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Original Research Article

## Hypertensive disorders of pregnancy: a clinical study in a rural tertiary care centre of western Uttar Pradesh, India

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### ABSTRACT

**Background:** The aim of study was to find out the frequency and clinical outcome in hypertensive disorder of pregnancy (HDP) in a rural tertiary care centre. Hypertensive disorder of pregnancy is a commonest medical disorder which constitutes about 12-22% of all pregnancies and it is a major cause of maternal morbidity as well as mortality world wide.

**Methods:** It is a retrospective hospital-based study to find out the clinical outcome in different hypertensive disorder of pregnancy in a rural tertiary care centre of western Uttar Pradesh.

**Results:** Present study showed the prevalence of HDP was 4.01% among the study population. Most of the patients were primipara, unbooked and less than 25 years of age. The most common HDP was mild preeclampsia and HELLP was its commonest complication.

**Conclusions:** Hypertensive disorder of pregnancy (HDP) is still a major cause of maternal mortality and morbidity. Authors intend to aware the pregnant women regarding high risk factors of pregnancy and motivate them for regular antenatal care so that complications of hypertensive disorders can be managed timely.

**Keywords:** Eclampsia, HDP, HELLP, Preeclampsia

### INTRODUCTION

Hypertensive disorder of pregnancy constitutes one of the most common medical complication of pregnancy, which constitutes about 12-22% of all the pregnancies, out of which preeclampsia is the commonest disorder contributing about 10% of HDP. The prevalence of hypertensive disorder of pregnancy varies according to the geographic area worldwide and it ranges from 1.5% in Sweden to 7.5% in Brazil. The prevalence of hypertensive disorder of pregnancy (HDP) in India has been reported to be 6-8%.<sup>2</sup>

Hypertension during pregnancy is diagnosed when the systolic blood pressure is more than or equal to 140 mmHg and diastolic is 90 mmHg or more, measured on two occasions 6 hrs apart. It is classified into four

categories as per recommendations of NHBPEP:2000; gestational hypertension, preeclampsia and eclampsia syndrome, chronic hypertension, chronic hypertension with superimposed preeclampsia.<sup>2</sup> Gestational hypertension is an HDP without proteinuria, preeclampsia is usually affecting pregnancy after 20 weeks along with proteinuria of more than 30mg/dl or more than 300mg in 24 hours, Eclampsia is considered when preeclampsia patients had convulsions. Hypertensive disorder of pregnancy is a major contributor of maternal morbidity as well as mortality leading to 10-20% of maternal deaths in developing countries. World health organization (WHO) estimates that at least one woman dies every seven minutes from complications of hypertensive disorder of pregnancy.<sup>3</sup> People are still residing in a country where antenatal care is not considered as essential part of pregnancy in most of

the rural areas due to lack of awareness and knowledge regarding advantages of antenatal care. As most of the women suffering from HDP were not aware of complications of raised blood pressure and never ever have their blood pressure checked during whole of the antenatal period. So, it is usual to diagnose them as HDP either in late gestation or during labour when dreaded complications had already occurred. So, this study was conducted to find out the frequency and clinical outcome in hypertensive disorder of pregnancy in our rural tertiary care centre from January 2018 to September 2018.

## METHODS

This is a retrospective study conducted in the department of Obstetrics and Gynecology UPUMS, Saifai, Etawah for 9 months (January to September 2018). During this period total of 5890 deliveries were conducted, out of which 240 women were diagnosed to have HDP. Study group included all the patients delivered during study period with diagnosis of any type of HDP. Data was collected from their indoor records.

### Inclusion criteria

- Definition of HDP which included all the antenatal women more than 28 weeks of gestation age, admitted to our hospital with diagnosis of hypertensive disorder of pregnancy during study period.

### Exclusion criteria

- Patients before 28 weeks of gestation age and who left hospital against medical advice or having incomplete data.

Different variables like maternal age, parity, gestational age, socioeconomic status, rural or urban background, booked or unbooked status, type of HDP, severity of disease, biochemical test results, mode of delivery and perinatal outcome were assessed to find out maternal and perinatal outcome in this study group.

All the patients were divided into different category of HDP according to classification. Hypertension along with presence of convulsion or coma not attributable to other causes during pregnancy is defined as Eclampsia. Women who were found to have hypertension before 20 weeks were considered as chronic hypertension. A new onset of worsening the symptoms or proteinuria with known hypertension is defined as superimposed preeclampsia. The development of hypertension without proteinuria and systemic dysfunction was considered as gestational hypertension.

## RESULTS

Out of 5890 women who delivered during study period, 240 cases were identified as a case of hypertensive

disorder of pregnancy, so the frequency of HDP comes out to be 4.07% in present study group. Among the diagnosed cases of HDP, about 70% women were unbooked and most of them belonged to lower middle socioeconomic status, residing in rural area (Table 1 and 2).

**Table 1: Demographic characteristics of mother with HDP in study population.**

Age group	N= (240)	%
18-25	122	50.83
26-30	88	36.66
31-35	20	8.33
>35	10	4.16
Parity	N= (240)	%
Primigravida	144	60
multigravida	96	40
Education	N= (240)	%
Primary	110	45.83
Secondary	71	29.58
Graduate	59	24.58
Socio economic status	N= (240)	%
Lower	151	62.91
Middle	70	29.16
Upper	19	7.91

**Table 2: Distribution of patients according to residential area.**

Status	Rural	Urban	%
Booked	35	37	30
Unbooked	109	59	70

Incidence of HDP was most commonly seen in term (37-40wks) which contributed about 58.33% (Table 3).

