

Maternal and Perinatal Outcome Associated With Gestational Hypertension

Dr. Manju Kumari Choudhary^{1*}

¹Associate Professor, Department of Obstetrics and Gynecology, M.G.M Medical College, Jamshedpur, Jharkhand.

Corresponding author: Dr. Manju Kumari Choudary

Abstract

Introduction: Hypertensive disorders of pregnancy are the most common causes of adverse maternal & perinatal outcomes. Such investigations in resource limited settings would help to have great design strategies in preventing maternal and perinatal morbidity and mortality

Materials and Methods: This was a hospital based study done in M.G.M Medical College, Jamshedpur, by evaluating the records of women who had delivered in our hospital from July 2016 to June 2017. All women who presented with hypertensive disorders of pregnancy and delivered in the hospital and whose records were complete, were included in the study and divided into 5 groups namely, Gestational hypertension (GH), Mild pre-eclampsia (PE), Severe pre-eclampsia, Eclampsia and Chronic hypertension with superimposed pre-eclampsia (CHPE) based on their clinical presentation at admission. After excluding all incomplete data entries, the sample size was finalized at 200.

Results: In this study, records of 2,989 women who delivered in our tertiary hospital were reviewed and of these, 256 women had hypertensive disorders of pregnancy. Fifty six of these women had either left the hospital against medical advice or their records were incomplete so their outcome could not be followed and hence were excluded from the study.

Conclusion: Pre-eclampsia and Eclampsia still remains a major problem in developing countries. Pregnancy induced hypertension is one of the most extensively researched subjects in obstetrics. Still the etiology remains an enigma to us. Though the incidence of pre-eclampsia and eclampsia is on the decline, still it remains the major contributor to poor maternal and foetal outcome. The fact that pre-eclampsia, eclampsia is largely a preventable disease is established by the negligible incidence of pre-eclampsia and eclampsia with proper antenatal care and prompt treatment of pre-eclampsia. In pre-eclampsia and eclampsia, pathology should be understood and that it involves multiorgan dysfunction should be taken into account. The early use of antihypertensive drugs, optimum timing of delivery and strict fluid balance, anticonvulsants in cases of eclampsia will help to achieve successful outcome. Early transfer to specialist centre is important and the referral the referral centers should be well equipped to treat such critically ill patients.

Key words: Pre-eclampsia, Eclampsia, Gestational hypertension (GH), Mild pre-eclampsia (PE), Severe pre-eclampsia, Eclampsia, Chronic hypertension with superimposed pre-eclampsia (CHPE).

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I. Introduction:

Preeclampsia is a hypertensive disorder of pregnancy, which usually manifests after 20 weeks of gestation with hypertension and proteinuria, while hypertension being defined with blood pressure at least 140 mm Hg for systolic and/or 90 mm Hg for diastolic on at least two occasions and at least 4-6 hrs apart in women known to be normotensive beforehand. Severe hypertension is considered if sustained rises in blood pressure to the level of ≥ 160 mm Hg for systolic, and/or 110 mm Hg for diastolic. When convulsions occur in addition to these signs, of preeclampsia the condition is referred to as eclampsia.¹

Preeclampsia is primarily a disorder of nulliparous, but multiparous pregnant women with a new partner have an elevated risk of preeclampsia similar to that of nulliparous women.² Delivery of placenta is the only treatment yet known, indicating placenta is the primary sponsor to the pathogenesis of preeclampsia.³

Following the drama of hypertensive disorders during pregnancy, 12–22% of all pregnancies, have a tragic story. Increased mortality and morbidity as a result of Preeclampsia during pregnancy is not only a terror to the mother but also to the fetus. Preeclampsia has hang around till this century and continues being public health concern in both developed and developing countries.⁴ The usual markers of developing countries like poor antenatal care, illiteracy, lack of awareness and poverty in developing countries continues to favor these

nightmares of pregnant mothers.⁵ Thus, the aim of this study is to highlight the management outcome and factor associated with pregnancy related hypertensive disorder in an M.G.M Medical College and hospital.

II. Materials And Methods:

This was a hospital based study done in M.G.M Medical College, Jamshedpur, by evaluating the records of women who had delivered in our hospital from July 2016 to June 2017. All women who presented with hypertensive disorders of pregnancy and delivered in the hospital and whose records were complete, were included in the study and divided into 5 groups namely, Gestational hypertension (GH), Mild pre-eclampsia (PE), Severe pre-eclampsia, Eclampsia and Chronic hypertension with superimposed pre-eclampsia (CHPE) based on their clinical presentation at admission. After excluding all incomplete data entries, the sample size was finalised at 200.

