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A PROSPECTIVE STUDY OF CASES OF PREGNANCY INDUCED HYPERTENSION AND MATERNAL AND PERINATAL OUTCOME AT TERTIARY CARE HOSPITAL

Dr Neha Singh*	3rd Year Resident Obstetrics And Gynaecology *Corresponding Author
Dr. Hemlata Jharbade	Professor, Obstetrics & Gynaecology
Dr Surabhi Porwal	Assistant Professor, Obstetrics & Gynaecology

ABSTRACT

Background: Pregnancy Induced hypertension continues to be rampant globally and is associated with high perinatal and maternal mortality and morbidity. It is still one of the most important and intriguing unsolved problems in obstetrics. Hypertensive disorders in pregnancy account for approximately 7 to 15% of all pregnancies and nearly 25% of antenatal ward admissions. The condition complicates about 10% of pregnancies and is responsible for 14% of maternal deaths, 15% of perinatal deaths, and 30% of maternal near misses worldwide.Hypertensive disorders in pregnancy (PIH) are a group of disorders that range from pre-existing chronic hypertension in the index pregnancy to complex multisystem disorders such as preeclampsia, which can lead to complications such as eclampsia, HELLP syndrome, acute renal failure, pulmonary edema, stroke, and left ventricular failure.Though not preventable, early detection and proper intervention can significantly reduce complications. This is achievable with Prenatal care at all levels.However, there is an unmet need in recognizing and managing PIH and its complications in low and middle-income countries due to pregnancy myths and misconceptions, transportation challenges, low socioeconomic status, and a lack of easy and expert antenatal care requiring a multidisciplinary approach, a lack of accurate prediction methods, and a scarcity of high dependency units (HDU).Early detection of a milder form of disease, corticosteroid administration, and careful timing of delivery can all help improve the outcome. In light of this, we designed and conceived the current study with the goal of studying the maternal and perinatal outcomes of Hypertensive Disorders of Pregnancy at a tertiary care hospital. Furthermore, data from antenatal females with PIH admitted for safe confinement were collected and classified into the following categories: GHTN, Preeclampsia, Chronic Hypertension, Chronic Hypertension superimposed with preeclampsia, and eclampsia. Finally, the method of delivery (vaginal/caesarean section) in each category of patients was examined. The study's findings will assist us in determining the scope of the problem in our area and estimating the fetal and maternal complications associated with it. **Methods:** All patients beyond 20 weeks of pregnancy with pregnancy induced hypertension admitted in department of Obstetrics and Gynaecology of MGM Medical College over a period of 18 months after approval from Institutional ethical committee was taken into consideration. The objective of the study was to analyze the cases of gestational hypertension, Chronic Hypertension,Chronic Hypertension superimposed with preeclampsia, pre-eclampsia and eclampsia and their maternal outcome in terms of mode of delivery and complications.Perinatal outcome in relation to neonatal complications was also studied. The frequency and percentage for socio-demographic variables, mode of delivery and complications were analyzed. **Results:** Pregnancy Induced Hypertension cases accounted for 415 cases were enrolled during study period;The most common PIH presentation was pre-eclampsia, followed by severe pre-eclampsia, gestational hypertension, antepartum eclampsia. Maternal morbidity and mortality were observed in 37.6% of the women and 3.6%, respectively in our study. Abruption, wound infection, and eclampsia were the most common complications, accounting for 11%, 9%, and 7.7% of all cases, respectively. 48.2% of babies were shifted to mother side, followed by 41.6% were shifted to SNCU, 7.9% were Intrauterine deaths and least 2.1% were Still birth respectively **Conclusions:** Though the incidence of pre-eclampsia and eclampsia is on the decline, still it remains the major contributor to poor maternal and fetal outcome.Regular antenatal check-ups, early diagnosis, prompt multidisciplinary treatment, optimum timing of delivery reduces the incidence of complications and the maternal mortality. Early referral and management of these cases at centers with advanced neonatal facilities will reduce the perinatal mortality.

