

# Analysis of pre-eclampsia (PIH) I/V/O maternofetal outcome

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## Abstract

**Background:** Hypertensive disorders of pregnancy represent the most common medical complication accounting for 7-15% of all gestations. Pre-eclampsia incidence is estimated to be seven times greater in developing countries compared to the developed countries and it reportedly complicates 2-10% of pregnancies worldwide. We conducted a study to determine maternofetal outcome in PIH. **Methods:** A prospective observational study was conducted among 81 patients admitted in the Department of OBGY, MGM Medical College and Hospital, Aurangabad from 1st April 2019 to 30th September 2019. **Results:** PIH affects more to 20 to 25 years age group and incidence is more common in irregularly booked patients and more common in multigravida. Among PIH 60% had preeclampsia and 9.8% had chronic HTN and among PIH patients 87.6% had mild PIH. Cesarean section is more common mode of delivery among PIH mothers (62.9%). **Conclusion:** PIH is associated with various complications in both mother and baby particularly preterm delivery. Regular ANC visits, awareness among patients and timely intervention by doctors can reduce maternal and perinatal complications.

**Key Words:** low birth weight, PIH, preeclampsia, preterm,

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Preclampsia affects 5-7% of all pregnancies.<sup>1</sup>

Hypertensive disorders during pregnancy can be included into well-defined groups

1. Pregnancy induced hypertension (PIH) is classified as
  - a) Gestational hypertension
  - b) Preeclampsia
  - c) Eclampsia
2. Chronic hypertension
3. Superimposed preeclampsia on chronic hypertension.

PIH is pregnancy specific, multisystem disorder characterized by development of edema, hypertension and proteinuria after 20 weeks of gestation.<sup>2</sup> It remains amongst most significant and intriguing unsolved problems in obstetrics, certain factors are known to increase risk of PIH mainly young women in first pregnancy, pregnant women younger than 20 years and older than 40 years, multiple pregnancy, diabetes, pregnant women with preexisting hypertension or previous episodes of preeclampsia, preexisting renal disease.<sup>2</sup> It is one of maternal disease that causes most detrimental effects to maternal, fetal and neonates

## INTRODUCTION

Pregnancy causes profound anatomical physiological and metabolic changes in the maternal tissue, how each body reacts to this is unpredictable and one of the commonest and dreaded complication is hypertension.<sup>2</sup> Pregnancy induced hypertension is known as toxemia or preeclampsia a form of high blood pressure in pregnancy. According to WHO it is estimated that at least one woman dies every seven minutes from complication of hypertensive disorders of pregnancy making it second leading cause of maternal mortality.<sup>3</sup>

including preterm birth, FGR, perinatal death, antepartum hemorrhage, postpartum hemorrhage and maternal death. <sup>2</sup>Most deaths are due to its complications and not due to hypertension. Treating hypertension does not modify the progression of disease but decreases complications Present study was conducted with objectives to study the prevalence of PIH and find association of PIH with maternal and perinatal outcome.

**AIM**

To analyze risk factors and severity of pregnancy induced hypertension for outcome.

**OBJECTIVES**

To make early diagnosis and offering prompt treatment.

To reduce maternal, perinatal morbidity and mortality among PIH patients.

**MATERIALS AND METHODS**

**Study design:** Prospective observational study

**Study period:** 1st April 2019 to 30th September 2019

**Place of study:** Department of OBGY, MGM Medical College and Hospital, Aurangabad.

All patients admitted in antenatal ward and labor room with raised BP readings were included in this study and analyzed.

Statistical analysis is done using SPSS software and the test of significance applied is the Chi-square test. Values below 0.05 were considered to be statistically significant.

