

# A Prospective Study of Hypertensive Disorders Complicating Pregnancy Admitted in Labour Room in Al Ameen Medical College and Hospital Vijayapura

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**Abstract:** *Pregnancy induced hypertension is one of the major causes of fetomaternal morbidity and mortality in pregnancy. The exact 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. The study aimed to find out the incidence rate, high - risk factors, and maternal and perinatal outcomes associated with the hypertensive disorder. A total of 110 antenatal women with hypertension and eclampsia admitted to the labour room. The incidence rate of hypertensive disorders was found to be 9.2% (n=110). The maximum number (45.45%, n=50) of patients were aged between 21 to 25 years followed by 18 to 20 years (35.45%, n=39). The majority of the patients (57.3%, n=63) were primigravida. The majority of women had preeclampsia (66.40%, n=73) followed by gestational hypertension (18.19%, n=20). Maternal complications were seen in 52.72% (n=58) of mothers. A significant association was observed in maternal complications and hypertensive disorder (P<0.001). In the total of n=46 (41.81%) cases the neonatal outcomes were abnormal. A significant association was observed in hypertension and neonatal outcomes (P<0.05). The hypertensive disorders of pregnancy is most common in young age primigravida women. Hypertensive disorders of pregnancy were associated with maternal complications and neonatal adverse outcomes.*

**Keywords:** Pregnancy, fetal outcome, Pregnancy induced hypertension, Hypertensive disorders of pregnancy, eclampsia, HELLP syndrome, maternal complications

## 1. Introduction

Worldwide around 10% of all pregnant women are affected by hypertensive disorders of pregnancy (HDPs), which are a significant contributor to maternal and perinatal death and morbidity. [1] Nearly 10% of all maternal deaths in Asia and Africa are linked to hypertensive disorders of pregnancy. Predicting the development of these complications should help with prompt treatments, such as heightened surveillance, treatment of symptoms, transfer to a higher care facility, and delivery when necessary, which could lower morbidity and mortality from HDPs. [2]

Elevated blood pressure during pregnancy is defined as a systolic reading of 140, a diastolic reading of 90 mmHg, or both. Increases in both systolic and diastolic blood pressure are critical in determining if a woman has pregnancy - induced hypertension. The term "pregnancy - induced hypertension" (PIH) refers to hypertension that develops in women with previously normal blood pressure after 20 weeks of pregnancy. [3] Pre - eclampsia, eclampsia, and gestational hypertension are the three main types of pregnancy - induced hypertension. Preeclampsia and eclampsia continue to pose a serious hazard to worldwide maternal and neonatal morbidity and death in both industrialized and developing nations. With a stated prevalence of 5–10%, hypertensive problems are the most typical medical consequences of pregnancy. [4]

Preeclampsia is primarily a leading cause in developing nations but is also a major cause of maternal and newborn mortality and morbidity globally. The disease is typically identified in the late stages of pregnancy when proteinuria, edema, and/or elevated blood pressure are present. [5, 6] According to the World Health Organization, at least one woman dies due to the complications of hypertension observed during pregnancy. Having a hypertension disease during pregnancy increases the chance of negative fetal, neonatal, and maternal outcomes. [4] Null parity, multiple pregnancies, gestational diabetes, fetal malformation, obesity, extreme maternal age (less than 20 or over 40 years), history of PIH in previous pregnancies, chronic diseases like renal disease, diabetes mellitus, cardiac disease, unrecognized chronic hypertension, positive family history of PIH showing genetic susceptibility, psychological stress, alcohol use, rheumatoid arthritis, extreme underweight, and other factors increase the risk of PIH. [7, 8] Understanding the prevalence, risk factors, and complications of each disease is necessary for its prevention. [4] Hence the present study was conducted to find out the incidence rate, high – risk factors, and maternal and perinatal outcomes associated with the hypertensive disorder.

## 2. Materials and Method

This prospective observational study was carried in the labor room in the department of obstetrics and gynecology at Al Ameen Medical College and Hospital Vijayapura after obtaining ethical approval. A total of 110 antenatal women

with hypertension and eclampsia admitted to the labour room. Whereas, antenatal women who were diagnosed with other causes of convulsions in pregnancy and antenatal women with normal BP were excluded from the study. A written informed consent was obtained before initiation of the study. Antenatal mothers with high BP recordings admitted to the labor room were observed. All relevant obstetric information such as socio - demographic variables, obstetric history, signs and symptoms at presentation, any associated comorbidities, any medication used, family history, and laboratory reports were noted. A suitable predesigned preprepared performa for data collection was prepared. The maternal outcomes in present pregnancy in form of mode of delivery - preterm of term, whether induced or spontaneous were studied. Neonatal outcomes in the form of prematurity, perinatal mortality, Low birth weight, and low APGAR were studied.

### 3. Statistical Analysis

Data were analyzed using the SPSS IBM V 20 software. Continuous variables were expressed in terms of mean±SD whereas, categorical variables were expressed in percentage and frequency. Chi - square test was used to find association between variables. P value <0.05 was considered statistically significant.

