

Article

# Assessment of cases of pregnancy induced hypertension- A clinical study

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**Abstract: Aim:** To assess cases of pregnancy induced hypertension.

**Materials & Methods:** Our study included 74 cases of pregnancy-induced hypertension. Parameters such as age, marital status, education, parity, etc., were recorded.

**Results:** Age group (years) <20 had 30%, 20-24 had 45%, 25-29 had 16%, 30-34 had 5% and >35 had 4% cases. Education level was illiterate in 40% and literate in 60%, and marital status was married in 58%, single in 26% and divorced in 16%, parity was 0 in 24%, 1-2 in 46% and >2 in 30%, gravida was primi in 40% and multi in 60%, previous PIH was seen in 24% patients. Family history of DM was observed in 25%, family history of PIH in 18%, family history of hypertension was seen in 10%, history of asthma was seen among in 8% and history of kidney disease 30% patients. The difference was significant ( $P < 0.05$ ).

**Conclusion:** Common risk factors of pregnancy induced hypertension was family history history of asthma, hypertension, family history of PIH, family history of DM, history of kidney disease.

**Keywords:** Pregnancy induced hypertension; Diabetes; Kidney disease.

## 1. Introduction

A pregnant woman having blood pressure 140/90 mmHg or more than this on repeated measurements is regarded as hypertensive [1]. It is also called a hypertensive disorder of pregnancy. It mainly comprised of pregnancy-induced hypertension (PIH), pre-eclampsia and eclampsia, gestational hypertension, and chronic hypertension [2]. Worldwide, this condition is affecting many women. It has become a public health problem. It is linked with higher maternal mortality, prenatal mortality, and preterm birth. Those women who encounter hypertension during pregnancy tend to have high perinatal death as compared to those not having it [3].

The pregnant female with hypertension has greater chances of cardiac failure, kidney failure, and stroke increase in pregnant females. In addition, the fetus encounters various complications such as abruptio placentae, pre- term birth, growth restriction, hypoxia, neo-natal death, and still birth [4]. The prevalence of hypertensive disorder of pregnancy is about 5–10% [5]. The incidence of pre-eclampsia is about 1.8%-16.7% in developing countries [6,7]. Preeclampsia induces both mother and fetus at risk. It is a maternal disorder. The primary treatment is early detection and managed delivery to minimize maternal and fetal risks. If the pregnancy is at term, the decision is easy: the baby should be delivered. The present study attempts to assess pregnancy-induced hypertension cases.

## 2. Methodology

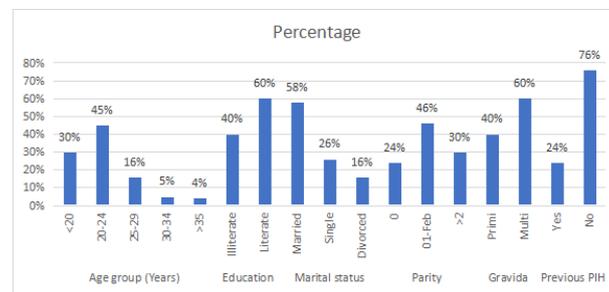
A total of seventy- four (74) pregnancy-induced hypertension cases were included in the study. Females having gestational age > 28 weeks were included, whereas critically ill females and those with known chronic hypertension were excluded. The demographic profile of each patient was recorded. Blood pressure was measured using mercury sphygmomanometer apparatus with females seated in the upright and supine position in all females. In addition, parameters such as age, marital status, education, parity, etc., were recorded. The results thus found were determined statistically using Mann Whitney U test. The level of significance was significant if the p-value was below 0.05.

### 3. Results

Age group (years) <20 had 30%, 20-24 had 45%, 25-29 had 16%, 30-34 had 5% and >35 had 4% cases. Education level was illiterate in 40% and literate in 60%, marital status was married in 58%, single in 26% and divorced in 16%, parity was 0 in 24%, 1-2 in 46% and >2 in 30%, gravida was primi in 40% and multi in 60%, previous PIH was seen in 24% patients. A significant difference was observed ( $P < 0.05$ ) (Table 1, Figure 1).

**Table 1.** Parameters recorded in patients

Parameters	Variables	Percentage	P value
Age group (Years)	<20	30%	<0.05
	20-24	45%	
	25-29	16%	
	30-34	5%	
	>35	4%	
Education	Illiterate	40%	<0.05
	Literate	60%	
Marital status	Married	58%	<0.05
	Single	26%	
	Divorced	16%	
Parity	0	24%	<0.05
	1-2	46%	
	>2	30%	
Gravida	Primi	40%	<0.05
	Multi	60%	
Previous PIH	Yes	24%	<0.05
	No	76%	



**Figure 1.** Parameters recorded in patients

Family history of DM was observed in 25%, family history of PIH in 18%, family history of hypertension was seen in 10%, history of asthma was seen among in 8% and history of kidney disease in 30% patients. The difference was significant ( $P < 0.05$ ) (Table 2, Figure 2).