**OBSERVATION AND RESULTS**

Table 1:

Age (in years )	Percentage (number =81)
18-20	20.9%(17)
21- 25	38.2%(31)
26-30	25% (21)
> 30	14.8% (12)
Booking status	Percentage (number = 81)
Regularly booked	24.6% (20)
Irregularly booked	75.3% (61)
Gestational age (in weeks)	Percentage (number = 81)
28-37	51.8% (42)
37-39	43.2% (35)
39-40	6.4% (2)
40-42	6.4% (2)
Gravida status	Percentage (number = 81)
1 <sup>st</sup>	40.7% (33)
2 <sup>nd</sup>	30.0% (25)
3 <sup>rd</sup>	19.7% (16)
4 <sup>th</sup>	3.7% (3)
5 <sup>th</sup>	4.9% (4)

Table 1 shows PIH affects more to 20 to 25 years age group and incidence is more common in irregularly booked patients and more common in multigravida.

Table 2

Duration of marriage ( in years )	Percentage (number =81)
< 2	39.5% (32)
3-5	24.6% (20)
6-10	24.6% (20)
> 10	11.1% (9)
Family type	Percentage (number =81)
Nuclear	27.2% (22)
Joint	72.8 % (59)

Table 2 shows Proves high fecundity remains one of the risk factor and PIH is more prevalent in joint family.

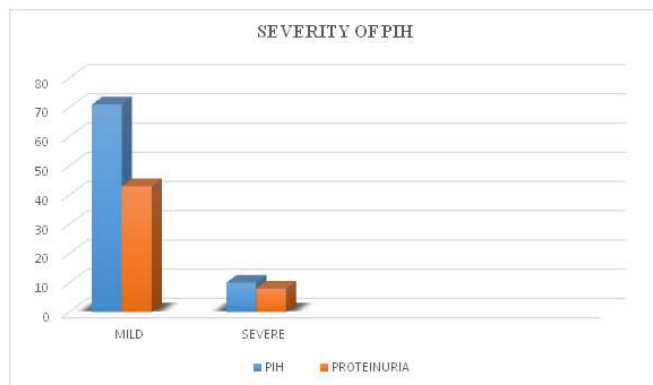


Figure 1

Figure 1 shows- Those 71 participants had mild PIH and 10 participants has severe PIH and in severe PIH 8 patients had proteinuria.

Table 3

Maternal symptoms	Percentage (number =81 )
Asymptomatic	59.2% (48)
Headache	18.5% (15)
Vomiting	9.8% (8)
Epigastric pain	4.9% (4)
Edema	13.5% (11)
Blurring of vision	4.9 % (4)
Convulsion	4.9 % (4)
<b>H/O PIH</b>	<b>Percentage (Number= 48)</b>
Yes	32.6% (15)
No	71 % (33)
<b>Classification</b>	<b>Percentage (number=81)</b>
Preeclampsia	60.4% (49)
Severe preeclampsia	17.2% (14)
Eclampsia	6.1% (5)
Chronic HTN	9.8% (8)
Superimposed preeclampsia on chronic HTN	6.1% (5)

Table 3 shows Among 81 PIH mothers, majority of patients (59%) were asymptomatic.45% patients were diagnosed and treated at our institute MGM. Among PIH 60% had preeclampsia and 9.8% had chronic HTN proving hypertension as the commonest complication of pregnancy

Table 4

PIH profile	Percentage (number =81)
Abnormal	9.8% (8)
Normal	90.1% (73)
<b>USG obstetrics</b>	<b>Percentage (number=81)</b>
Abnormal	29.6% (24)
Normal	70.3% (57)

Table 4 shows- Abnormal USG and blood investigations for diagnosis of PIH will help to less extent

Table 5: Association between diagnosis and NICU admission

Dignosis	NICU Admission		Total [n=73]	Chi-square value	P-value
	Required [n=32]	Not required[n=41]			
Preeclampsia	21	29	50	9.751	0.016S
Severe Eclampsia	05	05	10		
Eclampsia	06	01	07		
Chronic HTN	00	06	06		
<b>Total</b>	<b>32</b>	<b>41</b>	<b>73</b>		

