

Pregnancy Induced Hypertension and Foetal Outcome Among Patients with PIH in a Tertiary Care Teaching Hospital

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Abstract

Background: It is also estimated that pregnancy induced hypertension (PIH), one of the hypertensive disorders of pregnancy, affects about 5–8 % of all pregnant women worldwide. **Subjects and Methods:** Total forty-six (46) pregnant women who presented to World College of Medical Sciences Research and Hospital with pregnancy induced hypertension were enrolled. **Results:** Pregnancy induced hypertension was more prevalent among Nulliparous (56.5%). Out of 20 women 18 (39.1%) have past h/o of PIH, 8.7% had previous preterm delivery and 19.6% had previous LSCS. Table-2 also showed that clinical presentation in mother with PIH and found that 22(47.8%) had lower abdominal pain, 11(23.9%) had vomiting/ epigastric discomfort followed by headache 06(13.04%), convulsion 07(15.2%) and no complain 05(10.9%). **Conclusion:** PIH is more prevalent in younger age groups and nulliparous mothers. PIH lead to a various clinical manifestation some of this may use as early recognition of PIH. PIH also lead to increase adverse foetal outcome.

Keywords: Pregnancy Induce Hypertension, Blood Pressure, Foetal Outcome.

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Introduction

Worldwide, 10 % of all pregnancies are complicated by hypertension, with pre-eclampsia and eclampsia being the major causes of maternal and prenatal morbidity and mortality[1]. It is also estimated that pregnancy induced hypertension (PIH), one of the hypertensive disorders of pregnancy, affects about 5 – 8 % of all pregnant women worldwide[2]. Pregnancy induced hypertension (PIH) is defined as BP \geq 140/90 mmHg, taken after a period of rest on two occasions or \geq 160/110 mmHg on one occasion in a previously normotensive woman[3]. Although the cause of PIH is unknown certain factors are known to increase the risk of PIH such as risk factor includes that young women with first pregnancy, pregnant women younger than 20 years and older than 40 years of age, having diabetes, pre-existing hypertension, previous episode of PIH etc. They along with hemorrhage and infection, contribute greatly to maternal morbidity and mortality[4]. PIH is a pregnancy specific, multisystem disorder characterized by development of oedema, hypertension and proteinuria after 20 weeks of gestation[5]. World Health Organization estimates that at least one woman dies every seven minutes from complications of hypertensive disorders of pregnancy[6]. Pregnancies complicated with hypertensive disorders are associated with increased risk of adverse fetal, neonatal and maternal outcome including preterm birth, intrauterine growth retardation, perinatal death, ante partum haemorrhage, postpartum haemorrhage and maternal death[7].

Most deaths in PIH occur due to its complications & not due to hypertension per se. With the advent of antenatal care in large cities, severe degree of toxemia and eclampsia has become mostly preventable. However, in developing country, it still continues to be a major obstetric problem[8]. Thus, we can reduce the maternal mortality by prevention and proper management of these complications. Our aim was to find out the common clinical presentation and foetal outcome among PIH patients. So, we can make early diagnosis and thereby morbidity and mortality can be reducing among PIH patients in a tertiary care teaching hospital.

Subjects and methods

This cross-sectional study was carried out in the Department of Obstetrics and Gynaecology, World College of Medical Sciences Research and Hospital, Jhajjar, during the period from October 2020 to May 2021. Total forty-six (46) pregnant women who presented to World College of Medical Sciences Research and Hospital with pregnancy induced hypertension were enrolled for the study with following inclusion and exclusion criteria. Women with 20 weeks of gestation and those who willing to include in this present study. Those pregnant mother having chronic hypertension and those who not willing to excluded from study. Verbal informed consent of each pregnant woman was taken for participation in this study. A necessary information such as socio-demographic information's, detail clinical and obstetric history, clinical examination, investigations and foetal outcome was noted in preformed Performa. In our study we classify pregnant women into mild and severe hypertensive disorders of pregnancy, according to clinical classification 7 PIH classified into mild PIH (140/90 to 159/109 mmHg) and severe PIH (160/110 mmHg or higher)[9]. Data analysis was performed with Microsoft Excel. Significance for continuous variables was calculated using appropriate statistical test were applied. The p-value<0.05 was considered significant. All the analysis was carried out on IBM SPSS -22.0 version.

