

Fetomaternal Outcome in Hypertensive Disorders of Pregnancy

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1. Introduction

Hypertensive disorders in pregnancy are one of the most common non communicable diseases occurring in pregnancy. It is a spectrum of disease occurring in pregnancy. Its incidence ranges from 10 - 22% of all pregnancies. ¹ Gestational hypertension is defined as the new onset hypertension SBP \geq 140 mm Hg or DBP \geq 90 mm Hg on two occasions measured 4 hours apart, occurring for the first time after 20 weeks period of gestation in a previously normotensive woman and returning back to normal within 12 weeks of delivery, not associated with proteinuria.

Pre eclampsia is said to be present when there is associated proteinuria (300 mg per 24 hours equivalent to a protein/creatinine ratio of 30 mg/mmol) along with gestational hypertension. Severe pre - eclampsia is characterized by SBP \geq 160 mm Hg or DBP \geq 110 mm Hg or with features of end organ damage characteristic by pulmonary edema, deranged liver enzymes, thrombolytic, cerebral and visual symptoms, oliguria and fetal growth restriction. ²

Eclampsia is defined as the new onset of generalised tonic clonic seizures in a woman with severe pre eclampsia, not attributable to other causes. Hypertensive disorders in pregnancy are the third most common cause for maternal mortality in India. ³ It accounts for 24% of all maternal deaths in India. Complications include preterm labour, abruptio, DIC, Pulmonary edema, thromboembolism, cardiac failure, HELLP syndrome, renal failure and cerebral hemorrhage. Fetal complications include preterm baby, Intra Uterine Growth Restriction, intrauterine fetal demise. Long term complications include chronic hypertension, insulin resistance and susceptibility of the female baby to develop pre eclampsia in future pregnancy.

The main pathogenesis is abnormal placentation and the maternal response to it which is multisystemic. In this condition there is no cytotrophoblastic invasion of the spiral arteries, so the vessels remain high resistance, low capacitance. The ultimate management is removal of the ischemic placenta by termination of pregnancy. Depending on the severity of the disease and the associated complications, after stabilizing the patient blood pressure by administration of anti - hypertensives, and administration of Magnesium sulphate in cases of imminent eclampsia and eclampsia, the decision for termination can be taken.

Aims and Objectives

- 1) To determine the effect of hypertension in pregnancy
- 2) To determine the maternal and fetal outcome in patients with hypertensive disorders of pregnancy.

2. Methodology

This retrospective, cross sectional, observational study was conducted over a period of one year between AUGUST 2020 to JULY 2021 in the Department of Obstetrics and Gynaecology at Rural Tertiary Care Centre. Ethical approval was obtained from the institutional authority.

A total of 61 purposely selected pregnant women who presented with hypertensive disorders of pregnancy were enrolled for the study and their case records were retrospectively analyzed. A proforma was maintained to record the maternal age, parity, registration status, and period of gestation at diagnosis, severity of hypertension, associated maternal risk factors / comorbidity, type of delivery conducted, maternal and perinatal outcome/complications. Anti - hypertensive drugs used were Tab. Nifedipine and/or Tab Labetalol. Magnesium sulphate was the anticonvulsant used according to Pritchard's regimen. The data collected were coded and entered in MS Excel and processed further with appropriate statistics.

3. Results

Out of the total 620 deliveries conducted at our tertiary care hospital over a one - year study period sixty 61 were diagnosed with hypertensive disorder of pregnancy with the hospital based prevalence of 9.83%.

In present study, 24.59% cases delivered preterm between 29 to 32 weeks of gestation, 36.06% cases between 33 - 36 weeks and 36.06% cases delivered beyond 37 weeks.

Out of 61 patients, more than half the population showed Pre - eclampsia (52.45%), followed by Gestational hypertension (26.23%). Eclampsia noted in 16.39%, Chronic hypertension noted in 3.28%.

Table 1: Type of hypertensive disorder

| Type of htn disorder | No. of cases | Percentage % |
|---|--------------|--------------|
| Gestational hypertension | 16 | 26.23% |
| Preeclampsia | 32 | 52.45% |
| Eclampsia | 10 | 16.39% |
| Chronic hypertension | 2 | 3.28% |
| Chronic hypertension with superimposed preeclampsia | 1 | 1.63% |

Out of the 61 hypertensive mothers, 44 developed life - threatening complications and were hence managed in intensive care unit. Postpartum haemorrhage (19.67%) was the most frequently encountered complication while eclampsia complicated 16.39% of pregnancies. 9 cases presented with abruptio placentae, 5 pregnancies were complicated by HELLP syndrome, 3 patients developed post

LSCS Acute Renal Failure, 2 patients developed pulmonary edema, 2 patients developed thrombocytopenia, 1 patient developed left ventricular failure all were successfully managed in ICU.