**Table 3: Distribution of cases according to gestational age.**

Gestational age (weeks)	N=240	%
Early preterm (28-34 weeks)	32	13.33
Late preterm (34-37 weeks)	44	18.33
Term (37-40 weeks)	140	58.33
Postdated (>40 weeks)	24	10

It could be due to lack of awareness of early antenatal checkups and also because of common tendency to seek medical advice in later half of pregnancy either with onset of labour or due to some complication of raised blood pressure. Among different categories of HDP, mild preeclampsia was the commonest disorder with frequency of 46.66%, followed by severe preeclampsia with frequency of 25.41%. Antepartum eclampsia also contributed a good amount of patients in present study i.e. 9.10%, most of them had been admitted with history of fits. Gestational hypertension was the least common disorder with frequency of 18.75% (Table 4).

**Table 4: Prevalence of types of hypertensive disorders on population.**

Type of HDP	N=240	%
GHT	45	18.75
Mild preeclampsia	112	46.66
Severe preeclampsia	61	25.41
Eclampsia	22	9.1

In terms of mode of delivery, it was found that caesarean section was the commonest route of delivery and it accounts for 80% in present study. Most common indication of LSCS was non-reassuring fetal heart rate with uncontrolled blood pressure. Vaginal delivery rates were only 20%. Maternal complication in terms of HELLP syndrome was the commonest maternal complications followed by AKI in present study. As deranged liver function with raised liver enzymes SGOT and SGPT along with thrombocytopenia was commonly seen in severe preeclampsia and eclampsia group .so these women had increased rate of blood and blood component transfusion along with need of ICU care. There were 28.33% new born who required NICU care. Babies who need NICU admission also had low APGAR score at birth (Table 5). In terms of fetal outcome among total HDP cases, there were 7.08% still born in present study.

**Table 5 Prevalence of maternal and fetal outcome in study population.**

Mode of delivery	N=240	%
LSCS	192	80
NVD	37	15.41
Operative V D	11	4.5
<b>Maternal outcome</b>		
Preeclampsia	22	9.10
HELLP	32	13.33
AKI	10	4.40
Abruption	4	1.60
CVA	3	1.50
PPH	13	5.41
Pulmonary oedema	7	2.90
Maternal death	5	2.07
<b>Perinatal outcome</b>		
Mother side	155	64.58
NICU	68	28.33
Still born	17	7.08

## DISCUSSION

Hypertensive disorder of pregnancy (HDP) is still a big threat for maternal life. Many theories regarding its etiology have been suggested including abnormal placentation, immunologic phenomenon, coagulation abnormalities, angiogenesis factors or endothelial damage .<sup>4</sup> It is a real threat for pregnancy as there are no ideal screening method or any proven preventive measures for this serious medical disorder affecting pregnancy, till

date. So, it is very important to aware all the antenatal women about the risk factors of this medical disorder in view of better fetomaternal outcome. As it is known that it is a progressive disease and cannot be altered, the outcome but still authors can modify the serious complication of this entity by timely interference. As per present study, incidence of hypertensive disorder of pregnancy is 4.07% (240 out of 5890 deliveries), which is comparable to study conducted by Lo Jo et al that shows incidence of 3-10%.<sup>5</sup> In present study frequency of GDP was more commonly seen in younger age group i.e.< 25 years and also more frequent among primigravidas as compared to multigravidas which was found to be comparable to study done by Mc Gillivary who found that primigravidas were 15 times more vulnerable for HDP as compared to multi gravida. Incidence of preeclampsia was 71% which was higher than the results of Femilonia et al who reported it 54% and that of gestational hypertension is of 26%.<sup>6,7</sup> When authors compared the mode of delivery, it was found that Caesarean section was more frequent which accounts for 80% in present study as compared to vaginal birth, which were seen only in 20% cases. These results differ from other studies which shows much lower number of caesarean as compared to vaginal birth, but study conducted by Dissanaykya VH et al revealed almost similar results in terms of Cesarean rate of 78%.<sup>8</sup>

Higher rate of caesarean may be due to electronic fetal heart rate monitoring via CTG, so early detection of heart rate variability in terms of non-reassuring fetal heart as an indication for caesarean and more number of cases of severe preeclampsia and eclampsia in present study population. In terms of maternal complications due to hypertensive disorder it was found that eclampsia was the commonest complication - 17.91% in our centre followed by HELLP syndrome which was 9.23% in the study group. While some other study conducted by Prakash et al and Sachan et al found the rate of HELLP 7.5% & 3.07% respectively.<sup>9,10</sup> Abruptio placentae as a complication of severe preeclampsia was as low as 1.6% in present study compared to some other which showed much higher results up to 20%.<sup>9</sup> Authors had come across with maternal death in 5 patients and 2 of them came with shock after convulsions, shifted to ICU but not regained consciousness and diagnosed as CVA and died after 2 days ,rest were died due to ARDS and AKI. In terms of fetal outcome 31.66 % baby delivered preterm and 28.33% newborn required NICU care and about 7.08% mothers had still born, some were very premature but term IUD were also seen in patients with eclampsia. Similar results were also found in study conducted by Kapoor et al<sup>11</sup> who found prematurity in 23% patients having HDP and concluded that prematurity was one of the major risk factor for perinatal mortality.

## CONCLUSION

Hypertensive disorder of pregnancy is one of the commonest medical disorder of pregnancy. Researches

are going on to find out the exact etiology of the disease so that better preventive and curative methods can be adopted to prevent its complications during pregnancy. In our country, where women are not aware about the importance of antenatal check-ups, awareness and knowledge of such type of dreaded complication in pregnancy and utilisation of health care facility by the pregnant women is very important. Early detection and timely management of HDP can prevent the serious complications and maternal deaths.

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