

## Comparison of maternal and perinatal outcomes of pregnancy induced hypertension and preeclampsia

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### Abstract

**Introduction:** Hypertension is one of the common medical complications of pregnancy. It contributes significantly to maternal and perinatal morbidity and mortality. The present study was done to compare the maternal and perinatal outcome in pregnancy induced hypertension and preeclampsia.

**Method(s):** The present study is retrospective study of 100 cases of PIH and PE from March 2016 to June 2016 in department of obstetrics and gynecology in SMS Medical College, Jaipur, Rajasthan. The outcome of PIH and PE was analyzed by standard statistical methods. Appropriate test of significance was applied (t-test), Chi Square test with  $p < 0.05$  as level of significance.

**Result(s):** Mean blood pressure, maternal & foetal complications were noted more in pre eclampsia group. In our study no difference in parity or rate of caesarian delivery noted in either group. Mean gestational age was lower in pre eclampsia group.

**Conclusion(s):** Preeclampsia patients were associated with poor paternal and foetal outcome in comparison with pregnancy induced hypertension.

**Keywords:** Pregnancy induced Hypertension (PIH), Preeclampsia (PE), Maternal and Perinatal outcome, Blood Pressure (BP)

### Introduction

Hypertension is one of the common medical complications of pregnancy. It contributes significantly to maternal and perinatal morbidity and mortality. The underlying basic pathology is endothelial dysfunction and intense vasospasm, affecting almost all the vessels, particularly those of uterus, kidney, placental bed and brain. The basic underlying pathology remains as endothelial dysfunction and vasospasm.<sup>1</sup> The identification and timely intervention of this

clinical entity play a significant role in the maternal and perinatal outcome of pregnancy.

Hypertensive disorder complicate 5 – 10 % of all pregnancies and they are one member of deadly triad- along with haemorrhage and infection- that contribute greatly to maternal morbidity and mortality.<sup>2</sup> The main objective when managing hypertensive disorders is to reduce maternal mortality and morbidity rates. This study emphasizes that there is increased risk of adverse outcomes for

maternal and perinatal outcome in patient with preeclampsia.

### **Materials and methods**

This is a hospital based retrospective, comparative study. Total of 100 patient's records were analysed.

#### **Sample size**

n1=60; for patients with pregnancy induced hypertension.

n2=40; for patients with preeclampsia.

The outcome measures were maternal complications like HELLP/partial HELLP syndrome, abruptio placenta, DIC, acute kidney injury, intracerebral haemorrhage, pulmonary oedema and perinatal complications like preterm births, still birth, meconium aspiration. Data is collected from records of patients admitted to the department of obstetrics and gynaecology in a tertiary care teaching hospital.

#### **Inclusion criteria:**

All pregnant women admitted in the hospital and diagnosed as pregnancy induced hypertension and preeclampsia.

#### **Exclusion criteria:**

- Eclamptic patients
- Hypertension due to other causes like renal disorders, adrenal disorders

#### **Method of study**

Pregnant women admitted to the department of obstetrics and gynaecology, in the tertiary care hospital, were categorized into two groups namely pregnancy induced hypertension and preeclampsia.

Preeclampsia is characterized by development of hypertension to the extent of 140/90 mm Hg or more with proteinuria (Urinary excretion of  $\geq 0.3$  g protein/24 hours) after the 20<sup>th</sup> week in a previously normotensive and nonproteinuric woman.

Pregnancy induced hypertension is characterized by development of hypertension to the extent of 140/90 mm Hg without proteinuria after the 20<sup>th</sup> week in a previously normotensive woman.

Following investigation were analysed: Hb, Complete blood count, Liver Function Test, Renal Function Test, Ultrasound Scan. Maternal and perinatal outcome were tabulated and analysed.

#### **Data analysis**

Statistical comparison of the two groups was carried out using Pearson's Chi square test and student's t test. A 'p' value of  $<0.05$  was considered statistically significant.

#### **Results**

The mean age of women with pregnancy induced hypertension was 24.9 years whereas those with preeclampsia was 24.12 years ( $p>0.05$ ).

The mean systolic BP of women with pregnancy induced hypertension was 157.34 mmHg whereas those with preeclampsia was 164 mmHg ( $p<0.05$ ).

The mean diastolic BP of women with pregnancy induced hypertension was 101.5 mmHg whereas those with preeclampsia was 107.5 mmHg ( $p<0.05$ ).

The mean gestational age at delivery of women with pregnancy induced hypertension was 36.28 weeks whereas those with preeclampsia was 35.75 weeks ( $p<0.05$ ).

Caeserian delivery rate was with pregnancy induced hypertension was 66.66 % whereas those with preeclampsia was 77.5 % ( $p>0.05$ ).

In Maternal complications abruptio placenta was significant more ( $p<0.05$ ) in preeclampsia group compared to pregnancy induced hypertension group.

In perinatal outcome, preterm delivey, still birth and meconeum aspiration all were significantly more ( $p<0.05$ ) in pre eclampsia group compared to pregnancy induced hypertension group.

**Table 1: Comparison of maternal baseline data.**

Parameter	PIH (n=60)	Preeclampsia (n=40)	P value
Maternal age in years	24.9±4.132	24.12±2.928	.307
Systolic BP (mmHg)	157.34±14.48	164±12.77	.020
Diastolic BP (mmHg)	101.5±12.05	107.5±9.541	.010
Para	.667±1.02	0.3±.8228	.061
Gestational age at delivery	36.28±2.731	34.75±3.998	.025
Caesarean section (%)	66.66 %	77.5 %	.345
Maternal complications	3	10	.009

**Table 2: Comparing Maternal Health.**

Parameter	PIH (n=60)	Preeclampsia (n=40)	P value
Help, partial help	1	3	.206
Abruption placenta	2	7	.009
Dic	Nil	Nil	-
Acute renal failure	Nil	Nil	-
Pulmonary edema	Nil	Nil	-
No complication	57	30	.009

**Table 3: Comparing Mode of Delivery.**

Parameter	PIH (n=60)	Preeclampsia (n=40)	P value
Vagina delivery	20	9	.345
Caesarian section	40	31	

**Table 4: Comparing Perinatal Outcome.**

Parameter	PIH (n=60)	Preeclampsia (n=40)	P value
Preterm	18	24	.006
Meconium aspiration	1	7	.013
Still birth	1	9	.002

## Discussion

A prospective study conducted by Jagannath Pairu<sup>3</sup> et al also found that maternal complications and mean blood pressure were significantly higher in preeclampsia group as compared to pregnancy induced hypertension. That study also reported that incidence of perinatal complications were higher with preeclampsia as compared to those with pregnancy induced hypertension. Ching-Ming Liu<sup>4</sup> et al not found difference in maternal age, parity and placental abruption in both groups ( $p > 0.05$ ). Mean systolic and diastolic blood pressure, neonatal death and iudf were significantly more ( $p < 0.05$ ) with preeclampsia group as

compared to those with pregnancy induced hypertension .

## Conclusion

The study shows that maternal and perinatal outcome is poor in the group with proteinuria (preeclampsia) as compared to that without proteinuria (pregnancy induced hypertension). The presence of proteinuria is an important predictor for adverse maternal and perinatal outcome.

## References

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