

ORIGINAL RESEARCH

Assessment of early neonatal outcome in low- birth weight babies in mothers with hypertensive disorders

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ABSTRACT

Background: The hypertensive disorders of pregnancy are among the leading causes of maternal and fetal morbidity and mortality. This study was conducted to assess early neonatal outcome in low- birth weight babies in mothers with hypertensive disorders.

Materials & Methods: 70 women with hypertension delivering low birth weight babies were divided into 2 groups of 35 each. Group I was vaginal delivery group and group II was caesarean delivery group. Parameters such as types of hypertensive disorders in pregnancies, early neonatal outcome and neonatal complications were recorded.

Results: Pre-eclampsia was seen in 12 in group I and 14 in group II, eclampsia 8 in group I and 7 in group II, gestational hypertension 10 in group I and 8 in group II and chronic hypertension with superimposed preeclampsia 5 in group I and 6 in group II. The difference was non- significant ($P > 0.05$). APGAR at 1 minute (4-6) was seen in 20 and 22, APGAR at 5 minutes (7-10) was seen in 15 and 13, neonates & groups I&II NICU admission was present in 26 and 24 and NICU admission was absent in 9 and 11 in neonates in group I and II respectively. Neonatal complications observed were RDS in 3 and 5, birth asphyxia in 6 and 3, intraventricular haemorrhage (IVH) in 3 and in group I and II respectively. The difference was significant ($P < 0.05$).

Conclusion: Caesarean delivery offers no short-term survival advantage compared with vaginal delivery for low- birth weight vertex in PIH patients.

Key words: Caesarean delivery, PIH, low- birth weight

INTRODUCTION

The hypertensive disorders of pregnancy are among the leading causes of maternal and fetal morbidity and mortality.¹ Pregnancy induced hypertension (PIH) is responsible for 8- 10% of all preterm births, 18% of fetal and infant mortality, and 46% of infants born are small for gestation (SGA). PIH is not by itself an indication for caesarean delivery.^{2,3} Although the evidence favouring caesarean delivery remains uncertain, in most cases of severe preeclampsia before 34 weeks, approximately 80% of these women will end up having caesarean delivery.⁴

Pregnancies complicated by hypertension are associated with an increased risk of adverse foetal, neonatal as well as maternal consequences, comprising of intrauterine growth restriction, preterm birth, post partum or antepartum haemorrhage, acute renal and hepatic

failure and lastly maternal and perinatal death.⁵The 2017 report by the American College of Cardiology/American Heart Association (ACC/AHA) Task Force on Clinical Practice Guidelines defines elevated blood pressure as a systolic blood pressure (BP) of 120 to 129 mm Hg, with diastolic BP of less than 80 mm Hg. Hypertension is present when the systolic BP is 130 mm Hg and the diastolic BP is 80 mm Hg.⁶ or more This study was conducted to assess early neonatal outcome in low- birth weight babies in mothers with hypertensive disorders.

MATERIALS &METHODS

The present study comprised of 70 women with hypertension delivering low birth weight Patients consent was obtained before including in the study.

Data such as name, age etc was recorded. Patients were divided into 2 groups of 35 each. Group I was vaginal delivery group and group II was caesarean delivery group. Parameters such as types of hypertensive disorders in pregnancies, early neonatal outcome and neonatal complications were recorded. The results were subjected for statistical analysis. P value less than 0.05 were set significant.

RESULTS

Table I: Types of hypertensive disorders

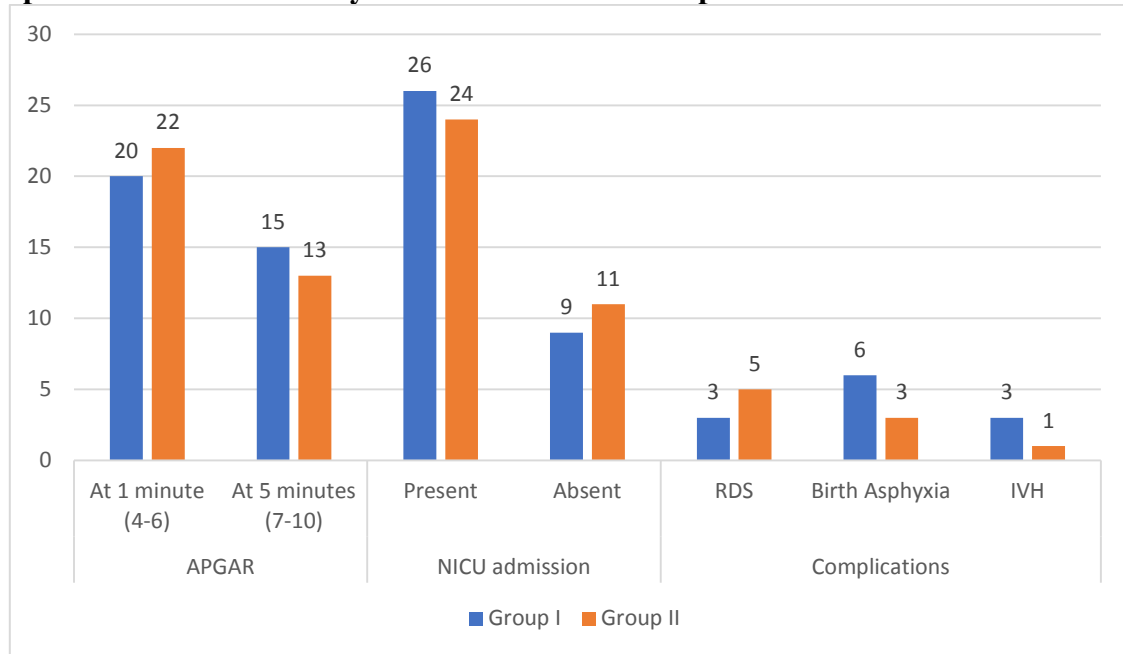
Hypertensive disorders	Group I (35)	Group II(35)	P value
Preeclampsia	12	14	0.82
Eclampsia	8	7	0.91
Gestational hypertension	10	8	0.84
Chronic hypertension with superimposed preeclampsia	5	6	0.96

