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A Study to Assess the Impact of Pregnancy Induced Hypertension on Fetal Outcomes among PIH Patients Delivered at Tertiary Care Hospital, Dadra & Nagar Haveli

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ABSTRACT

Background: Hypertension is one of the common medical complications of pregnancy & contributes significantly to maternal & perinatal morbidity & mortality. The World Health Organization estimates that at least one woman dies every seven minutes from complications of hypertensive disorders of pregnancy. Hence a study was undertaken to assess the impact of Pregnancy Induced Hypertension on fetal outcomes among mothers with PIH who delivered at tertiary care hospital, Dadra & Nagar Haveli.
Method: It was a cross sectional study conducted at Shri Vinoba Bhave Civil Hospital, Silvassa, Dadra & Nagar Haveli from September to November 2020.The sample size of the study was 32. The data regarding demographic variables, obstetric history, clinical details & examinations, investigations & fetal outcomes was collected using Structured Interview Schedule.
Result: In the present study, Gestational Hypertension was found to be 65.62%, Pre eclampsia was 28.12% and Eclampsia was found to be 6.25%. It was more prevalent among multipara mothers. The clinical representation of PIH showed that 71.87% mothers had pain in lower abdomen, 37.3% had pedal edema followed by 15.62% headache & 9.37% blurring of vision. Antihypertensive drugs (93.75%) were given to almost all the mothers whereas 9.37% were treated with anticonvulsant medicines. The most common fetal complications found were preterm births (43.75%) & LBW (37.5%). 28.12% babies required NICU admission due to various reasons whereas 6.25% neonatal deaths were reported.
Conclusion: Pregnancy-related hypertensive disorders are common and adversely impact perinatal outcomes. Efforts should be made at both the community and hospital levels to increase awareness regarding hypertensive disorder of pregnancy and reduce its associated morbidity and mortality.

Keywords: PIH, Fetal Outcomes, Blood Pressure

INTRODUCTION

Hypertension in pregnancy is BP $\geq$ 140/90 mm of Hg measured 2 times with at least a 6 hour interval. Rise in systolic and diastolic blood pressure, both are important in the identification of PIH. Pregnancy induced hypertension (PIH) is hypertension that occurs after 20 weeks of gestation in women with previously normal blood pressure. The broad classification of

pregnancy-induced hypertension during pregnancy is gestational hypertension, pre-eclampsia and eclampsia.

HTN	BP > 140/90 mm Hg measured 2 times with at least a 6 hour interval.
PROTEINURIA	Urinary excretion of 0.3 gm protein/24 hours specimen or 0.1 gm/L.
GESTATIONAL HTN	BP > 140/90 mm Hg for the 1st time in pregnancy after 20 weeks, without proteinuria.
PRE-ECLAMPSIA	Gestational hypertension with proteinuria.
ECLAMPSIA	Women with pre-eclampsia complicated with convulsion and/or coma.

Pregnancy-induced hypertension occurs in about 5-8% of all pregnancies. Although the cause of PIH is unknown, certain factors are known to increase the risk of PIH, such risk factors include that PIH mostly affects young women with a first pregnancy, pregnant women younger than 20 years and those older than 40 years, women with multiple fetuses, pregnant diabetics, pregnant women with preexisting hypertension or previous episodes of preeclampsia or PIH and pregnant women with preexisting renal disease.

PIH complicates the pregnancies and leads to increased risk of adverse fetal, neonatal and maternal outcome including preterm birth, intrauterine growth retardation (IUGR), perinatal death, ante partum haemorrhage, postpartum haemorrhage and maternal death.

Most deaths in PIH occur due to its complications & not due to hypertension. With the advent of antenatal care in developed countries, severe degree of toxaemia and eclampsia has become mostly preventable. Moreover, despite the fact that pregnancy induced hypertension is a leading causes of maternal morbidity and mortality during pregnancy, little is known about the current magnitude of PIH and its impact on fetal outcomes at Shri Vinoba Bhave Civil Hospital, Silvassa.

OBJECTIVE

1) To assess the clinical presentation among PIH patients delivered at tertiary care hospital, Dadra & Nagar Haveli
2) To assess the impact of Pregnancy Induced Hypertension on fetal outcomes among PIH patients delivered at tertiary care hospital, Dadra & Nagar Haveli

METHODOLOGY

Study Design & Setting

It was a cross sectional study conducted at Shri Vinoba Bhave Civil Hospital, Silvassa, Dadra & Nagar Haveli from September to November 2020. It is 500 bedded tertiary care Govt. Teaching Hospital attached with a Govt Medical College at Silvassa.

Study Population

All PIH patients delivered at tertiary care hospital, Dadra & Nagar Haveli during the time framework of the study & meeting sampling criteria were included in the study

Sample Size

The sample size of the study was 32.

