

Evaluation of Pregnancy Outcomes in Women with Hypertension Disorders of Pregnancy

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ABSTRACT

Background and Aim: Globally, hypertension disorder is the most common disorder in pregnancy. It complicates 6–10% of pregnancies with a major contribution to the worldwide maternal mortality rate. The aim of the current study was to evaluate the pregnancy outcomes in women with Hypertension disorders.

Materials and Methods: This cross-sectional study was carried out on women with hypertension disorders enrolled in the department of Gynecology, Mardan Women Hospital, Sheikh Maltoon Town, Mardan and Family Health Centre, Peshawar from March 2021 to August 2021. Demographic details such as age, gestational age, parity, intrapartum, early postpartum complications such as perinatal outcomes and mode of delivery, and antepartum were recorded from each individual. Chi-square test was used for comparing the composite adverse outcomes such as preterm birth, postpartum hemorrhage, abrupt placenta, and mortality rate. SPSS version 20 was used for data analysis.

Results: Of the total 2357 pregnant women, about 146 (6.2%) women had hypertensive disorders of pregnancy. The mean age of 146 pregnant women was 29.45±4.67 years with an age range from 17 to 43 years. About 37 (25.3%) women had no perinatal and maternal complications. Out of 109 pregnant women, the prevalence of eclampsia, preeclampsia, and pregnancy-induced hypertension were 8 (7.3%), 44 (40.4%), and 57 (52.3%) respectively. Based on gestational age, preterm (24-36 weeks) and term (>37 weeks) were 35 (32.1%) and 74 (67.9%) respectively. Other maternal complications were Abrupt Placentae, Postpartum hemorrhage (PPH), Renal Failure., Pulmonary Edema, Disseminated intravascular coagulation (DIC), and Maternal Death.

Conclusion: Our study found hypertension disorders as a significant medical disorder in pregnant women. However, neonatal outcomes and pregnancy outcomes were significantly smooth in more than 50% of pregnant women.

Keywords: Hypertensive disorders of pregnancy, Pre-eclampsia, Eclampsia.

INTRODUCTION

Globally, hypertension disorder is the most common disorder in pregnancy. It complicates 6–10% of pregnancies with a major contribution to the worldwide maternal mortality rate [1]. Chronic hypertension, eclampsia, gestational hypertension, superimposed chronic hypertension, and preeclampsia is the different categories of hypertension disorders of pregnancy [2]. The mild to severe range of laboratory and clinical presentation induced by potential hypertension disorders of pregnancy causing menacing conditions for life. Though previous studies associated hypertension disorders for pregnancy with the risk of adverse outcomes on hypertension disorders of pregnancy-specific types [3]. Preeclampsia is a severe hypertension disorder of pregnancy that accounts for 9% to 26% of the mortality rate worldwide [4]. Defective placentation of preeclampsia with pathophysiological features was associated with immune imbalance, increased vascular resistance, activation of coagulation, aggregation of enhanced platelet, and endothelial dysfunction [5, 6]. The difference of early-onset (<34 weeks) severity and etiology from late one have (>34 weeks) has been investigated by many researchers [7, 8]. Others compared the early and late-onset preeclampsia in pregnancy outcomes [9]; however, few reported severe preeclampsia such as elevated liver enzymes, Hemolysis, and low platelet count (HELLP) syndrome with pregnancy outcomes [10].

In Pakistan, two studies investigated the frequency of hypertension disorders of pregnancy and found 15% and 5.34% prevalence respectively [11, 12]. The relatively benign conditions of PIH are gestational and chronic hypertension, but severe conditions comprise eclampsia and preeclampsia. Pre-eclampsia is characterized by maternal vascular dysfunction and placental, causing serious fetal and maternal complications such as severe hypertension, hemorrhage (abruption placenta and postpartum), seizures (eclampsia), kidneys and liver infections, stroke, stillbirth, and intrauterine fetal growth retardation. Regarding maternal mortality, hypertensive disorders of pregnancy account for 18% of

all maternal deaths worldwide [13]. Various studies focused on specific types of preeclampsia and outcomes which limited their investigation. Another study reported that after hemorrhage eclampsia is another common cause for maternal mortality. In developing countries, about 98% of mortality is caused by eclampsia [14]. About 9% of preterm births are caused by hypertension disorders of pregnancy [15]. The majority of preterm babies are delivered with maternal severe eclampsia and preeclampsia. A number of studies investigated the neonatal and maternal complications associated with hypertension disorders of pregnancy. Considering the lack of study and literature gap, the present study was carried out to assess the frequency of hypertension disorders of pregnancy.