Chronic hypertension was defined as hypertension diagnosed before pregnancy and / or diastolic pressure ≥ 90 mmHg and / or antihypertensive medications started each before the 20 weeks of gestation uncomplicated by de novo proteinuria; Gestational hypertension was defined as hypertension with systolic blood pressure ≥ 140 mmHg and/or diastolic pressure ≥ 90 mmHg for the first time after 20 weeks of gestation and/or in women hospitalized during pregnancy because of hypertension and/or if antihypertensive medications prescribed for the first time after 20 weeks of pregnancy without proteinuria; Preeclampsia: women different from gestational hypertension because of development of de novo proteinuria ($\geq 0.3g/24h$). Preeclampsia superimposed on chronic hypertension: the criterion for chronic hypertension is met along with the criteria for preeclampsia [9].

Preeclampsia was further classified into mild and severe. Cut offs used to define severe are BP of 160/110 mmHg or higher along with symptoms like cerebral or visual disturbances, severe and persistent epigastric pain or right upper quadrant pain, pulmonary oedema, thrombocytopenia and fetal growth restriction [10]. Gestational age (GA) was defined on the basis of last maternal menstrual period and confirmed by early ultrasound examination; patients with uncertain GA were not included. LBW was defined as a birth weight (BW) below 2500 gm, very low birth weight (VLBW) was defined as BW below 1500g. A small for gestational age (SGA) was defined as a newborn infant with a birth weight below the 10th percentile according to the national standard curve for singleton birth. Information regarding the patient's age, parity and associated medical illness was noted and fed into Microsoft Excel sheet. The details of the period of gestation at which pregnancy was terminated and foeto-maternal outcomes were also collected. The data was then tabulated and analysed using Chi square test. The differences between the groups were considered significant if the p value was less than 0.05.

III. Results:

Demographic characteristics	Frequency (%) N=200
Age in years	
18-27	142(71)
28-37	50(25)
38-47	8(4)
Parity	
Primi Gravida	90(45)
Multigravida	110(55)
Mode of delivery	
Vaginal	119(59.5)
caeserean	81(40.5)
Gestational Age	
Pre term	120(60)
Term	80(40)
Birth Weight	
VLBW	57(28.5)
LBW	143(71.5)

Table 1: patient demographic characteristics

Maternal Outcome	GH (N=35)	Mild PE(N=40)	Severe PE(N=35)	Eclampsia (N=43)	CHPE (N=47)	Total No (%)
Normal	20	21	27	35	37	140(70)
Morbidity	0	0	6	5	0	11(5.5)
ICU adm	0	0	2	1	0	3(2.5)
Ventilator	0	0	1	6	0	7(3.5)

Mortality	0	0	3	3	0	6(3)
ARF	0	0	4	7	0	11(5.5)
DIC/HELLP	0	0	2	1	0	3(1.5)
PPH	0	0	1	2	0	3(1.5)
CHF	0	0	2	2	0	4(2)
Intra cerebral haemorrhage	0	0	1	1	0	2(1)
ARDS	0	0	1	5	0	6(3)
RD2	0	0	1	3	0	4(2)

Table 2: Maternal Outcome in various groups

Fetal Outcome	GH	Mild PE	Severe PE	Eclampsia	CHPE	Total No (%)
Normal	11	12	21	8	3	55(27.5)
IUD/Still Birth	2	1	14	11	0	28(14)
NICU adm	7	6	25	43	0	81(40.5)
Ventilator	1	0	3	10	0	14(7)
Neonatal death	0	0	2	4	0	6(3)
Low APGAR	1	6	15	38	0	60(30)
IUGR	10	5	34	39	0	88(44)

Table 3: Perinatal Outcome Outcome in various groups

In this study, records of 2,989 women who delivered in our tertiary hospital were reviewed and of these, 256 women had hypertensive disorders of pregnancy. Fifty six of these women had either left the hospital against medical advice or their records were incomplete so their outcome could not be followed and hence were excluded from the study. Remaining 200 women were included and analyzed. The incidence of HDP came out to be 6.92%. Of these, 12.5% (26/207) women had gestational hypertension, 13.5% (28/207) women had mild pre-eclampsia, 36.7% (76/207) had severe pre-eclampsia and 35.7% (74/207) women presented with eclampsia. Only three women had preeclampsia superimposed on chronic hypertension and hence this group was not included for statistical analysis and calculation of p value.