Sampling Criteria

Inclusion Criteria

- Women with ≥20 weeks of gestation with PIH& delivered at tertiary care hospital, Dadra & Nagar Haveli
- Women who were willing to participate

Exclusion Criteria

- Antenatal women having chronic hypertension

Tool & Data Collection

A Structured Questionnaire was prepared. The data was collected using Structured Interview Scheduled method. It was divided into three sections. Section 1 includes basic demographic variables. Section 2 was divided into:

a) Distribution of PIH patients as per Obstetric History
b) Distribution of PIH patients as per their Blood Pressure
c) Distribution of PIH patients as per classification of PIH

d) Distribution of PIH patients as per Medications Received
e) Fetal Outcomes of Patients with PIH

RESULTS

Table 1: Demographic profile of PIH mothers (n= 32)

Demographic	Number	Percentage (%)
Age Group (In Years)		
18-22	5	15.62
23-27	12	37.5
28-32	11	34.37
>32	4	12.5
Religion		
Hindu	30	93.75
Muslim	2	6.25
Christian	0	0
Others	0	0
Residential status		
Urban	12	37.5
Rural	20	62.5

Table:1 shows that majority of PIH mothers 12(37.5%) & 11(34.37%) belonged to the age group of 23-27years and 28-32 years respectively. Most of the PIH mothers were Hindu & residing in rural areas of Dadra & Nagar Haveli.

Table 2: Distribution of PIH Mothers as per Obstetric history (n= 32)

Obstetric History	Number	Percentage (%)
Parity		
Primipara	9	28.12
Multipara	23	71.87
Past obstetric history of mother with PIH (n=23)		
PIH	23	100
Preterm	5	21.73
Previous CS	11	47.82
Abortion	0	0
Clinical Presentation during present pregnancy (Multiple responses)		
Pain in lower abdomen	23	71.87
Headache	5	15.62
Blurring of vision	3	9.37
Pedal edema	12	37.5
Convulsion	2	6.25
Epigastric discomfort/ vomiting	2	6.25
Dizziness	4	12.5
No Complaint	7	21.87

Table 2 shows that PIH was more prevalent among Multipara mothers. Total 23 (71.87%) were multipara out of which all of them had history of PIH in their previous pregnancy, 5 (21.73%) had preterm deliveries & 11 (47.82%) had undergone cesarean section during their previous pregnancy. The clinical presentation in mothers with PIH shows that 23 (71.87 %) of them had pain in lower abdomen, 12 (37.5%) had pedal edema, 5 (15.62%) had headache followed by 3 (9.37%) blurring vision, 4 (12.5%) Dizziness & 2 (6.25%) with epigastric discomfort/vomiting. Out of 32 PIH mothers, 2 (6.25%) experienced convulsion whereas 7(21.87%) mothers did not have any significant complaints related to PIH.

Table 3: Distribution of Mothers as per classification of PIH (n= 32)

Classification of PIH mothers (D.C Dutta)	Number	Percentage (%)
Gestational hypertension	21	65.62%
Pre eclampsia	9	28.12%
Eclampsia	2	6.25%

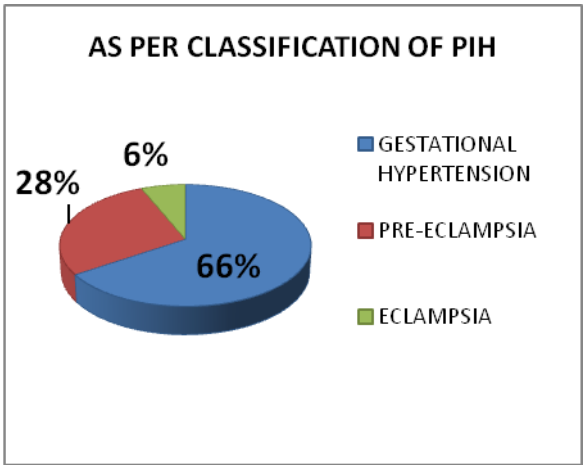

Figure 1: Distribution of Mothers as per classification of PIH

Table 3 shows the distribution of mothers as per classification of PIH. Out of 32 PIH mothers, majority of the mothers 21(65.62%) had Gestational Hypertension whereas 9(28.12%) were diagnosed of having pre eclampsia & 2 (6.25%) PIH pregnancies were complicated into eclampsia.

