiration syndrome. **Conclusion:** PIH is associated with very high incidence of perinatal mortality in developing countries. High risk patients of PIH should be appropriately counselled and must be managed with adequate neonatal intensive care facilities to improve the outcome.
Key Words: Pregnancy induced hypertension, Perinatal mortality, prematurity, birth asphyxia.

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INTRODUCTION

The overall incidence of pregnancy induced hypertension (PIH) is 7%.[1] PIH is known to be associated with increased perinatal mortality due to various prenatal and natal factors in addition to the adverse effects of drugs used in the management of it. PIH is also associated with increased incidence of prematurity and small for date (IUGR) babies which affects the incidence of perinatal morbidity and mortality.[2] In developing countries like India, PIH accounts for a sizable number of perinatal mortality. Maternal age, parity, socio economical status, maternal anemia, proteinuria etc are also found to have their role in perinatal outcome in PIH.[3] In India perinatal mortality rate in PIH has been accepted to be high as the emphasis is still on maternal salvage and there is lack of tertiary care neonatal centers capable of dealing very premature and LBW infants. 15-30% of PIH patients which are seen in teaching institutions are of severe variety. Hypertensive disorders of pregnancy complicate 5-8% of pregnancies and are associated with increased risks of perinatal morbidity and mortality.[4] There are very few published Indian studies which cited only in part to potential perinatal mortality in severe PIH. So the present study was under taken as to determine extent of perinatal mortality in PIH.

MATERIALS AND METHODS

200 consecutive births to mothers with pregnancy induced hypertension which took place between March 2000 to February 2001 in HQH Hospital, Bellary were studied. Mothers were diagnosed to have pregnancy induced hypertension as per the standard criteria laid down by American College of Obstetric and Gynecology.

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RESULTS

200 consecutive births to mother with pregnancy induced hypertension took place between March 2000 to February 2001 in HQH Hospital, Bellary. Incidence of PIH was 8.6%.

Table 1: Mortality statistics in PIH

Perinatal Deaths	Total for the year	PIH Excluding Eclampsia	Eclampsia
Perinatal Deaths	180	42	27
PNMR	77.4/1000	267.5/1000	627.9/1000
Still births	107	26	16
Still births rate	46/1000	165.6/1000	372/1000
Early neonatal deaths	73	16	11
END rate	32.9/1000	122.1/1000	407.4/1000

Table 2; Perinatal deaths in relation to severity of PIH

PIH grading	No. of cases	No. of live births	IUD/SB	No. of Neonatal deaths
Gestational Hypertension	27 (13.5)	27	0(0)	0(0)
Mild	42 (21.0)	40	2(4.8%)	3(7.5%)
Severe	88 (44.0)	64	24(27.3%)	13(20.3%)
Eclampsia	43(21.5)	27	16(37.2%)	11(40.7%)
Total	200	158	42(21.0%)	27(17.1%)

Table 3: Perinatal deaths in relation to Gestational age

Gestational age (weeks)	No. of cases	No. of live births	IUD/SB	No. of Neonatal deaths
Pre term				
28-30	30 (15.0%)	13	17 (56.7%)	10 (76.9%)
31-33	26 (13.0%)	16	10 (38.5%)	07 (43.8%)
34-36	27 (13.5%)	20	07 (25.9%)	06 (30.0%)
Total	83 (41.5%)	49	34 (40.9%) P < 0.001	23(46.9%) P < 0.001
Term				
37-39	66 (33.0%)	59	7 (10.6%)	02 (03.4%)
40-42	51 (25.5%)	50	1 (02.0%)	02 (04.0%)
Total	**117(58.5%)**	**109**	**8 (06.8%)**	**04 (03.7%)**

Table 4: Primary causes of Neonatal deaths

PREMATURITY	10 (37.0%)
SEVERE BIRTH ASPHYXIA	05 (18.5%)
DIC	04 (14.8%)
SEPTICEMIA	05 (18.5%)
MECONIUM ASPIRATION SYNDROME	02 (07.4%)
CONGENITAL NALFORMATION	01 (03.7%)

There was significant increase in perinatal mortality in PIH. PNMR in PIH was 345/1000 which was 4.5 times higher than general perinatal mortality rate of hospital. PNMR was highest in eclampsia (627.9/1000).Gestational hypertension was not associated with any perinatal mortality. No neonatal deaths was encountered in gestation hypertension. With increasing severity of PIH there was significant increase in the neonatal deaths which was statistically highly significant. There was higher incidence of prematurity with increasing severity of PIH. Also there was higher incidence of IUD and small for gestational age with increasing severity of hypertension which was statistically significant. In eclampsia, there was higher percentage of neonatal deaths (40.7%) as compared to 20.3% in severe PIH which was statistically significant. A linear co-relation was seen between high systolic blood pressure and increase incidence of prematurity IUD and neonatal deaths, which was statistically significant. When systolic blood pressure was more than 216 mmHg all babies born were preterm. The incidence of prematurity was 50% when diastolic blood pressure was more than 110mmHg. With increasing diastolic blood pressure, there was increase in incidence of prematurely, IUD and neonatal deaths which