**Table 6:** Association between maternal outcome and NICU admission in PIH patients

Maternal Outcome		NICU Admission		Total [n=73]	Chi-square value	P-value
		Required [n=32]	Not-required [n=41]			
Eclampsia	Positive	04	01	05	2.851	0.161 NS
	Normal	28	40	68		
Abrupton	Positive	01	00	01	1.299	0.438 NS
	Normal	31	41	72		
PPH	Positive	00	02	02	1.605	0.501 NS
	Normal	32	39	71		
HELLP	Positive	04	00	04	5.422	0.033 S
	Normal	28	41	69		
Oligohydramnios	Positive	08	08	16	0.316	0.776 NS
	Normal	24	33	57		

Table 5 and 6 shows -PIH associated complication requires early termination which increases incidence of NICU admissions

## DISCUSSION

In this study 81 PIH patients were enrolled and highest prevalence was noted among 21-25 years of age group (38.2%) followed by 26-30 years of age (25%) incidence of PIH is more common in irregularly booked patients but also detected in regularly booked patients due to more frequent antenatal care and early detection. A study conducted by Parmer *et al* at NHL Municipal College, Ahmedabad in 2012 noted that PIH is more common among pregnant women with age less than 20 years (53%) and 21-30 years (47%)<sup>7</sup> The study shows that PIH is more common in multigravida (59.2%) which is similar to the study conducted by Gandhi *et al* and khosravi *et al* in 2015 had 43.15% were among prim gravida and 56.8% were multigravida and risk increases with less average duration of marriage, because of more physical stress is it proved that patient staying in joint family are at more risk which is contrast to study conducted by tesfaye abera gudeta in Ethiopia in 2018.<sup>3</sup> Effective and regular antenatal care can detect PIH at earlier gestational age and hence more common in less than 37 weeks. In this study among multigravida patient 31.6% patient had history of PIH in previous pregnancy compared to 71% patients having no PIH earlier. In contrast to this study by Sarker Ahmed *et al* in 2017 98% had history of preeclampsia in previous pregnancy.<sup>4</sup> In our study among PIH mother we found that 59.2% were asymptomatic followed by headache being most common symptom. In contrast to study by Patel *et al* in 2018 lower abdominal pain (48.8%) was most common followed by headache (12.5%).<sup>2</sup> In present study among PIH patients 87.6 % had mild PIH with systolic BP 140-160 mm Hg and diastolic BP 90-110 mm Hg. It is similar to study by Patel R *et al* who stated mild PIH more common (85.9%).while 12.3% patients had severe PIH being systolic BP above 160 mm Hg and diastolic BP above 110 mm Hg.<sup>2</sup> Present study also observed higher incidence of preterm delivery

(51.8%). Eclampsia was the most common complication in present study followed by oligohydramnios, APH, PPH and HELLP which is similar to study by Bansal *et al*.<sup>5</sup> Eclampsia directly affects the birth weight of baby and most of Eclampsia mothers had low birth weight and preterm delivery having p value 0.04 as significant.<sup>1</sup> Our study also states that cesarean section is more common mode of delivery among PIH mothers (62.9%) and PIH associated complications leads to increase NICU admission. In our study 74% mothers were treated with single antihypertensive drug like tab labetalol and 12.3% were treated with multiple drug combination.

## CONCLUSION

PIH is a common medical disorder associated with pregnancy. Incidence of PIH is found to be more in multigravida and age group of 21-25 years. Timely intervention in regular ANC checkup , early diagnosis to detect condition which can be managed with proper health education and nutrition advice, this will further reduce the severity of PIH and help in decreasing maternal and perinatal complications. The basic management objectives should be control of HTN and prevention of complications and intrauterine monitoring facilitating the birth of an infant who subsequently thrives and complete restoration of health to the mother. PIH associated complications is most common cause of maternal mortality. And there was no maternal mortality in our study, early diagnosis and prompt treatment will reduce maternal mortality.

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