MATERIALS AND METHODS

This cross-sectional study was carried out on women with hypertension disorders enrolled in the department of Gynecology, Mardan Women Hospital, Sheikh Maltoon Town, Mardan and Family Health Centre, Peshawar from March 2021 to August 2021. Demographic details such as age, gestational age, parity, intrapartum, early postpartum complications such as perinatal outcomes and mode of delivery, and antepartum were recorded from each individual. Chi-square test was used for comparing the composite adverse outcomes such as preterm birth, postpartum hemorrhage, abrupt placenta, and mortality rate. Pregnancy-induced hypertension was standardized as hypertension after a gestational age of 20 weeks with 140 mmHg of systolic blood pressure and 90 mmHg diastolic pressure measured on two different occasions without proteinuria and 4 hours apart from one another. Severe hypertensive disorders with preeclampsia and eclampsia were at 140 mmHg systolic and 90 mmHg of diastolic pressure and 300 mg/24 hours proteinuria. Severe preeclampsia was at 160/110 elevated blood pressure with 2 gm/dl while without any other cause in preeclampsia was referred to eclampsia.

Acute renal failure (urine o/p <25 mL/hour), cerebrovascular accident or stroke, pulmonary edema, adult intensive care unit admission, liver failure, delivery complications such as postpartum hemorrhage, placental abruption, and retained placenta, maternal mortality, coagulopathy, and hospital stay duration were the evaluated maternal complications. SPSS version 20 was used for data analysis. Informed consent and ethical approval were taken from each individual and ethical committee of the respective institute. Data like demographic details, laboratory and clinical findings, neonate outcomes, and each patient's medical record were noted on specially designed proforma.

RESULTS

Of the total 2357 pregnant women, about 146 (6.2%) women had hypertensive disorders of pregnancy. The mean age of 146 pregnant women was 29.45±4.67 years with an age range from 17 to 43 years. About 37 (25.3%) women had no perinatal and maternal complications. Based on gestational age, preterm (24-36 weeks) and term (>37 weeks) were 35 (32.1%) and 74 (67.9%) respectively. Demographic details are shown in Table -1. Other maternal complications were Abruptio Placentae, Postpartum hemorrhage (PPH), Renal Failure., Pulmonary Edema, Disseminated intravascular coagulation (DIC), and Maternal Death. Figure-1 demonstrates the age wise distribution of 109 women of hypertensive disorders of pregnancy. Out of 109 pregnant women, the prevalence of eclampsia, preeclampsia, and pregnancy-induced hypertension were 8 (7.3%), 44 (40.4%), and 57 (52.3%) respectively as shown in Table/Figure-2.

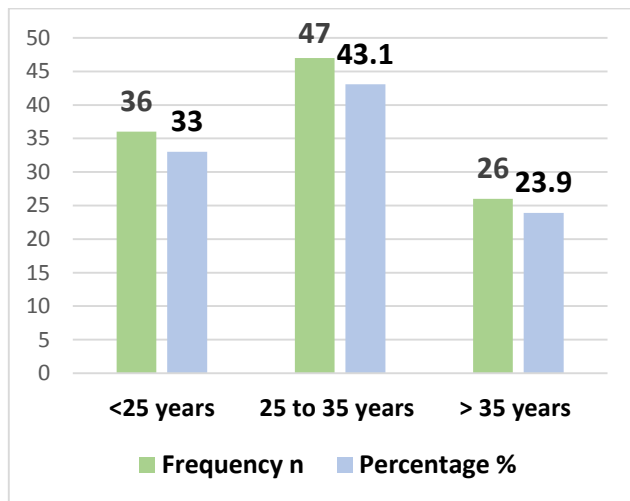


Figure-1. Age wise distribution of 109 pregnant women

Table-1. Demographic details of 109 pregnant women with HDP

Parameters	Frequency n	Percentage %
Gestational Age (Weeks)		
Preterm (24-36 weeks)	35	32.1
Term (>37 weeks)	74	67.9
Parity		
Primigravida	31	28.4
Para 1- 4	35	32.1
Para > 5	43	39.5

Table-2. Frequency of hypertensive disorders among 109 pregnant women

Hypertensive Disorders	Frequency n	Percentage %
Eclampsia	8	7.3
Preeclampsia	44	40.4
Pregnancy Induced Hypertension	57	52.3
Total	109	100