Observations and results

This present study was carried out in the Department of Obstetrics and Gynaecology, World College of Medical Sciences Research and

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Hospital, Jhajjar. Total of 46 pregnant women with PIH were participated in this study and we noted the following observations in our study. Table:1 shows the higher percentage of PIH was noted among 23-28 years of age group (43.5%) followed by 18-23 years of age group (23.9%), 28-33 years of age group (26.1%) and more than 33 (6.5%). Majority of patients participated in study were Hindu (93.5%) and residing in Rural area (78.3%).

Table 2 shows the pregnancy induced hypertension was more prevalent among Nulliparous (56.5%). Out of 20 women 18 (39.1%) have past h/o of PIH, 8.7% had previous preterm delivery and 19.6% had previous LSCS. Table-2 also showed that clinical presentation in mother with PIH and found that 22(47.8%) had lower abdominal pain, 11(23.9%) had vomiting/ epigastric discomfort followed by headache 06(13.04%), convulsion 07(15.2%) and no any complain 05(10.9%).

Fig. 3: shows the distribution of mothers as per classification of PIH. Out of 46 PIH mothers, majority of the mothers 30(65.2%) had Gestational Hypertension whereas 13(28.3%) were diagnosed of having pre-eclampsia & 03 (6.5%).

Table 3: shows the distribution of PIH mothers as per their Blood Pressure. Out of 46 PIH mothers, majority 39 (84.8%) of PIH mothers had their systolic Blood Pressure between 140-160mmHg, 05(10.9%) & 02(4.3%) had systolic blood pressure between 101-110 mmHg & >181mm Hg while majority 39(84.8%) of mothers had their diastolic blood pressure between 90-100 mm Hg, 06(13.04%) & 01(2.2%) had diastolic blood pressure between 101-110 mmHg & >111 mm Hg respectively.

Fig.4: shows that majority of PIH mothers 36(78.3%) were taking antihypertensive drugs, 06(13.04%) were taking anticonvulsant & 04(8.7%) was taking no medicine.

Fig.5: Shows the fetal outcomes of PIH mothers. Out of 46 mothers 25 (54.3%) had preterm delivery & 02(4.3%) were post term delivery, 21(45.7%) babies were LBW (<2.5kg) & 03(6.5%) had IUGR, 11(23.9%) were required admission to NICU due to various causes, 01 (2.2%) neonatal death were reported.

Table 1: Demographic profile of PIH patients

Demographic	No. of patients; n=46 (%)
18-23	11 (23.9%)
23-28	20 (43.5%)
28-33	12 (26.1%)
>33	03 (6.5%)
Religion	
Hindu	43 (93.5%)
Muslim	03 (6.5%)
Christian	00 (0.0%)
Others	00 (0.0%)
Residential status	
Urban	10 (21.7%)
Rural	36 (78.3%)

Table 2: Distribution of PIH patient as per obstetric history

Obstetric history	No. of patients; n=46 (%)
Parity	
Nulliparous	26 (56.5%)
Multipara	20 (43.5%)
Past obstetric history of patients with PIH (n=20)	
PIH	18 (39.1%)
Preterm	04 (8.7%)
Previous C.S	09 (19.6%)
Abortion	01 (2.2%)
Clinical presentation during present pregnancy (Multiple responses).	
Pain in lower abdomen	22 (47.8%)
Headache	06 (13.04%)
Blurring of vision	02 (4.3%)
Oedema feet	05 (10.9%)
Convulsion	07 (15.2%)
Epigastric discomfort/vomiting	11 (23.9%)
Dizziness	04 (8.7%)
No complain	05 (10.9%)

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

Classification of PIH patients on the basis of blood pressure	No. of patients; n=46 (%)
Systolic B. P. in mmHg	
140-160	39 (84.8%)
161-180	05 (10.9%)
>181	02 (4.3%)
Diastolic B. P. in mmHg	
90-100	39 (84.8%)
101-110	06 (13.04%)
>111	01 (2.2%)