Table I shows that preeclampsia was seen in 12 in group I and 14 in group II, eclampsia 8 in group I and 7 in group II, gestational hypertension 10 in group I and 8 in group II and chronic hypertension with superimposed preeclampsia 5 in group I and 6 in group II. The difference was non- significant ($P > 0.05$).

Table II: Assessment of early neonatal outcome & complications

Parameters	Parameters	Group I	Group II	P value
APGAR	At 1 minute (4-6)	20	22	0.94
	At 5 minutes (7-10)	15	13	0.12
NICU admission	Present	26	24	0.82
	Absent	9	11	0.17
Complications	RDS	3	5	0.01
	Birth Asphyxia	6	3	
	IVH	3	1	

Table II, graph I shows that APGAR at 1 minute (4-6) was seen in 20 and 22, APGAR at 5 minutes (7-10) was seen in 15 and 13, NICU admission was present in 26 and 24 and NICU admission was absent in 9 and 11 in group I and II respectively. Neonatal complications observed were RDS in 3 and 5, birth asphyxia in 6 and 3, intraventricular haemorrhage (IVH) in 3 and 1 in group I and II respectively. The difference was significant ($P < 0.05$).

Graph I: Assessment of early neonatal outcome&complications

DISCUSSION

Differentiating these disorders requires careful evaluation of the patient's history with a thorough physical examination and appropriate laboratory testing. The 4 categories of hypertensive disorders of pregnancy are chronic hypertension, gestational hypertension, preeclampsia-eclampsia, and chronic hypertension with superimposed preeclampsia.⁷ Proper diagnosis in the emergency department is crucial to initiate appropriate treatment to reduce the potential harm to the mother and the fetus. In recent years, updates to the diagnostic criteria for preeclampsia have removed the requirement for proteinuria.⁸ Chronic hypertension during pregnancy is defined as the presence of hypertension before conception, the development of elevated blood pressure before 20 weeks' gestational age, or the persistence of hypertension beyond 12 weeks after delivery.⁹ This study was conducted to assess early neonatal outcome in low-birth weight babies in mothers with hypertensive disorders.

We found that pre-eclampsia was seen in 12 in group I and 14 in group II, eclampsia 8 in group I and 7 in group II, gestational hypertension 10 in group I and 8 in group II and chronic hypertension with superimposed preeclampsia 5 in group I and 6 in group II. Buchbinder et al¹⁰ found that there were higher rates of preterm delivery at less than 37 weeks of gestation (54.2% versus 17.8% and less than 35 weeks of gestation (25.0% versus 8.4% and delivery of small-for-gestational-age infants (20.8% versus 6.5%).

We found that APGAR at 1 minute (4-6) was seen in 20 and 22, APGAR at 5 minutes (7-10) was seen in 15 and 13, NICU admission was present in 26 and 24 and NICU admission was absent in 9 and 11 in group I and II respectively. Neonatal complications observed were RDS in 3 and 5, birth asphyxia in 6 and 3, intraventricular haemorrhage (IVH) in 3 and 1 in group I and II respectively. In our study the incidence of RDS was more in caesarean delivery group, while birth asphyxia & IVH (intra ventricular haemorrhage) were more in vaginal delivery group. Alanis et al¹¹ showed higher incidence of birth asphyxia in caesarean delivery group (37.3%) compared to vaginal delivery group (12%). Neonatal complications observed were RDS in 15% and 21%, birth asphyxia in 12% and 6%, intraventricular haemorrhage (IVH) in 7% and 3%, meconium aspiration syndrome (MAS) in 6% and 3% and sepsis in 7% and 5% in group I and II respectively. Humberg et al¹² found that prevalence of IVH was higher, in vaginal delivery group as compared to caesarean section groups. They also concluded that

incidence of IVH was more in emergency caesarean when compared to planned caesarean section.

Pabbati et al¹³ found that the incidence of LBW babies was 25.07% with almost an equal contribution from preterm (50.46%) and term intra uterine growth restricted (IUGR) (49.53%) babies. The most common morbidity found in LBW babies was jaundice (40.09%) followed by respiratory distress (18.16%), sepsis (8.72%) and apnea (4.48%). Preterm-LBW babies had more morbidities in terms of apnea (100%), birth asphyxia (88.88%), respiratory distress (87.01%), sepsis (80.55%) and jaundice (67.64%). Early neonatal mortality was 21.22 per 1000 live births.

CONCLUSION

Authors found that caesarean delivery offers no short-term survival advantage compared with vaginal delivery for low birth weight vertex presentation neonates in PIH patients.

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