Hypertensive Disorders of Pregnancy and Its Associated Fetomaternal Complications

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ABSTRACT

Objective — *To determine the frequency of hypertensive disorders of pregnancy (HDP) and their associated complications in terms of maternal and perinatal outcome.*

Study design — *Descriptive case series.*

Place & Duration of study — *Department of Obstetrics & Gynaecology at Baqai Medical University Hospital Karachi, from January 2017 to December 2018.*

Methodology — *Pregnant women diagnosed as hypertensive disorders of pregnancy were included. The data of all these women were collected to document demographic features like age, parity, booking status, gestational age, antepartum, intrapartum and early postpartum complications including mode of delivery and their perinatal outcomes. All these patients, booked as well as un-booked, of any parity, gestational age, including those who delivered in hospital were included. Patients with essential hypertension or chronic hypertension and all postpartum eclamptic patients were excluded.*

Results — *The frequency of HDP among pregnant women was 2.06% as it was found in 84 out of 4073 pregnant women. In 44 (52.3%) women no maternal and perinatal complication occurred. Pre-eclampsia was reported in 34 (40.4%) and eclampsia in 6 (7.1%) patients. Preterm deliveries were observed in 27 (32.1%) women. In 65 cases live births occurred, 11 (13%) babies died in neonatal period, and there were 8 (9.5%) intra uterine deaths (IUD).*

Conclusion — *Hypertensive disorders in pregnancy was found to be a significant medical disorder of pregnancy however in more than 50% women pregnancy went smoothly and neonatal outcome was also satisfactory.*

Key words — *Pre-eclampsia, Eclampsia, Intrauterine death, Hypertensive disorders of pregnancy, Intrauterine growth retardation.*

INTRODUCTION:

Hypertensive disorder of pregnancy are among the leading causes of maternal and perinatal deaths in developing countries, and many studies have been conducted on this subject.[1] Hypertensive disorders affects about 10% of all pregnancies around the world and are an important cause of maternal and perinatal morbidity and mortality.[1-3] In a study conducted in Pakistan the frequency of hypertensive disorders of pregnancy was reported as 15% while in other study it was found to be 5.34%.[4,5] PIH includes two relatively benign conditions (chronic and gestational hypertension) and the more severe condition of pre-eclampsia and eclampsia.

Pre-eclampsia complicates 3-5% of all pregnancies

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and is characterized by placental and maternal vascular dysfunction that may lead to serious maternal and fetal complications such as severe or uncontrolled hypertension, stroke, seizures (eclampsia), can affect vital maternal organs kidneys and liver, hemorrhage (abruption plecenta and postpartum), intrauterine fetal growth retardation and even maternal and fetal death.[6] Regarding maternal death, hypertensive disorders of pregnancy is estimated to be responsible for 18% of maternal deaths all over the world.[7]

A national study showed that HDP/eclampsia is the second most common cause of maternal death following haemorrhage.[8] Globally 98% of maternal deaths occur in developing countries. [9] HDP also accounts for about 25% of perinatal deaths in these low resource countries.[10] The overall incidence of small for gestational age (SGA) babies who are less than tenth centile for their appropriate gestation also increases. HDP accounts for 8-10% all pre-term births.[11,12] Most of the preterm babies are delivered by women suffering from severe pre-eclampsia and eclampsia.[13] So far most research has been done on the maternal and neonatal complications associated with hypertensive disorders of pregnancy. The objective of this study was to determine the maternal as well as perinatal complications associated with HDP in our setup.

METHODOLOGY:

This was a descriptive case series conducted between January 2017 to December 2018 in the Department of Obstetrics & Gynaecology at Baqai Medical University Hospital Karachi. Women suffering from hypertensive disorders of pregnancy were included. Patients with essential hypertension or chronic hypertension and all postpartum eclamptic patients were excluded.

The classification of hypertensive disorders of pregnancy was done according to National High Blood Pressure Education Program Working Group on High Blood Pressure in Pregnancy. PIH, defined as a new onset of hypertension after 20 weeks of gestation with systolic blood pressure level of = 140 mmHg and for diastolic blood pressure level of = 90 mmHg on two or more consecutive occasion = 4 hours apart without proteinuria with normotensive pre-pregnancy level, or a parallel group of severe hypertensive disorder with eclampsia and pre-eclampsia (characterized by systolic blood pressure level of = 140 mmHg and / or diastolic blood pressure level of = 90 mmHg on two or more consecutive occasions with proteinuria (= 300 mg / 24 hours after 20 weeks of gestation) severe pr-eclampsia is defined as markedly elevated blood pressure of = 160 / =110 with proteinuria of = 2gm/dl, while eclampsia is defined as generalize convulsions in women having pre eclampsia in the absence of any other cause.

All relevant information regarding demographic data, clinical findings, laboratory results and each patient's and neonatal outcome were collected on specially designed form. Informed consent was taken. Data were entered into SPSS program and analysed.