### 4. Results

During study period a total of n=1196 labour room admissions were recorded. The incidence rate of hypertensive disorders was found to be 9.2% (n=110). The maximum number (45.45%, n=50) of patients were aged between 21 to 25 years followed by 18 to 20 years (35.45%, n=39). The majority of the patients (57.3%, n=63) were primigravida (table 1).

**Table 1:** Distribution of subjects according to demographical variables

Variables	Sub categories	Frequency (n)	Percentage (%)
Age (years)	18 - 20	39	35.4
	21 - 25	50	45.4
	26 - 30	16	14.5
	31 - 35	3	2.7
	>35	2	1.8
Parity	Primi	63	57.3
	Multi	47	42.7

History of hypertension in previous pregnancy was found in 7.30% (n=8) of patients whereas, 1.81% (n=2) patients had family history of hypertension. In the study subjects the majority of women had preeclampsia (66.40%, n=73) followed by gestational hypertension (18.19%, n=20) (table 2).

**Table 2:** Distribution of subjects according to type of hypertension

Type of hypertension	Frequency (n)	Percentage (%)
Gestational	20	18.19
Preeclampsia	73	66.40
Eclampsia	15	13.60
Chronic hypertension	2	1.81
Total	110	100

Maternal complications were seen in 52.72% (n=58) of mothers (table 3). A significant association was observed in maternal complications and hypertensive disorder (P<0.001).

**Table 3:** Distribution of subjects according to maternal complications

Maternal complications	Frequency (n)	Percentage (%)
Preterm labor	34	30.91
Imminent eclampsia	9	8.20
Abruption	6	5.45
Pulmonary edema	3	2.72
HELLP	2	1.81
PPH	1	0.91
AKI	1	0.91
Others	2	1.81
Total	58	52.72

In the total of n=46 (41.81%) cases the neonatal outcomes were abnormal (table 4). A significant association was observed in hypertension and neonatal outcomes (P<0.05).

Neonatal outcomes	Frequency (n)	Percentage (%)
Low APGAR	20	18.18
IUD	9	8.18
Still birth	2	1.81
Low birthweight	14	12.72
Abortion	1	0.91
Total	46	41.81

### 5. Discussion

Hypertensive disorders in pregnancy can cause serious adverse maternal and neonatal outcomes. At the present study setting, there is paucity of data regarding such outcome. Burden of hypertensive disorders complicating pregnancy aids in better understanding to manage and/or prevent adverse outcomes thus, the present study was undertaken.

In this study, the incidence of hypertensive disorders was found to be 9.2%. Similarly various other studies reported the prevalence ranging from 7.2% to 10.64%. [9 - 11] Here, the maximum number of patients were aged between 21 to 25 years followed by 18 to 20 years. Similarly, Dhanalakshmi KR et al. reported high incidence of hypertensive disorders in pregnancy in the patients of 18 - 23 years of age group, which was reported to be high in 22 - 27 years according to Bhat A et al. [11, 12] Furthermore, Srinivasa S, and Awati M. reported that the incidence of hypertensive disorders in pregnancy more in primigravida. [13] Sengodan SS and Sreepathi N and Dhanalakshmi KR et al have noticed that the proportion of hypertensive disorders was noted to be higher in primigravida. [9, 11] Similarly, our study also following this trend.

In this study, the most common type of hypertensive disorder was preeclampsia followed by gestational hypertension, eclampsia, and chronic hypertension. In the study of Srinivasa S, and Awati M. the most common hypertensive disorder of pregnancy was gestational hypertension followed by preeclampsia. [13] Moreover, various other studies reported the incidence of eclampsia ranging from 12% to 40.6%. [14 - 16] The difference in the

results may be due to different study setting, study subjects, availability and accessibility of maternal services in the study areas.

In current study, 52.72% of mothers had complications including preterm labor, imminent eclampsia, abruption, pulmonary edema, HELLP, PPH, AKI, and other. Moreover, we found a significant association between maternal complications and hypertensive disorder ( $P < 0.001$ ). Biologically, it is said that the compromised cerebro, cardio and renal functions might be due to reduced placental perfusion in pregnancy induced hypertension due to abnormal cytotrophoblast invasion of spiral arterioles or abnormal placentation. Here, the most common abnormal neonatal outcome was low APGAR score followed by IUD, still birth, low birth weight, and abortion. These findings are comparable with previous reports. [11, 17 - 19]

The study suggested that the awareness regarding hypertensive disorder in pregnancy in pregnant women can facilitate better screening and early management of hypertension to prevent maternal and fetal adverse outcomes. The limitations of the study was the sample size was relatively small, generalization could better if large sample size included. A prospective case - control study could provide better insight.

## 6. Conclusion

At present study setting, the prevalence of hypertensive disorders was 9.2%. The hypertensive disorders of pregnancy is most common in young age primigravida women. Hypertensive disorders of pregnancy were associated with maternal complications and neonatal adverse outcomes. Hence, there should be provided with proper antenatal care, early detection of hypertensive disorders for better fetomaternal outcome.

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## Author Profile



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