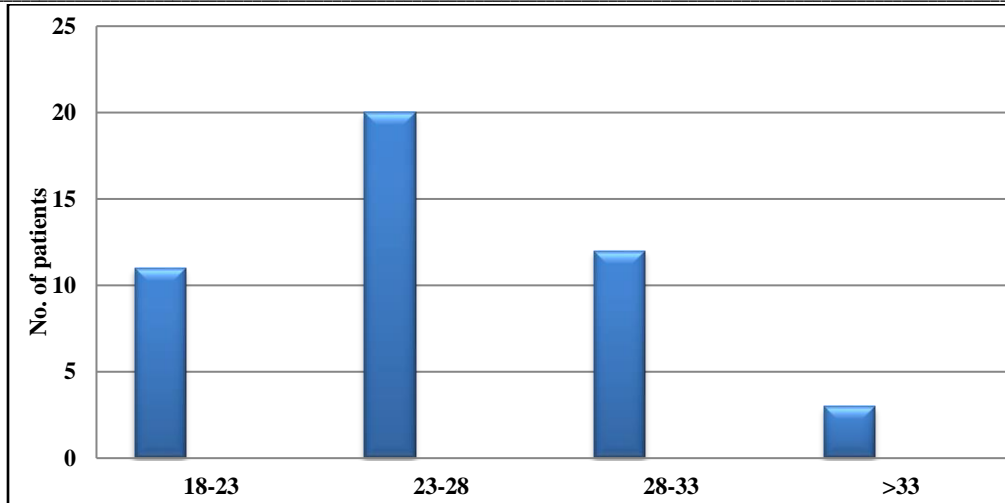


Fig. 1: Show the distribution of patients a/c to different age group.

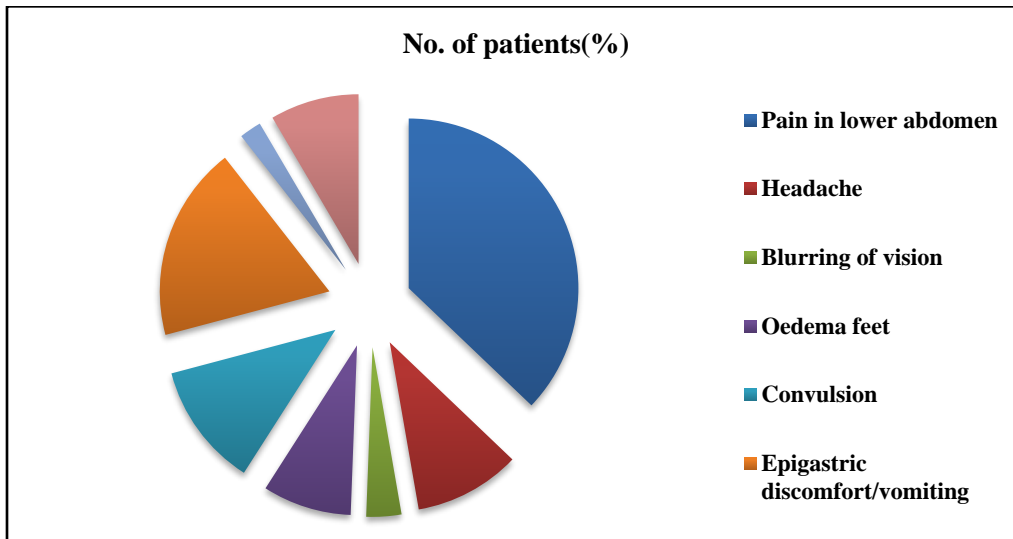


Fig. 2: Show the Clinical presentation during present pregnancy (Multiple responses).

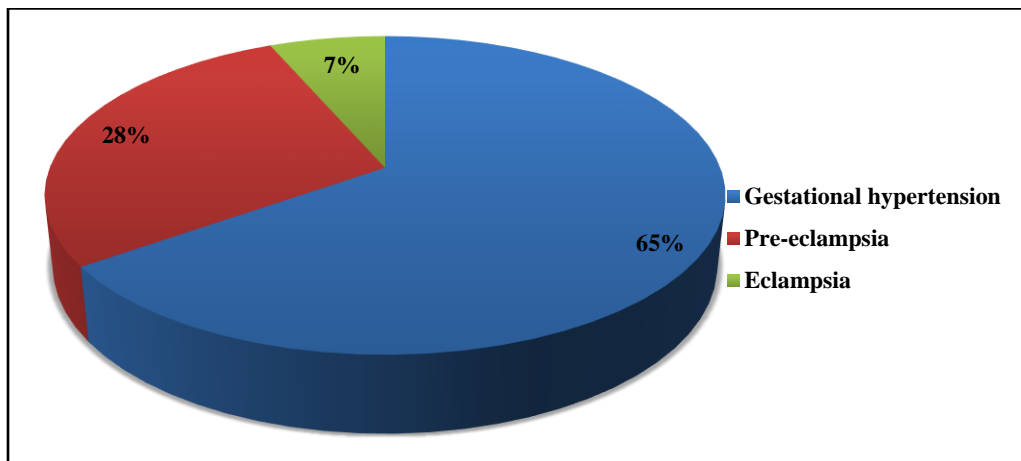


Fig.3: Shows the distribution of Mothers as per classification of PIH.

