

Maternal and Foetal Outcomes in Gestational Hypertension

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Abstract

Background: Gestational hypertension is usually defined as having a blood pressure higher than 140/90 measured on two separate occasions, more than 6 hours apart, without the presence of protein in the urine and diagnosed after 20 weeks of gestation. **Aim:** To determine the factors associated with pregnancy related hypertensive disorder and its outcomes. **Materials and Methods:** The study is a prospective study was conducted in Father Muller hospital Thumby for a period of January 2015 to February 2016 in Department of Obstetrics and Gynaecology. During the study, 150 pregnant women with induced hypertension were selected for the study. **Results:** The highest percentage of pregnant women with hypertension was present in 18-23 years i.e. 36.6%, pregnancy induced hypertension was more in nulliparous women (60%), systolic blood pressure of 140-160 mm Hg was the highest blood pressure which was 90%, diastolic blood pressure of 90-100 mm Hg was the highest in 90% of the patients with PIH, medication for hypertension is taken more i.e. in 136 patients which constitute 90.6% of PIH patients, preterm foetal outcome was seen in most of the patients with PIH which constitute 46.7%, post term (3.3%), LBW (<2.5 Kg) (40%), IUGR and NICU admission constituted 4.7% and 2.7% respectively and the IUFD and neonatal death was the least outcome seen which constituted 1.3% each. **Conclusion:** It is noted from

our study that PIH is more prevalent in younger aged patients and patients who were nulliparous, increased adverse foetal outcome was observed. Early recognition and management can reduce morbidity and mortality among PIH patients.

Keywords: Pregnancy Induced Hypertension; Gestational Hypertension; Preeclampsia.

Introduction

After 20 weeks of gestation with hypertension and proteinuria, pre-eclampsia is a hypertensive disorder of pregnancy and is characterised by onset of high blood pressure. There may be breakdown of red blood cell which leads to low blood platelet count, impaired liver function, kidney dysfunction, swelling, shortness of breath due to fluid in the lungs or visual disturbances are symptoms of severe disease [1]. The risk of poor outcomes of both the mother and the child is increased by pre-eclampsia. There are many risk factors for pre-eclampsia like obesity, prior hypertension, older age, gestational diabetes, and diabetes mellitus [2]. Hypertension is defined with blood pressure of atleast 140 mm Hg for systolic and 90 mm Hg for diastolic on at least two occasions is considered to be normotensive. Severe hypertension is sustained rise in blood pressure to greater than or equal to 160 mm Hg for systolic and 110 mm Hg for diastolic [3,4]. In addition to these signs, if convulsions occurs then it is called eclampsia. Primarily, pre-eclampsia is a disorder of nulliparous, but multiparous pregnant women with new partner have a high risk of preeclampsia similar to that of nulliparous women [5]. For pathogenesis of preeclampsia, placenta delivery is the only treatment. The result of

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preeclampsia during pregnancy is increased mortality and morbidity and it can be dangerous to both mother and foetus. In both developed and developing countries, pre-eclampsia is a public health concern. In developing countries, illiteracy, lack of awareness, poverty and poor antenatal care is the real concern for pregnant mothers. The aim of the study is to determine the factors associated with pregnancy related hypertensive disorder and its outcomes.

Materials and Methods

The study is a prospective study was conducted in Father Muller hospital Thumbay period of January 2015 to February 2016 in Department of Obstetrics and Gynaecology. During the study, 150 pregnant women with induced hypertension were selected for the study. Inclusion Criteria was preeclampsia was diagnosed when there was hypertension i.e. BP \geq 140/90 mm Hg with proteinuria. Eclampsia was diagnosed when preeclampsia occurred along with convulsions. Exclusion criteria were gestational hypertension without proteinuria. Superimposed preeclampsia. Patients who were having chronic hypertension, who were diagnosed with other causes of convulsions in pregnancy like cerebral malaria and epilepsy were excluded from the study. A detailed history of all the patients selected were taken and all clinical examinations and all relevant laboratory investigations were collected. Informed consent was taken from all the pregnant woman. The permission from the ethical committee was also taken. Statistical data was entered in Microsoft excel and analysed by SPSS. Statistical significance was if $p \leq 0.05$.

