

Pregnancy Induced Hypertension among Pregnant Women Delivering in a Tertiary Care Centre

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ABSTRACT

Background: Pregnancy-induced hypertension (PIH) is the main cause of maternal & perinatal mortality and can also lead to long-term health problems. It complicates 10% of all pregnancies globally, with pre-eclampsia & eclampsia being the leading causes of maternal & perinatal mortality.

Objective: To find the frequency of pregnancy induced hypertension among pregnant women Delivering in a Tertiary Care Hospital.

Study Design: Descriptive Cross sectional

Methodology: This study was conducted in the Obstetrics and Gynecology Department in Services Hospital, Lahore. Patients present with age 30 to 50 years were included. Preeclampsia was defined as "systolic blood pressure above 140 mmHg and/or diastolic pressure >90mmHg measured at least two times with 4 hours' interval and proteinuria \geq 300mg/day was deemed as preeclampsia and detailed history were given. Total 78 females meeting the selection criteria for the study was included. Prior to birth, pregnant women were interviewed face to face in a different corner of the prenatal ward to collect data on socio-demographic and obstetric factors using a questionnaire.

Results: The mean age of the patients with pregnancy induced hypertension was found to be 28.39 ± 4.58 . The prevalence of pregnancy induced hypertension was found to be 78 (8.66%) representing 56 (71.79%), 13 (16.6%) and 7 (8.97%) as gestational hypertension, preeclampsia and eclampsia.

Conclusion: The prevalence of PIH was high than compared to that of other studies. Gestational Hypertension and Pre-eclampsia was the most common symptoms in PIH.

Keywords: Pregnancy, gestation, female, hypertension

INTRODUCTION

Pregnancy-induced hypertension (PIH) is a primary cause of maternal and perinatal mortality, as well as chronic hypertension, renal failure, and nervous system diseases^{1,2}. Almost 10-15% of maternal deaths in low & middle- income countries are associated with PIH^{3,4}.

Pre-eclampsia and eclampsia are the major causes of maternal and newborn mortality in the world, affecting 10% of all pregnancies^{5,6}. It occurs in 5% to 7% of all pregnancies. The main signs & symptoms are hypertension and proteinuria⁷.

Pre-eclampsia with convulsions not caused by another neurologic disease is referred to as eclampsia.

In Nepal, maternal mortality is strongly associated with the degree of hypertension, with eclampsia accounting for 22% of all maternal deaths⁸, further leads to the frequency of induced labor, restriction for fetal growth, admission to neonatal intensive care unit (NICU) is uncommon, and those with a previous history of PIH have a higher risk⁹. According to a 2015 survey, more than half of women (60.49%) are unaware about hypertension. The frequency of eclampsia is 13.58% in this study regarding PIH. Hypertensive diseases complicate pregnancy, resulting in poor maternal and perinatal outcomes¹⁰.

In Pakistan, there are extremely few studies on PIH and its outcomes. Thus, this study aimed to find the frequency of PIH among pregnant women delivering at a tertiary care hospital.

MATERIAL AND METHODS

This Descriptive cross sectional study was conducted from 15-06-2020 to 15-01-2021 in the Obstetrics and Gynecology Department in Services Hospital, Lahore. Patients gave their informed written consent. Patients present with age 30 to 50 years were included. Preeclampsia was defined as "systolic blood pressure above 140 mmHg and/or diastolic pressure >90mmHg measured at least two times with 4 hours' interval and proteinuria \geq 300mg/day was deemed as preeclampsia and detailed history were given. Females

with chronic hypertension & renal disease, heart disease, diabetes mellitus and incomplete data were excluded.

A total of 500 females who met the study's requirements were included. Each pregnant woman with PIH hospitalized for delivery gave verbal informed consent prior to data collection. Prior to birth, pregnant women were interviewed face to face in a different corner of the prenatal ward to collect data on socio-demographic and obstetric factors using a questionnaire. Data on maternal and fetal outcomes were also gathered from the patient file.

The cases and their types (Gestational hypertension, Preeclampsia, and Eclampsia) were diagnosed based on the patient's history, physical examination, and disturbed PIH profile, followed by medical diagnosis by Obstetrics/ Gynecology doctors.

Data was entered and analyzed in SPSS V25. Age was presented as mean \pm SD. Gravida, history of hypertension, Delivery types, LSCS and neonatal mortality were presented as frequency & percentage according to gestational hypertension, Preeclampsia and eclampsia groups.

RESULTS

Out of 500 females studied, the frequency of pregnancy induced hypertension was found to be 78 (15.6%) representing 56 (71.79%), 13 (16.6%) and 7 (8.97%) as gestational hypertension, preeclampsia & eclampsia respectively.

The average age of the patients with pregnancy induced hypertension was found to be 28.39 ± 4.58 . Most of the patients belong to 22-32 years of age group. Family history of hypertension present in 21(37.5%) females was in GTN group, 4(30.7%) was in preeclampsia group and 2(22.2%) were in Eclampsia group. Table 1.

Out of the patients with PIH, 23(29.4%) were experienced headache, followed by dizziness 14(17.9%) during their prenatal phases but very few 8(10.25%) was epigastric pain and only 1(1.28%) symptoms were with chest pain.