**Table 2.** Evaluation of risk factors

Parameters	Variables	Percentage	P value
Family history of diabetes	Yes	25%	<0.05
	No	75%	
Family history of PIH	Yes	18%	<0.05
	No	72%	
Family history of hypertension	Yes	10%	<0.05
	No	90%	
History of asthma	Yes	8%	<0.05
	No	92%	
History of kidney disease	Yes	30%	<0.05
	No	70%	

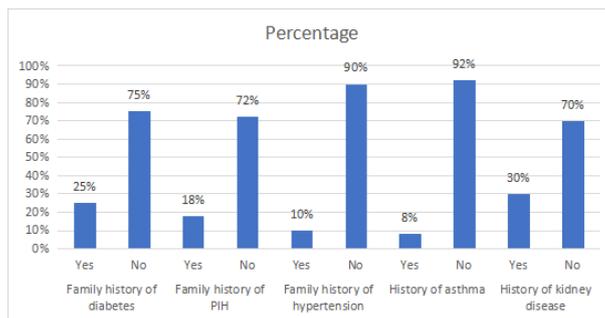


Figure 2. Evaluation of risk factors

#### 4. Discussion

Pre-eclampsia and eclampsia are the primary reason for maternal and neonatal mortality [8]. Late pregnancy with evidence of high blood pressure with proteinuria and/or edema helps in the establishment of disorder [9,10]. World Health Organization (WHO) calculates that maternal mortality due to complications of pregnancy-induced hypertension is seen in 1 in every 7 minutes. Pregnancy hypertensive disorder leads to severe perinatal and maternal outcome [11,12]. The ESC recommends that gestational hypertension be sorted out within 42 days postpartum, which is the puerperal period. Pre-existing hypertension persists beyond this period; many researchers favor the idea that pregnancy hypertension can be regarded as termed chronic hypertension if it continues beyond 12 weeks after delivery [13]. The present study was attempted to assess cases of pregnancy-induced hypertension.

In present study, age group (years) <20 had 30%, 20-24 had 45%, 25-29 had 16%, 30-34 had 5% and >35 had 4% cases. Education level was illiterate in 40% and literate in 60%, and marital status was married in 58%, single in 26% and divorced in 16%, parity was 0 in 24%, 1-2 in 46% and >2 in 30%, gravida was primi in 40% and multi in 60%, previous PIH was seen in 24% patients. Berhe *et al.*, [14] in their study included 17 studies having a total of 258,602 pregnant women. The study conducted in Ethiopia found that the prevalence of hypertensive disorders of pregnancy was 6.07%. The study showed a higher prevalence of hypertensive disorders of pregnancy in Southern Nations, Nationalities, and Peoples' Region, 10.13% and reduction in the rate of HDP from the 1990s to 2010s, 8.54% reducing to 5.71% respectively. The prevalence of pregnancy-induced hypertension was found to be 6.29, and preeclampsia/eclampsia was 5.47. Pregnant women over 35 years were more susceptible to hypertensive disorders of pregnancy. The result showed no statistically significant difference between HDP and younger maternal age. The number of pregnancy and hypertensive disorders of pregnancy did not correlate.

We observed that family history of DM was observed in 25%, family history of PIH in 18%, family history of hypertension was seen in 10%, history of asthma was seen among in 8% and history of kidney disease in 30% patients. Gudeta *et al.*, [15] found that pregnancy-induced hypertension was seen among 33 (7.9%) pregnant women. It showed that 5 (15.2%) found to have gestational hypertension, mild preeclampsia was seen among 12 (36.4%), severe preeclampsia in 15 (45.5%) and eclampsia in 1 (3%). Positive family history of pregnancy-induced hypertension, kidney diseases with a history of asthma, and gestational age were predictors of pregnancy-induced hypertension.

In the previous period, treatment of these females has involved bed rest in the hospital for the duration of pregnancy with the trust that such treatment lessens the occurrence of evolution to severe disease and permits quick interference in case of abrupt progression to abruptio placentae, eclampsia, or a hypertensive crisis. Nevertheless, these complications are highly infrequent in women with mild hypertension or mild preeclampsia and absent symptoms [16].

Kolovou *et al.*, [17] conducted a meta-analysis found a significant association of hypertensive disorders of pregnancy with advancing age. Females between the ages of 20–34 years had 1.64 times fewer chances of HDP than those above 35 years of age. In addition, it was found that raised lipid profile, high-density lipid cholesterol (HDL), risk of vascular damage were determinants of increasing risk of HDP in older mothers compared to younger women.

## 5. Conclusion

Common risk factors of pregnancy induced hypertension was family history history of asthma, hypertension, family history of PIH, family history of DM, history of kidney disease.

**Author Contributions:** All authors contributed equally to the writing of this paper. All authors read and approved the final manuscript.

**Conflicts of Interest:** "The authors declare no conflict of interest."

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