IV. Discussion:

Pregnancy induced hypertension is a common condition which is responsible for majority of maternal and fetal morbidity and mortality. The incidence of pregnancy induced hypertension (specially pre-eclampsia and eclampsia) and the total number of deaths from the same have come down dramatically in developed countries. This is totally attributed to improvements in prenatal care and management. However, in developing countries it still stands as one of the major complications of pregnancy.⁷

Foetal complications associated with HDP especially pre eclampsia and eclampsia are IUGR, oligohydramnios, preterm delivery, non reassuring foetal heart rate patterns during labour, low APGAR scores at birth and NICU admission. Tavassoli et al. [11] reported IUGR in 27.5% of the neonates in severe pre-eclampsia group whereas Yucesoy et al. [12] reported IUGR in 29.4% and oligo-hydramnios in 7.5% cases [11,12]. In another study the rate of very early preterm delivery (<32 weeks) was 7.8% in CH, 5.9% in GH, 21.2% in PE and 37.2% in CHPE while it was only 1.2% in the control group. The rate of SGA was 16.2% in CH, 22.8% in GH, 50.7% in PE, 37.2% in CHPE and 5% in controls [18]. Similar results were observed in our study also.

Delivery is the ultimate cure for pre eclampsia or eclampsia. The decision when to deliver is made when the benefits of delivery outweigh those associated with prolonging pregnancy. There are no randomized trials comparing the optimal method of delivery in women with pre eclampsia. According to the recommendations, a plan for vaginal delivery should be considered in all women with severe disease particularly those beyond 30 weeks gestation. Elective Caesarean section may be preferred in cases before 32 weeks with IUGR and oligo-hydramnios. For women with any HDP, vaginal delivery should be considered unless a caesarean section is required for the usual obstetric indications. If vaginal delivery is planned and the

cervix is unfavourable, then cervical ripening should be used to increase the chance of a successful vaginal delivery. Antihypertensive treatment should be continued throughout labour and delivery to maintain systolic BP at <160 mmHg and diastolic BP at < 110 mmHg. The third stage of labour should be actively managed with oxytocin 5 units intravenously or 10 units intramuscularly, particularly in the presence of thrombocytopenia or coagulopathy. Ergometrine should not be given in any form.⁸

When counselling women who have pre-eclampsia or eclampsia, the main questions about long term prognosis are the possibilities of recurrence in a future pregnancy and the possibilities of chronic hypertension later in life. In fact, the probability of recurrence of pre-eclampsia is approximately 30% and this probability increases inversely with gestational age at which the patient developed the disease.⁹ Prevention of pre-eclampsia and eclampsia can be theoretically achieved at primary, secondary or tertiary levels. Primary prevention is equivalent to avoiding the occurrence of the disease- a task that is impossible at this time because of our limited knowledge about the aetiology and tertiary prevention is synonymous with treatment to avoid complications of the disease. For these reasons efforts should be made to focus on secondary prevention that consists of correcting the pathophysiology of the process to avoid the onset of clinical signs and symptoms.¹⁰

V. Conclusion:

Pre-eclampsia and Eclampsia still remains a major problem in developing countries. Pregnancy induced hypertension is one of the most extensively researched subjects in obstetrics. Still the etiology remains an enigma to us. Though the incidence of pre-eclampsia and eclampsia is on the decline, still it remains the major contributor to poor maternal and foetal outcome. The fact that pre-eclampsia, eclampsia is largely a preventable disease is established by the negligible incidence of pre-eclampsia and eclampsia with proper antenatal care and prompt treatment of pre-eclampsia. In preclampsia and eclampsia, pathology should be understood and that i- involves multiorgan dysfunction should be taken into account. The early use of antihypertensive drugs, optimum timing of delivery and strict fluid balance, anticonvulsants in cases of eclampsia will help to achieve successful outcome. Early transfer to specialist centre is important and the referral the referral centers should be well equipped to treat such critically ill patients.

Training and continuing medical education of the attending staff and structuring management protocols relevant to local needs is also an important part in case of PIH.

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