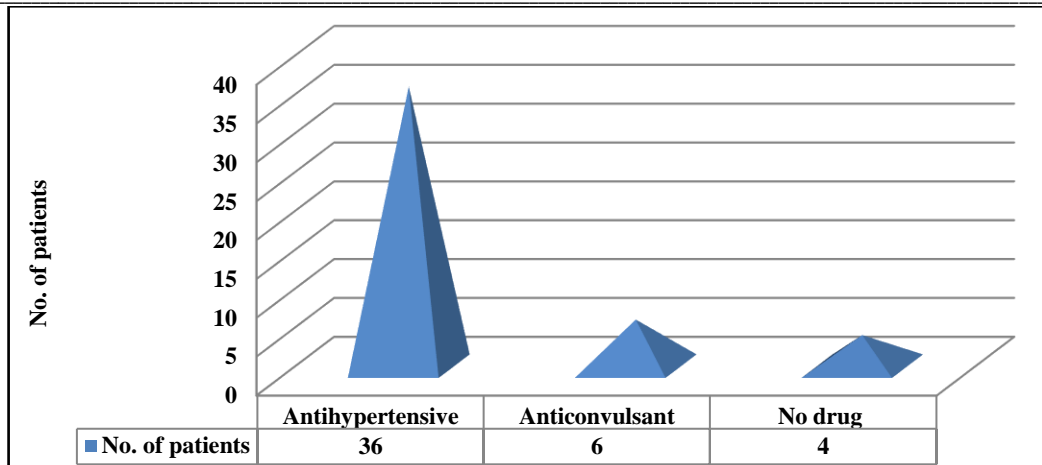


Fig. 4: Show the distribution of PIH patients as per medication received.

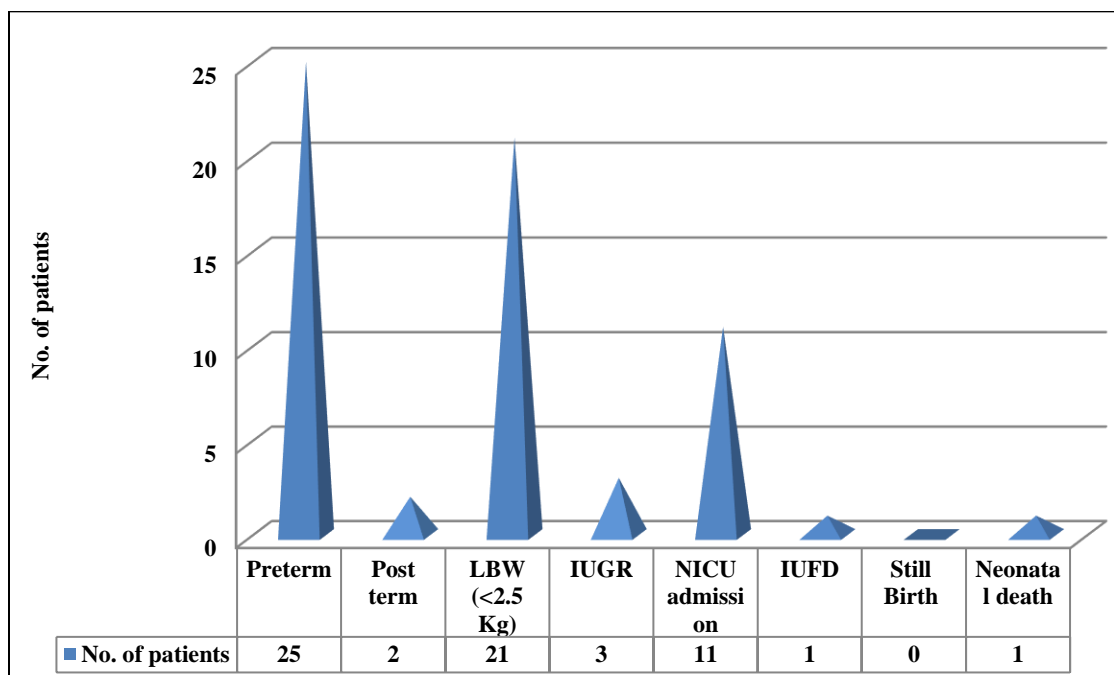


Fig. 5: Shows the foetal outcome in patients with PIH.