RESULTS:

Total number of deliveries during the study period was 4,073 and 84 cases had hypertensive disorders of pregnancy giving the frequency of 2.06%. Pregnancy induced hypertension cases were 44 (52.3%), of pre-eclampsia 34 (40.4%) and eclampsia 6 (7.1%). Out of 84 cases primigravidas were 24 (28.6%), multigravida 27 (32.1%) and grand multipara (>5 parity) 33 (39.3%). Demographic data is given in table I.

Preterm deliveries were seen in 27 (32.1%) while 64 (76.2%) women had normal vaginal deliveries. In 20 (23.8%) patients cesarean section was needed. There were 65 alive births, 11 (13%) neonatal deaths, and 8 (9.5%) IUD. Maternal complications were postpartum hemorrhage in 3 (3.5%) patients and HELLP syndrome in 6 (7.1%). These are given in table II.

DISCUSSION:

Hypertensive disorders of pregnancy remain a major health challenge because of the associated adverse maternal and perinatal outcomes especially in low resource countries. Overall incidence of hypertensive disorders of pregnancy varies in different population depending upon the race, and socioeconomic status. Demographic parameters such as age and parity are also the significant factors. The prevalence of hypertensive disorders of pregnancy ranges from 1.5 to 7.5%.[14] Moreover, some centers serve as a referral medical facility for an extended number of primary care units of the surrounding rural areas.[15] In this study the frequency of hypertensive disorders of pregnancy was 2.06% which is slightly less than that found in a study from a large tertiary center in Pakistan which reported a figure of 5.34%.[4] This is due to the exclusion women with chronic hypertension and postpartum eclampsia in our study.

Pregnancy induced hypertension may be complicated by superimposed pre-eclampsia which may get complicated by eclampsia. In patients who were diagnosed with either PIH, pre-eclampsia

Table I: Demographic Characteristics of Women with Hypertensive Disorders of Pregnancy (n=84)		
Parameter	**No. of Cases (n)**	**Percentage (%)**
Age in years		
< 20 Years	28	33.3%
21-35 Years	36	42.8%
> 35 Years	20	23.8%
Parity		
Primigravida	24	28.6%
Para 1- 4	27	32.1%
Para > 5	33	39.3%
Gestational Age		
Preterm (24 weeks – 36 weeks)	27	32.1%
Term (>37 weeks)	57	67.9%

Table I: Frequency Distribution and Maternal Complications due to Hypertensive Disorders (n=84)		
HDP	**No. of Cases (n)**	**Percentage (%)**
PIH	44	52.38%
Pre-eclampsia	34	40.47%
Eclampsia	6	7.1%
Maternal Complications		
Abruptio Placentae	4	4.7%
PPH	3	3.5%
Renal Failure	1	1.1%
Pulmonary Edema	2	2.3%
DIC	2	2.3%
HELLP Syndrome	6	7.1%
Maternal Death	0	--

or eclampsia. Only 18 (21.4%) had previous history of PIH, 1.2% had previous history of pre-eclampsia and 2 (2.4%) had previous history of eclampsia in previous pregnancies. Majority of the women in our study (n=63 -75%) did not have any previous history of hypertensive disorders of pregnancy.

In current study 52.3% women had PIH, 40.4% pre-eclampsia and 7.1% suffered from eclamptic fits. Our figures are in conformity with the study by Sharma et al in which 50.2% women were pre-eclamptic but does not match with the incidence of gestational hypertension (12.5%) and eclampsia (35.7%).[16] The frequency of eclampsia is more similar to that reported by Hannah and Nathan et al of 9.5%.[17] Similarly hypertensive disorders of pregnancy was 28.6% in primigravida. Nulliparity is a risk factor of hypertensive disorder in pregnancy as reported in different studies. [618,19] In our study multiparity was found more frequently associated with HDP and significant maternal and perinatal morbidity and mortality. Fortunately no maternal death was observed during this study but morbidity was frequently seen. However, no women with PIH or mild pre-eclampsia suffered any complications.

Perinatal complications of hypertensive disorders of pregnancy include preterm birth, intrauterine growth restriction leading to low birth weight that may result in neonatal deaths in some cases. Most of the still births were observed in women with severe pre-eclampsia. Preterm delivery was observed in 27 (32.1%) patients. Our results are comparable with another study carried out in a tertiary care hospital.[4] Although the rate of surgical intervention has been found to be high in hypertensive disorders of pregnancy, but mode of delivery in women with HDP in present study showed that majority delivered vaginally.[20] This is also reported in other study. [21]

CONCLUSIONS:

Majority of the women with HDP delivered vaginally and neonatal outcome was also satisfactory. No maternal death was reported in this series.

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Nikhat Ahsan: Drafting of manuscript, interpretation of data and data collection.
Farrukh Naheed: Study design, data analysis and data collection.
Farheen Shiekh: Data collection.

Conflict of Interest:
The authors declare that they have no conflict of interest.

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