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ORIGINAL RESEARCH

Assessment Of Early Neonatal Outcome In Low- Birth Weight Babies In Hypertensive Disorders Complicating Pregnancies With The Mode Of Delivery

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ABSTRACT

Background: To assess early neonatal outcome in low- birth weight babies in hypertensive disorders complicating pregnancies with the mode of delivery.

Materials and Methods: Eighty- women delivering low birth weight babies with hypertension complicating pregnancies were divided into 2 groups of 40 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: There were 18 patients in group I and 20 in group II with preeclampsia, 6 in group I and 7 in group II eclampsia, 12 in group I and 11 in group II gestational hypertension and 4 in group I and 2 in group II chronic hypertension with superimposed preeclampsia. The difference was non- significant (P> 0.05). Age group 21-25 years had 26 patient sin group I and 25 in group II. There were 28 Primigravida in group I and 24 in group II and 12 multigravida in group I and 16 in group II. SES was lower in 27 in group I and 22 in group II, middle in 10 in group I and 13 in group II and upper in 3 in group I and 5 in group II. The difference was significant (P<0.05) (Table II). APGAR at 1 minute (4-6) was seen in 28 and 26, APGAR at 5 minutes (7-10) was seen in 21 and 25, NICU admission was present in 27 and 31 and NICU admission was absent in 13 and 9 in group I and II respectively. The difference was significant (P<0.05). 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. The difference was significant (P<0.05).

Conclusion: Neonatal outcomes are not worsened by spontaneous or induced vaginal delivery in women with hypertension with good control and also decreases morbidity due to caesarean section to the mother. Caesarean delivery offers no short-term survival advantage compared with vaginal delivery for LBW vertex presenting foetuses in PIH patients.

Keywords: Caesarean delivery, PIH, LBW.

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INTRODUCTION

The hypertensive disorders of pregnancy are among the leading causes of maternal and fetal morbidity and mortality. Differentiating these disorders requires careful evaluation of the

patient's history with a thorough physical examination and appropriate laboratory testing.[1] The 4 categories of hypertensive disorders of pregnancy are chronic hypertension, gestational hypertension, preeclampsia-eclampsia, and chronic hypertension with superimposed preeclampsia.[2] 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.[3]

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. 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 antagonistic foetal, neonatal as well as maternal consequences, comprising of intrauterine growth restriction, preterm birth, post or antepartum haemorrhage, acute renal and hepatic failure and lastly maternal and perinatal death.[5] Maternal complications – include HELLP syndrome, temporary blindness, abruptio placentae, disseminated intravascular coagulation (DIC), etc. Foetal complications - Intrauterine growth retardation, preterm birth, small for gestational age and foetal death, HELLP syndrome etc.[6] We performed this study to assess early neonatal outcome in low- birth weight babies in hypertensive disorders complicating pregnancies with the mode of delivery.

MATERIALS & METHODS

A sum total of eighty- women delivering low birth weight babies with hypertension complicating pregnancies. Approval from ethical review committee was obtained. Patients consent was obtained before starting the study. Inclusion criteria was babies born with a birth weight < 2.5 kgs to mothers with PIH. 2. All women with a singleton, vertex presenting fetus > 28 weeks gestation with PIH. Exclusion criteria was pregnant women with PIH getting terminated before 28 weeks, malpresentation, maternal diseases such as gestational diabetes, cardiac diseases, etc.

Data such as name, age, gender etc. was recorded. All were divided into 2 groups of 40 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 compiled and subjected for statistical analysis using Mann Whitney U test. P value less than 0.05 was set significant.

RESULTS

Table I Types of hypertensive disorders

Hypertensive disorders	Group I	Group II	P value
Preeclampsia	18	20	0.12
Eclampsia	6	7	0.25
Gestational hypertension	12	11	0.19
Chronic hypertension with superimposed preeclampsia	4	2	0.05

There were 18 patients in group I and 20 in group II with preeclampsia, 6 in group I and 7 in group II eclampsia, 12 in group I and 11 in group II gestational hypertension and 4 in group I

and 2 in group II chronic hypertension with superimposed preeclampsia. The difference was non- significant (P> 0.05) (Table I).

Table II Assessment of maternal variables

Parameters	Variables	Group I	Group II	P value
Age group (years)	21-25	26	25	0.82
	26-30	14	15	
Gravidity	Primigravida	28	24	0.05
	Multigravida	12	16	
SES	Upper	3	5	0.04
	Middle	10	13	
	Lower	27	22	

Age group 21-25 years had 26 patient sin group I and 25 in group II. There were 28 Primigravida in group I and 24 in group II and 12 multigravida in group I and 16 in group II. SES was lower in 27 in group I and 22 in group II, middle in 10 in group I and 13 in group II and upper in 3 in group I and 5 in group II. The difference was significant (P<0.05) (Table II).

Table III Assessment of early neonatal outcome

Parameters	Group I	Group II	P value
APGAR at 1 minute (4-6)	28	26	0.12
APGAR at 5 minutes (7-10)	21	25	0.04
NICU admission present	27	31	0.09
NICU admission absent	13	9	0.01

APGAR at 1 minute (4-6) was seen in 28 and 26, APGAR at 5 minutes (7-10) was seen in 21 and 25, NICU admission was present in 27 and 31 and NICU admission was absent in 13 and 9 in group I and II respectively. The difference was significant (P<0.05) (Table III).