Discussion

Majority of patients participated in study were Hindu (93.5%) and residing in Rural area (78.3%). The high prevalence of PIH was noted among 22-28 years of age group (43.5%) followed by 18-22 years of age group (23.9%) and 28-33 years of age group (26.1%) and more than 33 age (6.5%). A study conducted by Parmar et al at NHL municipal college, Ahmadabad, Gujarat noted that PIH is more prevalent among pregnant mother aged less than 20 years of age (53.0%) and 21-30 years (47.0%)[10]. Gandhi et al in their study 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[11]. Similarly Bangal et al in their study found majority of PIH mother were in age group of 15-20 years (52.63%) followed by 21-25 years (31.59%), 26-30 years of age (10.52%) and above 30 years

(5.26%)[12]. Khosravi et al also 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%)[13]. This present study

pregnancy induced hypertension was more prevalent among nulliparous (56.5%) as compared to multiparous (43.5%). Similar finding was reported by Parmar et al in their study conducted at NHL Municipal College, Ahmadabad 55% in Primipara as compared to Multipara (45.0%)[10]. In contrast to this different study conducted by Gandhi et al and Khosravi et al 43.15% among primiparous 56.85% multiparous and 32.8% PIH mother are nullipara while 67.2% were multipara respectively[11,13]. This present study among PIH mother we found that 47.8% had lower abdominal pain, 23.9% had vomiting/epigastric discomfort followed by headache (13.04%), convulsion (15.2%), no any complain (10.9%), oedema feet (10.9%), dizziness (8.7%). Almost similar finding was reported in study conducted by Gandhi et al at Dharpur-Patan showed that 48.4% had labour pain, 11.6% had convulsion, 10.5% had no complain, 9.5% had oedema feet and 6.3% headache and bleeding per vagina (6.3%)[11]. In present study among PIH patients 84.8% and 97.8% of had mild PIH with systolic B.P. 140-160 mmHg and diastolic B.P. 90-110 mmHg respectively. While 15.2% had sever PIH with systolic B.P. more than 160 mmHg. Khosravi et al in their study showed 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[13]. In our study among PIH mother 78.3% received only antihypertensive medication while 13.04% of patients received anticonvulsant medication and 8.7% does not received any medication during present pregnancy. Monica Muti et al in their study showed that 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[14]. In study conducted at Bharati Hospital, Pune showed that Overall 34 (32.69%) patients were treated with a single antihypertensive drug, and 70 (67.31%) patients were treated with antihypertensive drug combinations[15]. Hypertension is the most common medical problem encountered in pregnancy and remains an important cause of maternal and fetal morbidity and mortality[16]. It complicates almost 10% of all pregnancies[17]. Pregnancies complicated by hypertension are associated with increased risk of adverse fetal, neonatal and maternal outcomes, including preterm birth, intrauterine growth restriction, perinatal death, acute renal or hepatic failure, antepartum haemorrhage, postpartum haemorrhage and maternal death[18]. Hypertensive disorders of pregnancy are one of the major causes of maternal morbidity and mortality leading to 10–15% of maternal deaths, especially in developing world[19]. It may complicate about 3–10% of all pregnancies with variable incidence among different hospitals and countries[20]. In present study 54.3% mother had preterm delivery, 4.3% had post term delivery. 45.7% of babies are Low Birth weight, 6.5% are IUGR. Out of forty-six delivery 23.9% of babies were required NICU admission for various causes with 2.2% were IUFD and 2.2% of neonatal death. Seyom et al in their study on maternal and foetal outcome of pregnancy related hypertension in Karl Referral Hospital, Ethiopia showed that stillbirth rate of 10.2%, low birth weight of 30.5%, abortion 10.7% and preterm delivery 31.4%[21]. Jiji showed that 40.0% of new born were low birth weight and 38.0% of babies were IUGR[22]. Bangal In their study at a rural tertiary level health care referral centre in Loni, Maharashtra out of 100 PIH women 19.0% have IUGR, 17.0% IUFD, 5.0% neonatal death[23]. Ahmed In their study at Grant medical college and Sir J. J. Group of hospitals, Mumbai showed that out of 250 delivery among PIH mother 72 (28.8%) of newborn had birth weight less than 2 kg and 69 (27.61%) on new born required NICU admission[24].

Conclusion

These finding suggest that the being pregnant brought about high blood pressure is a common clinical ailment related to being pregnant. We stated that PIH is more conventional in younger age corporations and nulliparous moms. PIH result in a various clinical manifestation a number of this could use as early reputation of PIH. PIH additionally result in increased detrimental foetal final results. Thus, fetal morbidity and mortality can be reduced among PIH patients by way of early recognition and institutional control.

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