Results

A total of 150 pregnant woman were admitted in Nizam's Medical College, Hyderabad for a period of January 2015 to February 2016 in Department of Obstetrics and Gynaecology, Hyderabad.

Table 1 shows that the highest percentage of pregnant women with hypertension was present in 18-23 years i.e. 36.6%. The highest percentage was present in hindus i.e. 97.3% and rural areas was prone to this when compared to urban area.

Table 2 shows that nulliparous women (60%) were more when compared to multiparous women (40%). Patient induced hypertension was more then other past obstetric history of patients i.e. 28.17%. Lower abdominal pain was the most clinical presentation during pregnancy which was 34%.

Table 3 shows that systolic blood pressure of 140-160 mm Hg was the highest blood pressure which was 90%. Diastolic blood pressure of 90-100 mm Hg was the highest in 90% of the patients with PIH.

Table 4 shows that medication for hypertension is taken more i.e. in 136 patients which constitute 90.6% of PIH patients. Patients taking anticonvulsants constitute 5.4%.

Table 5 shows that preterm foetal outcome was seen in most of the patients with PIH which constitute 46.7%. The IUFD and neonatal death was the least outcome seen which constituted 1.3% each.

Discussion

In our study, the highest percentage of pregnant women with hypertension was present in 18-23 years i.e. 36.6%, followed by 24-28 years which

Table 1: Demographic profile

Demographics	Number	Percentage (%)
Age group (in years)		
18-23	55	36.6
24-28	40	26.6
29-33	35	23.4
>32	20	13.4
Religion		
Hindu	146	97.3
Muslim	4	2.7
Residential Status		
Urban	16	10.6
Rural	134	89.4

Table 2: PIH patients distribution as per obstetric history

Obstetric History	Number	Percentage (%)
Parity		
Nulliparous	90	60%
Multiparous	60	40%
Past obstetric history of patients with PIH (n=71)		
PIH	20	28.17
Preterm	10	14.1
Previous C.S.	36	50.7
Abortion	5	7.04
Clinical presentation during pregnancy (Multiple responses)		
Lower abdominal pain	51	34%
Headache	25	16.6%
Vision blurred	13	8.6%
Oedema feet	20	13.3%
Convulsion	12	8%
Vomiting/Epigastric discomfort	15	10%
Dizziness	6	4%
No complain	8	5.3%

Table 3: Distribution of PIH patients as per their blood pressure

Blood Pressure	Number	Percentage(%)
Systolic Blood Pressure (in mm Hg)		
140-160	135	90%
161-180	10	6.6%
>180	5	3.4%
Diastolic Blood Pressure (in mm Hg)		
90-100	135	90%
101-110	11	7.3%
>110	4	2.7%

Table 4: Distribution of PIH patients as per medication received

Medication	Number	Percentage(%)
Antihypertensive	136	90.6%
Anticonvulsant	8	5.4%
No medication	6	4%

Table 5: Foetal Outcome

Outcome	Number	Percentage(%)
Preterm	70	46.7%
Post-term	5	3.3%
LBW (<2.5 Kg)	60	40%
IUGR	7	4.7%
NICU admission	4	2.7%
IUFD	2	1.3%
Neonatal Death	2	1.3%

constituted to 26.6%, followed by 29-33 years which constituted to 23.4%, followed by more than 32 years which constituted upto 13.4%. In study conducted by Gandhi et al. [6], it was found that 48.42% of PIH mother was 21-25 years of age group, followed by greater than 30 years of age (25.26%), 14.73% in 26-30 years of age group and 11.57% in less than 20 years of age. In a study done by