KEYWORDS : Pregnancy Induced Hypertension, Gestational hypertension, Pre eclampsia, Eclampsia, morbidity, mortality, multidisciplinary approach

INTRODUCTION-

Pregnancy induced hypertension is a common and important medical problem. Any new onset hypertension (systolic 140 mmHg and/or diastolic 90 mmHg beyond 20 weeks) should be regarded as PIH, according to a revised statement from the International Society for the study of Hypertension in pregnancy (ISSHP) from 2014. It's crucial to document normal blood pressure before becoming pregnant or in the first trimester. Pregnancies that present with hypertension after 20 weeks of gestation and whose earlier status is unknown, however, should be treated as cases of PIH [1]. Worldwide, 5–10% of pregnancies are complicated by hypertensive disorders [2]. According to data from the National Eclampsia Registry, the prevalence of hypertensive disorders in India is found to be 10.08 percent (NER). Eclampsia is 1.9% prevalent among registry patients [3]. Preeclampsia, eclampsia, and incidence of hypertensive disorders in pregnancy are all on the rise globally, according to a World Health Organization (WHO) multi-country survey [4]. It contributes significantly to maternal and fetal morbidity and mortality. Although not preventable, early detection and prompt, appropriate intervention can greatly lessen the complications. Improvements in prenatal care at all levels and appropriate, timely management make this possible. The statistics above make it clear that maternal and fetal morbidity prevalence and complications have significantly decreased in developed countries. This is a result of excellent prenatal care. This hospital-based observational study's goals are to determine the scope of the issue and calculate the resulting maternal and fetal complications.

MATERIALS AND METHODS

This is a prospective observational study carried out in the department of Obstetrics and Gynaecology of MGM Medical College over a period of 18 months after approval from Institutional ethical committee. PIH was diagnosed when the systolic blood pressure was ≥140 mmHg and/or diastolic blood pressure ≥ 90 mmHg measured on two occasions i.e. 4-

6 hours apart and beyond 20 weeks of pregnancy (Includes all cases of mild and severe preeclampsia and eclampsia). Severe preeclampsia was considered when blood pressure was systolic ≥160 mmHg and diastolic ≥110 mmHg. Investigations and management was done according to SOP. All cases were evaluated with blood investigations like haemoglobin estimation, platelet count, liver function tests, renal function tests. Coagulation profile (PT, aPTT, INR) was evaluated in clinically suspected cases of abruption, HELLP syndrome, Disseminated Intravascular Coagulation (DIC) patients. Urine protein estimation was done by dipstick method. Obstetric ultrasound with doppler was performed in cases where decision to continue pregnancy for some period was decided. Admission Cardiotocography (CTG) was performed in all cases. All cases of severe hypertension were treated with intravenous labetolol preferably or oral labetolol/nifedipine. Any hypertension diastolic ≥100 mmHg was treated with oral labetolol/nifedipine to maintain blood pressure in normal range. All cases of eclampsia, imminent eclampsia (with features like severe headache, visual scotomata, nausea, vomiting, oliguria, epigastric pain) and severe hypertension were treated with magnesium sulphate by Pritchard's regime. Betamethasone 12 mg, 24 hours apart administered to all pregnancies less than 37 weeks if imminent delivery is not indicated. All cases beyond 37 weeks of gestation were planned for delivery. Preterm pregnancies were offered conservative management with the investigations mentioned above twice a week except in cases of eclampsia, imminent eclampsia, uncontrolled maternal hypertension despite anti-hypertensives, HELLP syndrome, placental abruption, absent or reverse end diastolic flow in Doppler velocimetry, non- reassuring CTG, still birth. Blood pressure monitoring was done four hourly for those on conservative management. Maternal complications studied were cases of HELLP syndrome, abruptio placentae, Post Partum Haemorrhage (PPH), neurological complications, Intensive Care Unit (ICU) admissions and maternal death. Perinatal outcome in terms of NICU admission and neonatal complications like RDS,HIE, septicemia and neonatal death were studied.A pre-structured proforma containing information about patient's age, obstetric history, examination, investigations performed were noted.

RESULTS:

The sociodemographic and obstetrical profiles of the patients under study are shown in Table 1.Table 1:

Table 1: Socio demographic and obstetrical profile of patients under study.

Particular	Sub-particular	Frequency	Percent
Age Group	18-20Years	54	13.0
	21-25Years	193	46.5
	26-30Years	137	33.0
	31-35Years	31	7.5
Locality	Rural	311	74.9
	Urban	104	25.1
Antenatal visits	Booked	307	74.0
	Unbooked	108	26.0
Gravida	Gravida 1	224	54.0
	Gravida 2& Gravida 3	171	41.2
	Gravida 4& Above	20	4.8
Parity	Primiparous	227	54.7
	Multiparous	188	45.3
Gestation Age	24-28Weeks	7	1.7
	28-32Weeks	20	4.8
	32-36Weeks	91	21.9
	36-40Weeks	225	54.2
	>40Weeks	72	17.3

Table -2 depicts the maternal outcome and complications of the study subjects.