was statistically highly significant. Out of 200 births, 83 babies were born preterm with an incidence of 41.5%. The incidence of preterm was 31% and was high in eclampsia (63%). There was higher incidence of IUD and neonatal deaths with decreasing gestational age which was statistically highly significant. The incidence of neonatal death was 17.1% in the study. Incidence of neonatal deaths was high among preterm infants (46.9%) as compared to term infants (3.7%). Incidence was highest (76.9%) between gestational age of 28-30 weeks. The leading cause of neonatal death was prematurity (37%) followed by severe birth asphyxia and septicemia (18.5% each). 18 babies (11.4%) developed meconium aspiration syndrome. Incidence was high in eclampsia (22.2%).

DISCUSSION

In this study the incidence of PIH in the study was 8.6%. Perinatal mortality rate in the study was 345/1000 which was 4.5 times higher than general PNMR of the hospital (77.4/1000). Perinatal mortality reported by Githa *et al*[5] was 197.2/1000 and Jain *et al*[2] was 106/1000. Majority of the mothers did not have antenatal checkup. So early evidences of PIH were missed and more number of women landed up in severe PIH and eclampsia, thereby increasing the incidence of intrauterine death and perinatal mortality. 27 babies died in the neonatal period (17.1%). The incidence was significantly higher than hospital incidence of neonatal deaths (3.3%). The incidence was maximum (40.7%) in babies born to eclamptic mother. Lopez[6] reported 12% incidence of neonatal deaths in PIH. The high mortality in these cases may be because of increase incidence of preterm babies which are more susceptible for number of complications. Increase in perinatal mortality was observed with rise in systolic and diastolic blood pressures. With systolic blood pressure more than 220 mmHg. Also a steep rise in neonatal deaths and IUD was observed with diastolic blood pressure more than 130 mmHg. Das *et al*[7] have also reported a very high perinatal mortality when systolic blood pressure exceeded 180 mmHg and diastolic blood pressure exceeded 120 mmHg which is close to our study. In the study group, 83 babies were born preterm. Incidence of prematurity was 41.5%. The incidence was highest in eclamptic cases (62.8%). The incidence of prematurity in PIH was significantly higher than hospital incidence of prematurity (8%). Incidence of prematurity was noted to be 23% by Githa *et al*[5] and 58.1% by Sibai *et al*.[8] The reason for high rate of prematurity may be that majority of mothers had not taken antenatal care in any form so that signs of pre eclampsia were missed. Hence these mothers have landed in severe PIH and eclampsia in earlier part of pregnancy necessitating termination of pregnancy to control hypertension. The overall incidence of birth asphyxia in this study was 18.5 % which is comparable with incidence reported by Githa *et al*[5] (19.6%). The incidence of severe birth asphyxia was higher in eclampsia (26%) when compared to severe PIH (6.3%). This is because maternal convulsion in eclampsia may further compromise the already reduced utero placental perfusion causing fetal distress and perinatal asphyxia. Also anticonvulsants and sedatives which are used more often in eclampsia, could have contributed to higher incidence of birth asphyxia in these cases. 18 Babies had meconium aspiration syndrome (11.4%). The incidence was more in eclampsia (22.2%) as compared to severe PIH (17.1%). In eclampsia, the incidence of intrapartum asphyxia and fetal distress is more, so there is increased likelihood of babies born with meconium aspiration. The incidence of septicemia in the study group was 18.5%. Higher incidence was seen in eclampsia (29.6%). Doron *et al* [9](1994) reported an incidence of 14% which is comparable with the study incidence. 85% of all neonatal deaths occurred in preterm babies. The incidence was more in babies born to eclamptic mothers because of increase likelihood of these babies being born severely asphyxiated at birth. In a study by Jain *et al* [2] 77.4% of all perinatal deaths occurred in preterm infants. The leading cause for neonatal deaths in the study was prematurity (37%) followed by severe birth asphyxia (18.5%). Similar pattern of mortality was observed by Jain *et al*.[2]

CONCLUSION

PIH is associated with very high incidence of perinatal mortality in developing countries. The major reason for high perinatal loss may be due to delayed referral and lack of antenatal care and high incidence of preterm births. High Perinatal mortality in PIH can be reduced by early detection of failing placental function, timely caesarean
section and by judicious use of drugs in the mother which affects the fetus adversely. Preterm babies born to mothers with PIH have significantly more neonatal mortality than those of a similar gestational weeks are born to normotensive mother. Hence high risk patients of PIH should be appropriately counselled and must be managed with adequate neonatal intensive care facilities to improve the outcome.

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