Table 4: Distribution of PIH mothers as per their blood pressure (n= 32)

Classification of PIH mothers on the basis of blood pressure(D. C. Dutta)	Number	Percentage (%)
Systolic B.P. (in mm hg)		
140-160	26	81.25%
161-180	5	15.62%
>181	1	3.12%
Diastolic B.P. (in mm hg)		
90-100	23	71.87
101-110	7	21.87
>111	2	6.25

Table 4 shows the distribution of PIH mothers as per their Blood Pressure. Out of 32 PIH mothers, majority 26

(81.25%) of PIH mothers had their systolic Blood Pressure between 140-160mmHg & 1(3.12%) had systolic blood pressure >181mm Hg while majority 23(71.87%) of mothers had their diastolic blood pressure between 90-100 mm Hg. 7(21.87%) & 2(6.25%) had diastolic blood pressure between 101-110 mmHg & >111 mm Hg respectively.

Table 5 shows that majority of PIH mothers 30(93.75%) were taking antihypertensive drugs, 3(9.37%) were taking anticonvulsant & 1(3.12%) was taking no medicine.

Table 5: Distribution of PIH mothers as per drug received (n= 32)

Drug	Number	Percentage (%)
Antihypertensive	30	93.75
Anticonvulsant	3	9.37
No drug	1	3.12

Table 6: Fetal outcome in mothers with PIH (n= 32)

Outcome	Number	Percentage (%)
Preterm	14	43.75
Post term	2	6.25
LBW (<2.5 kg)	12	37.5
IUGR	2	6.25
NICU admission	9	28.12
IUFD	0	0
Still Birth	0	0
Neonatal Death	2	6.25

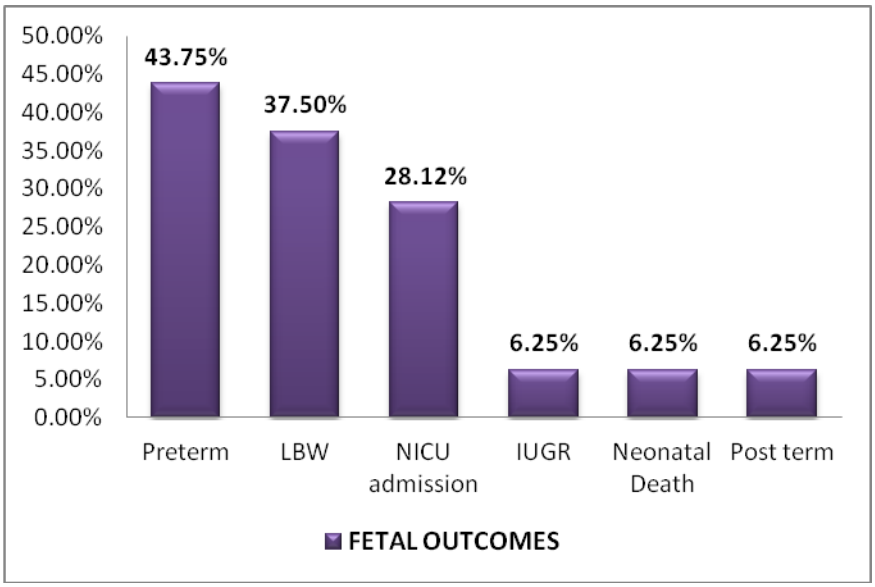

Figure 2: Fetal outcome in mothers with PIH (n= 32)

Table 6 shows the fetal outcomes of PIH mothers. Out of 32 mothers 14 (43.75%) had preterm delivery & 2 (6.25%) were post term delivery. 12 (37.5%) babies were LBW (<2.5kg) & 2 (6.25%) had IUGR, 9 (28.12%) were required admission to NICU due to various causes, 2 (6.25%) neonatal death were reported.

CONCLUSION

In the present study, Gestational Hypertension was found to be 65.62%, Pre eclampsia was 28.12% and Eclampsia was found to be 6.25%. PIH was more prevalent between the age of 23 - 32 years and among multipara mothers. The clinical representation of PIH showed that 71.87% mothers had pain in lower abdomen, 37.3% had pedal edema followed by 15.62% headache & 9.37% blurring of vision. All multipara mothers had history of PIH, 47.32% had previous CS whereas 21.73% had preterm deliveries in their previous pregnancies. Antihypertensive drugs (93.75%) were given to almost all the mothers whereas 9.37% were treated with anticonvulsant medicines. The most common fetal complications found were preterm births (43.75%) & LBW (37.5%). 28.12% babies required NICU admission due to various reasons whereas 6.25% neonatal deaths were reported. Hence, health care providers should strengthen the primary and secondary prevention, early

diagnosis and prompt management of pregnancy-induced hypertension to reduce the incidence of adverse perinatal outcomes of pregnancy-induced hypertension. Awareness and resources should be made available at all levels to reduce the maternal and fetal complications associated with hypertensive disorders of pregnancy.

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