TABLE – 2 MATERNAL OUTCOME AND COMPLICATIONS

Particular	Sub-particular	NUMBER	%
PIH	GHTN	70	16.8
	Pre-eclampsia	208	50
	Severe Pre-eclampsia	78	18.7
	Antepartum Eclampsia	32	7.7
	Chronic Hypertension	1	0.02
	Chronic Hypertension Superimposed With Preeclampsia	5	1.2
	Impending Eclampsia	21	5
MODE OF DELIVERY	Spontaneous Vaginal	150	36.1
	InducedVaginal	121	29.2
	C-Section	142	34.2
	Undelivered	2	0.5
MATERNAL COMPLICATION	Eclampsia	32	7.7%
	Abruption	46	11%
	HELLP	12	2.8%
	DIC	06	1.4%
	ARF	08	2%
	Wound Infection	38	9%
	Death	15	3.6%
POST-PARTUM HOSPITAL STAY IN DAYS	<7	250	60
	7-14	107	26
	15-28	42	10
	>28	16	4

Table- 3 FETAL OUTCOME

FETAL OUTCOME	NUMBER	%
SHIFTED TO MOTHER SIDE(HEALTHY)	199	48.2
SHIFTED TO SNCU	172	41.6
INTRAUTERINE FETAL DEATH	33	7.9
STILL BIRTH	9	2.1
TOTAL	413	100

DISCUSSION

Pregnancy Induced Hypertension affects both mother and neonate. It is one of the leading cause of maternal and fetal morbidity and mortality. 46% of the women in the study group were in the age group of 21 to 25 years, which correlates with the studies of Moodley[5] in which the mean age was 26 years. In studies done by Brown MA and Buddle ML[6], D.R.Hall[7] the mean age was 26 years. In our study mean age was 25 years. PIH is common in first pregnancy. More than half the women in our study were Nulliparous, 227 (54%). Brown MA and Buddle ML[6] said PIH is predominant in nulliparous. Only 66% of the women in this study group had risk factors, which includes nulliparity (54%), other risk factors (12%) includes history of preeclampsia in previous pregnancy, DM,Obesity, and family history of hypertension. In the study by D.R. Hall[7] 36% of the women had risk factors. Almost 307(74%) women in this study were booked either at our institution or outside. Adequate antenatal care has an important role in reducing the complications by early detection and appropriate management.Most of the women underwent termination of pregnancy at 36-40 weeks,54.2%.In the study by D.R.Hall[7]Gestational Age at the time of delivery was found to be 32-34 .Apgar was found to be improving with increasing gestational age. Fetal morbidity was found to be high at early gestational age. Though delivery is the ultimate cure for preeclampsia, fetal outcome should be taken into consideration in the absence of maternal complication.

Almost 34% of the women in our study were delivered by caesarean section. This rate is lower than that reported by Mashiloane and Moodley [5] and also of Hall et al where 81.5% were delivered by means of cesarean section33. Ultimate goal in the management would be the safety of the mother and second the delivery of a live infant who will not require prolonged neonatal care. In our study maternal morbidity and mortality was seen in 37.6%. and 3.6%

respectively. Abruption, wound infection ,eclampsia were highest accounting to 11%,9%, 7.7% respectively.Other complications were HELLP,DIC,AKI. In our study Maternal mortality was 3.6% .In study conducted by Manisha et al in New delhi in 2012 reported maternal mortality in 1.8% of cases .In our study 41.6% babies required neonatal ICU.Major neonatal complications were RDS(20%), HIE(4%), IUGR(22%), Septicemia(21%), and neonatal death(28%). The neonatal outcome depends on the intensive care facilities and the gestational age at birth. Witlin et al reported that neonatal outcome in PIH was directly correlating with increasing birth weight and Respiratory distress syndrome reduced with increasing gestational age. Most of the women required hospitalization for 1 week with a minimum of 3 days and a maximum of 25 days. Mean of postpartum hospital stay was 16 days. Prolonged hospitalization in most of the women was for baby sake. In the study by D.R. Hall[7]mean period of postpartum hospitalization was 5 days.

CONCLUSION

PIH causes much maternal and perinatal mortality. Early PIH worsens maternal and perinatal outcomes. Early detection in a milder disease, corticosteroid administration, and judicious delivery timing can improve outcomes. We have more late-onset PIH. Detecting this early and delivering them will reduce perinatal and maternal morbidity. We're slowly reducing PIH and eclampsia rates, but we're far from developed countries. Avoiding early marriages and counseling regarding contraception should be done. Antenatal and obstetric care can reduce complications.

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