Table 1: Descriptive of Age groups, Primigravida and history of hypertension among groups

	GTN	Pre-eclampsia	Eclampsia
	56(71.7%)	13(16.6%)	9(11.5%)
Age Group			
<22	10(17.8%)	1(7.69%)	3(33.3%)
22-32	38(67.8%)	9(69.2%)	5(55.5%)
33-42	8(14.2%)	3(23.07%)	1(11.1%)
Gravida			
Primigravida	39(69.6%)	3(23.07%)	6(66.6%)
Multigravida	17(30.35%)	10(76.9%)	3(33.3%)
Family History of Hypertension			
Yes	21(37.5%)	4(30.7%)	2(22.2%)
No	35(62.5%)	9(69.23%)	7(77.7%)

Our study showed 46(58.9%) females with PIH had delivered by LSCS and 32(41.02%) had vaginal delivery. Out of 46 LSCS females, 21(67.7%)required emergency LSCS. The most common reason for LSCS seen in PIH was Meconium stain 27(87.09%) and high blood pressure 4(12.9%)in GTN patients, 6(66.6%) was high blood pressure and 3(33.3%) was for meconium stain in Preeclampsia and 5(83.3%) patients was in high blood pressure and only 1(16.6%) was meconium stain. Table 2.

Table 2: Frequency of delivery Details of PIH patients

	GTN	Pre-eclampsia	Eclampsia
	56	13	9
Delivery Type			
SVD	25(44.6%)	4(30.7%)	3(33.3%)
LSCS	31(55.3%)	9(69.23%)	6(66.6%)
Type of LSCS (46)			
Elective LSCS	10(32.2%)	2(22.2%)	1(16.6%)
Emergency LSCS	21(67.7%)	7(77.7%)	5(83.3%)
Reason for LSCS			
High Blood Pressure	4(12.9%)	6(66.6%)	5(83.3%)
Meconium Stain liquor/fetal distress	27(87.09%)	3(33.3%)	1(16.6%)

About fetal outcome before birth, commonly seen was IUGR 28 (50%) followed by Fetal Tachycardia 20(35.7%). Most commonly found fetal outcome after birth was shifted to ICU 35, followed by LBW 30, Prematurity 24.0. Only 2 neonatal deaths were seen in eclampsia case. Other fetal outcomes are presented in Table 3.

Table 3: Frequency of fetal Status among PIH patients

	GTN	Pre-eclampsia	Eclampsia
	56	13	9
Oligohydramnious	8(14.22%)	3(23.07%)	1(11.1%)
Fetal Tachycardia	20(35.7%)	1(7.6%)	2(22.2%)
IUGR	28(50%)	9(69.23%)	6(66.6%)
After birth			
Prematurity	13(23.2%)	7(53.8%)	4(44.4%)
Low Birth Weight	22(44.6%)	5(38.4%)	3(33.3%)
Meconium Aspiration	10(17.8%)	6(46.1%)	5(55.5%)
Admission to ICU	23(41.07%)	8(61.5%)	4(44.4%)
Neonatal Death	0	0	2(22.2%)

DISCUSSION

Pregnancy-induced hypertension (PIH) is a hypertension syndrome that might include proteinuria & edema, with the clinical manifestation usually occurring late in pregnancy and regressing after delivery of the conceptus¹¹. Premature birth, fetal growth retardation, abruption placentae, and fetal death are all common pregnancy problems¹².

In our study, the frequency of PIH was 15.6% which seems to be relatively higher than the finding from the similar study done in India & Ethiopia where it was 6.4% & 2.4%^{13,14}. Another study found that 7.9% of female accessing a delivery service was pregnancy-induced hypertension. Having family history of PIH, chronic kidney diseases and gestational hypertension were the main factor of pregnancy induced hypertension³. In this study, out

of PIH, 56(71.7%) had gestational hypertension, 112(13.2%) pre-eclampsia & 18(8.7%) had eclampsia. As compare to 2015 study, 71 (78.1%), 12.0 (13.2%) & 8.0(8.7%) as gestational hypertension, preeclampsia & eclampsia respectively¹³.

This study showed that, mostly patients belong to 22-32 years of age group. As compare to in one cross sectional study, 156 (61.5%) women who had PIH were of age group 21-30yrs¹³. In 2018, Nepal study showed that highest frequency (32.5%) in both age groups of 20-24yrs & 25-29yrs. Similar finding is seen in studies done by Singh, et al¹⁵.

Family history of hypertension present in 21(37.5%) females was in GTN group, 4(30.7%) was in preeclampsia group and 2(22.2%) were in Eclampsia group. Gestational hypertension 69.6% & eclampsia 66.6% were common in primigravida and preeclampsia 76.9% was common in multigravida. The findings were comparable to those of Thakur and Dangal, who found that primigravida had the highest prevalence of GTN and eclampsia, while preeclampsia was common in primigravida compared to succeeding gravidas⁸.

In our study, headache was found the main symptom in the females with gestational hypertension and pre-eclampsia 2015, or 2016 study headache was more common in pre-eclampsia and eclampsia^{15,16}.

In PIH, the common fetal complication after birth was LBW 30 (GTN 44.6%, pre-eclampsia 38.4% eclampsia 33.3% cases), followed by shifted to NICU 35, (26.4%) (GTN 41.07%, pre-eclampsia 61.5% and eclampsia 44.4%, cases), and the prematurity cases 24, (GTN 23.2%, Pre-eclampsia 53.8% and Eclampsia 44.4%, cases) that are similar to the results of other studies^{8,17}. Total 2(22.2%) neonatal death was found in our study among eclampsia cases. In other study, 12.5% had neonatal death that was the neonatal death among 91.0 PIH cases¹³.

CONCLUSION

The prevalence of PIH was high than compared to that of other studies. Most of the cases requiring surgeries & well equipped ICUs may be seen among PIH cases & further relative studies are necessary to confirm factors described here to be association with PIH.

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