Khosravi et al. [7] it was noted that 55.6% PIH mother was 21-30 years of age followed by more than 30 years of age (32.2%) and less than 20 years of age (12.2%). In a study done by Ravikanth Patel et al. [8]; majority of PIH mothers were in the age group of 18-26 years (51.56%). Pregnancy induced hypertension was more in nulliparous women (60%) when compared to multiparous women

(40%) in our study. 55% in Primipara as compared to Multipara (45.0%) was observed in study conducted by Parmar et al; In study done by Gandhi et al. [6] and Khosravi et al. [7], 43.15% among primiparous and 56.85% multiparous and 32.8% PIH mother are nullipara while 67.2% were multipara respectively. In Ravikanth Patel et al. [8] study, PIH was more prevalent among nulliparous (57.81%) when compared to multiparous (42.18%). Among PIH mothers in our study, it was found that 34% had lower abdominal pain, 10% had vomitings followed by headache (16.6%), convulsion (8%), no any complain (5.3%), oedema feet (13.3%), dizziness (4%). In Ravikanth Patel et al. [8] study, 48.44% had lower abdominal pain, 18.75% had vomiting/epigastric discomfort followed by headache (12.50%), convulsion (10.94%), no any complain (10.94%), oedema feet (9.37%), dizziness (7.81%). In Gandhi et al. [6] study, 48.4% had labour pain, 11.6% had convulsion, 10.5% had no any complain, 9.5% had oedema feet and 6.3% headache and bleeding per vagina (6.3%). In our study, systolic blood pressure of 140-160 mm Hg was the highest blood pressure which was 90%, 161-180 constituted about 6.6%, >180 mm Hg constituted about 3.4%. Diastolic blood pressure of 90-100 mm Hg was the highest in 90% of the patients with PIH, 101-110 constituted about 7.3% and > 110 mm Hg constituted about 2.7%. In Ravikanth Patel et al. [8] study, 85.93% and 98.43% of had mild PIH with systolic B.P. 140-160 mmHg and diastolic B.P. 90-110 mmHg respectively. While 15.51% had sever PIH with systolic B.P. more than 160 mmHg. In Khosravi et al⁷ study, 96.3% of PIH mother had 140-190mmHg SBP and 61.1% had 90-110 mmHg of DPB. While 3.7% of mother had SBP more than 190 mmHg and 38.9% had more than 110 mmHg of DPB. 66.07% of PIH women were received Antihypertensive drug like methyldopa, nifedipine while 33.93% of PIH women does not received any medication and only do the bed rest in Monica Muti et al. [8] study, In Ravikanth Patel et al. [8], 79.69% were only on antihypertensive medication while 10.94% of patients were on antihypertensive and anticonvelesent medication and 9.37% did not received any medication during present pregnancy. In our study, medication for hypertension is taken more i.e. in 136 patients which constitute 90.6% of PIH patients. Patients taking anticonvulsants constitute 5.4%. In Seyom et al. [10] study, stillbirth rate of 10.2%, low birth weight of 30.5%, abortion 10.7% and preterm delivery 31.4%. In Jiji study, 40.0% of new born were low birth weight and 38.0% of babies were IUGR. In our study, preterm foetal outcome was seen in most of the patients with PIH which

constitute 46.7%, post term (3.3%), LBW (<2.5 Kg) (40%), IUGR and NICU admission constituted 4.7% and 2.7% respectively and the IUFD and neonatal death was the least outcome seen which constituted 1.3% each. In Ravikanth Patel [8] study, 54.69% mother had preterm delivery, 4.69% had post term delivery. 53.12% of babies are Low Birth weight, 07.81% are IUGR. Out of 64 delivery 18.75% of babies were required NICU admission for various causes with 1.56% were IUFD and 1.56% of neonatal death.

Conclusion

The most common disorder during pregnancy is pregnancy induced hypertension. It is noted from our study that PIH is more prevalent in younger aged patients and patients who were nulliparous, increased adverse foetal outcome was observed. Early recognition and management can reduce morbidity and mortality among PIH patients.

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