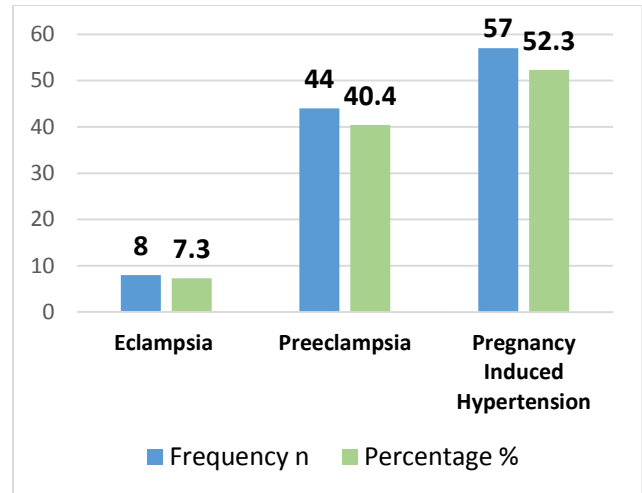


Figure-2. Frequency of hypertensive disorders among 109 pregnant women

Abruptio Placentae, PPH, Renal Failure, Pulmonary Edema, DIC, HELLP Syndrome, and Maternal Death were the maternal complications among 109 pregnant women while 37 had no complication as shown in Table 3.

Table-3. Prevalence of Maternal complications in 146 pregnant women

Maternal Complications	Frequency n	Percentage %
Abruptio Placentae	7	6.4
HELLP Syndrome	9	8.3
PPH	5	4.6
DIC	4	3.7
Renal Failure	3	2.8
Pulmonary Edema	4	3.7
Intrauterine Death	10	9.2
No Complications	37	25.34

DISCUSSION

Adverse perinatal and maternal outcomes of hypertensive disorders of pregnancy are still a major challenge for the health care system, especially in developing countries. The prevalence of hypertensive disorders of pregnancy varies depending on socioeconomic status and racial differences. Other significant factors are age and parity like demographic parameters. One study reported a 1.5% to 7.5% prevalence of hypertensive disorders of pregnancy [16]. The present study found the prevalence of hypertensive disorders of pregnancy 6.2% which is slightly higher than 5.34% [17] but lower than 15% [18] reported in two different studies. Premature delivery, insufficient placental hypoxemia, and fetal growth restriction are all connected with high perinatal morbidity and mortality. On the maternal side, mortality and morbidity improved, and the frequency of cerebrovascular and cardio events, as well as long-term complications, have been reported. The majority of complications are linked to severe preeclampsia [19]. Furthermore, a previous study reported that chronic hypertension was linked to an increased risk of preeclampsia, low birth weight, preterm birth, neonatal intensive care unit admission, cesarean delivery, and perinatal mortality [20].

The disease severity is relevant to maternal complications. Conversely, prematurity and insufficient placenta are significantly associated with periodic events. Preterm delivery is caused by fetal distress and severe hypertension which leads to termination of therapeutic pregnancy. Maternal and fetal risk increases with delivery delays in uncontrolled hypertension circumstances. Intrauterine growth restriction along with preterm labor are fetal outcomes that had a significant association with hypertension in pregnancy treatment [21].

The severe complications of pregnancy-induced hypertension superimposed by preeclampsia lead to complicated

eclampsia. A previous study reported the prevalence of PIH history, preeclampsia, and eclampsia were 21.4%, 1.2%, and 2.4% respectively [22]. In our study, the majority of pregnant women had no previous hypertensive disorder or pregnancy history. In the present study, about 52.3% had PIH, 40.4% preeclampsia, and 7.3% suffered eclampsia. Another study reported prevalence of preeclampsia 50.2% and different incidence of gestational hypertension 12.5%, and 35.7% eclampsia [23]. The prevalence of eclampsia was 9.5% reported in a study similar to our study finding [24]. Likewise, the prevalence of hypertensive disorder of pregnancy was 28.6% primigravida. Another major risk for hypertensive disorder is nulliparity as reported in previous studies [25, 26]. Our study reported that hypertensive disorders of pregnancy, perinatal and maternal mortality are strongly associated with nulliparity.

Neonatal mortality is caused by low birth weight comes from hypertensive disorders of pregnancy perinatal complications such as intrauterine growth restriction and preterm birth in certain cases. Severe pre-eclampsia results in stillbirth cases in women. About 35 (32.1%) were preterm deliveries in the present study. Our study results matched another study's findings regarding pregnancy hypertension [27]. The majority of women with hypertensive disorders of frequency delivered childbirth through vaginal delivery as reported by another study [28].

Besides hypertension, preeclampsia in proteinuria in cases was encountered with frequent clinical findings as reported in a previous study according to which eclampsia patients had 8% to 10% proteinuria without hypertension. Additionally, new-onset proteinuria developed preeclampsia in more than 50% of women within three weeks [29]. For both hypertension and proteinuria were introduced separately and had several different outcomes. Stroke is the major threat of hypertension associated with maternal and neonatal risk [30].

CONCLUSION

Our study found hypertension disorders as a significant medical disorder in pregnant women. However, neonatal outcomes and pregnancy outcomes were significantly smooth in more than 50% of pregnant women.

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