Table IV Assessment of neonatal complications

Neonatal complications	Group I	Group II	P value
RDS	15%	21%	0.05
Birth Asphyxia	12%	6%	0.01
Intraventricular haemorrhage (IVH)	7%	3%	0.02
Meconium Aspiration Syndrome (MAS)	6%	3%	0.04
Sepsis	7%	5%	0.09

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. The difference was significant (P<0.05) (Table IV).

DISCUSSION

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.[7] The 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.[8] We performed this study to assess early neonatal outcome in low- birth weight babies in hypertensive disorders complicating pregnancies with the mode of delivery.

Our results showed that there were 18 patients in group I and 20 in group II with preeclampsia, 6 in group I and 7 in group II eclampsia, 12 in group I and 11 in group II gestational hypertension and 4 in group I and 2 in group II chronic hypertension with superimposed preeclampsia. Pilli et al[9] compared the immediate morbidity and survival advantage of LBW vertex presenting babies with the mode of delivery in hypertensive disorders complicating pregnancies. There was no statistically significant difference in neonatal outcome in both vaginal delivery and caesarean section groups. However, there was slight increased incidence of prematurity (68% vs 64%), Birth Asphyxia (14% vs 8%), Sepsis (8% vs 6%), IVH (6% vs 2%) and Hyperbilirubinemia (16% vs 14%) in vaginal delivery group. While, RDS (20% vs 14%) and NEC (4% vs 2%) had higher incidence in caesarean delivery group. Overall, prematurity and IUGR resulting in LBW, contributed to these neonatal complications

Age group 21-25 years had 26 patient sin group I and 25 in group II. There were 28 Primigravida in group I and 24 in group II and 12 multigravida in group I and 16 in group II. SES was lower in 27 in group I and 22 in group II, middle in 10 in group I and 13 in group II and upper in 3 in group I and 5 in group II. Humberga et al[10] 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. I

APGAR at 1 minute (4-6) was seen in 28 and 26, APGAR at 5 minutes (7-10) was seen in 21 and 25, NICU admission was present in 27 and 31 and NICU admission was absent in 13 and 9 in group I and II respectively. Alanis et al[11] 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.

Pregnancy outcomes in women with mild versus severe gestational hypertension are significantly different. Non-severe gestational hypertension is typically associated with favorable outcomes. Severe gestational hypertension is associated with a much worse prognosis for the mother and fetus. Buchbinder et al[12] in their trial involving pregnant women with a history of preeclampsia found that outcomes of severe gestational hypertension were worse than for mild preeclampsia. 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%.

CONCLUSION

Neonatal outcomes are not worsened by spontaneous or induced vaginal delivery in women with hypertension with good control and also decreases morbidity due to caesarean section to

the mother. Caesarean delivery offers no short-term survival advantage compared with vaginal delivery for LBW vertex presenting foetuses in PIH patients.

REFERENCES

1. Sibai BM. Diagnosis and management of gestational hypertension and preeclampsia. Obstet Gynecol 2003;102(1):181–92.
2. Saudan P, Brown MA, Buddle ML, et al. Does gestational hypertension become pre-eclampsia? Br J Obstet Gynaecol 1998;105(11):1177–84.
3. Barton JR, O'Brien JM, Bergauer NK, et al. Mild gestational hypertension remote from term: progression and outcome. Am J Obstet Gynecol 2001;184(5):979–83.
4. Cruz MO, Gao W, Hibbard JU. Obstetrical and perinatal outcomes among women with gestational hypertension, mild preeclampsia, and mild chronic hypertension. Am J Obstet Gynecol 2011;205(3):1-9.
5. Seyom E, Abera M, Tesfaye M, Fentahun N. Maternal and fetal outcome of pregnancy related hypertension in Mettu Karl Referral Hospital, Ethiopia. J Ovarian Res. 2015;8:10.
6. Bujold E, Roberge S, Lacasse Y, Bureau M, Audibert F, Marcoux S. Prevention of preeclampsia and intrauterine growth restriction with aspirin started in early pregnancy: a meta-analysis. Obstet Gynecol. 2010;116(2):402–14.
7. Bauer J, Hentschel R, Zahradnik H, Karck U, Linderkamp O. Vaginal delivery and neonatal outcome in extremely-low-birth-weight infants below 26 weeks of gestational age. Am J Perinatol. 2003;20(4):181–8.
8. American Academy of Pediatrics Committee on Fetus and New born and American College of Obstetricians and Gynaecologists Committee on Obstetric practice. The Apgar Score. J Am Acad Pediatr. 2015;136(4):819–22.
9. Pilli S, Bakshi K. Comparative study of early neonatal outcome in low birth weight babies in hypertensive disorders complicating pregnancies with the mode of delivery. Indian J Obstet Gynecol Res 2021;8(3):339-345.
10. Humberga A, Härtela C, Paula P, Hankea K, Bossungb V. Annika Hartza et al. Delivery mode and intraventricular hemorrhage risk in very-low-birth-weight infants: Observational data of the German Neonatal Network. Eur J Obstet Gynaecol. 2017;212:144–9.
11. Alanis MC, Robinson CJ, Hulsey TC, Ebeling M, Johnson DD. Early-onset severe preeclampsia: induction of labor vs elective caesarean delivery and neonatal outcomes. Am J Obstet Gynecol. 2008;199(3):262.
12. Buchbinder A, Sibai BM, Caritis S, et al. Adverse perinatal outcomes are significantly higher in severe gestational hypertension than in mild preeclampsia. Am J Obstet Gynecol 2002;186(1):66–71.