Table 2: Maternal Outcome: Maternal Complications

| Complications | No. of cases | Percentage % |
|------------------------|--------------|--------------|
| Abruption | 9 | 14.75% |
| Postpartum haemorrhage | 12 | 19.67% |
| Eclampsia | 10 | 16.39% |
| Thrombocytopenia | 2 | 3.27% |
| Pulmonary edema | 2 | 3.27% |
| Renal failure | 3 | 4.91% |
| Cardic failure | 1 | 1.63% |
| Hellp syndrome | 5 | 8.19% |

No complication was observed among 26.22 % of the neonates but 32.78% babies had meconium aspiration who were resuscitated and further managed in NICU and 26.22% babies had low apgar score. Low birth weight observed in 45.90% cases and Intrauterine Growth Restriction noted in 29.50% cases. Out of all, 39.34% neonates required NICU admission and 19.67% cases required ventilator support. Among the total hypertensive mothers, 22.95% presented with intrauterine death while 8.19% died in the neonatal period. Respiratory distress syndrome was observed in 6.55% cases.

Table 3: Fetal Complications and Outcome

| Fetal Outcome | No. of cases | Percentage % |
|---------------------|--------------|--------------|
| Low Apgar | 16 | 26.22% |
| Meconium Aspiration | 20 | 32.78% |
| IUGR | 18 | 29.50% |
| LBW | 28 | 45.90% |
| NICU admission | 24 | 39.34% |
| Ventilator | 12 | 19.67% |
| RDS | 4 | 6.55% |
| IUD | 14 | 22.95% |
| Neonatal Death | 5 | 8.19% |

4. Discussion

Pregnancy induced hypertension is a pregnancy specific disorder involving multiple organs leading to adverse maternal and fetal outcome. Young as well as advanced maternal age has been shown as a risk factor for pregnancy induced hypertension. However, similar to the findings of Das S et al and Pillai SS et al^{4,5}. We noticed that most of our cases with hypertensive disorder of pregnancy were between the age group of 26 - 30 years followed by 21 - 25 years, this is probably because 20 - 30 years is the usual child bearing age group. The ultimate treatment of preeclampsia is delivery of the fetus irrespective of the gestational age and preterm delivery is one of the commonest complications of hypertensive disorders of pregnancy. In the present study 19.67% women had post - partum haemorrhage, to follow was eclampsia which accounted for 16.39% of the cases, abruption in 14.75% cases while HELLP Syndrome complicated 8.19% pregnancies, acute renal failure seen in 4.91% cases, pulmonary edema, thrombocytopenia in 3.27% cases and cardiac failure in 1.63% cases. Pillai et al⁵ encountered identical pattern of complications in their study. Perinatal morbidity and mortality can be reduced by early intervention and good neonatal care services. We observed

that the perinatal period was uneventful in 26.22% cases and in the remaining, 45.90% of the neonates had low APGAR score at 1 and 5 minutes while 32.78% of the newborns had meconium aspiration. We observed that there were 22.95% cases of intrauterine deaths mainly in mothers with eclampsia and abruption. Amongst the neonates who required NICU admission, most of the babies were of the mothers who had history of premature rupture of membrane, had positive CRP test, and hence required intravenous antibiotics. The rate of perinatal morbidity and mortality was in line with the findings of Das S et al⁴, where they showed 1.56% of IUFD and neonatal deaths, although Pillai SS et al⁵ showed higher percentage of perinatal complications.

5. Conclusion

Pregnancies complicated by hypertensive disorders continue to have significant impact on the maternal and perinatal morbidity and mortality. Early identification, intervention and referral to well - equipped centers capable of dealing with the illness can significantly reduce the related morbidity and mortality. Our tertiary care hospital is a well - equipped centre capable of handling high risk cases and also extends effective neonatal care, hence we did not encounter major maternal and perinatal complications. Maternal and perinatal mortality was also low.

References

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