



RETROSPECTIVE STUDY OF CLINICAL PRESENTATION IN CASES OF PREGNANCY ASSOCIATED WITH PRE-ECLAMPSIA AND ECLAMPSIA SYNDROME AND ITS FETOMATERNAL OUTCOME

**Dr Juhi Kumari
Soni**

Junior Resident, Department of Obstetrics and Gynaecology, Patna Medical College and Hospital, Patna.

Dr Garima Sinha*

Senior Resident, Department of Obstetrics and Gynaecology, Dr Hedgewar Arogya Sansthan, Delhi. *Corresponding Author

**Dr (Prof) Amrita
Sharan**

Professor, Department Of Obstetrics And Gynaecology, Patna Medical College and Hospital, PMCH, Patna.

ABSTRACT

BACKGROUND :- Pre-eclampsia and eclampsia account for the majority of referrals in a tertiary care centre as it stands one of the major causes of maternal and perinatal morbidity and mortality. The objective of this study was to study the clinical presentation and its fetomaternal outcome in patients with severe pre-eclampsia and eclampsia in a tertiary care centre over a period of one year.

METHODS: A retrospective study was carried out at Patna Medical College & Hospital (PMCH), Patna, a tertiary care centre in Bihar on 156 women with severe preeclampsia and eclampsia over a period of 1 year. Only those cases with B.P reading of $\geq 160/110$ mm Hg or presenting with eclampsia were included in the study.

RESULTS: 58.3% of the cases were in the age group of 18 -24 years, nearly 63.5% were primigravidae and the majority were referred from peripheral hospitals. Liver function tests were deranged in 39% of the patients and 28% had abnormal renal function. Labetalol was the most commonly used antihypertensive and magnesium sulphate was the anticonvulsant used in all the cases. Lower segment caesarean section was the mode of delivery in 57.7% of the cases. Commonest maternal complication was pulmonary edema. There was 16 maternal mortality. Prematurity was the most common complication among the neonates seen in 64.5% of the cases.

CONCLUSIONS: Accessible health care and health education and awareness regarding antenatal check-ups for all women will lead to early detection of severe preeclampsia. Prompt treatment and management of its complications will certainly improve the maternal and fetal outcome.

KEYWORDS : Eclampsia, Maternal morbidity, Maternal mortality, Perinatal morbidity, Perinatal mortality, Preeclampsia

INTRODUCTION

Hypertensive disorders complicate about 10 % of all pregnancies worldwide. Hypertension, along with haemorrhage and infection form a deadly triad accounting for a major share of maternal morbidity and mortality.¹ The World Health Organisation systematically reviews maternal mortality worldwide and in developed countries 16% of maternal deaths were reported to be due to hypertensive disorders.² In India hypertensive disorders account for the third most important cause of maternal mortality.³

Pre-eclampsia and eclampsia disorders of pregnancy remains among the most significant and intriguing unsolved problems in Obstetrics.

Obstetrics is a continually changing subject when new diseases are being identified, old diseases defined, new aetiologies discovered and new treatment modalities being evolved.

There is fivefold increase in perinatal mortality in Pre-eclampsia and Eclampsia with iatrogenic prematurity being the common culprit. They are responsible for nearly 40% of perinatal deaths.

Pre-eclampsia and Eclampsia syndrome is a multisystem disorder of vascular function specific to pregnancy and is typically characterized by hypertension, proteinuria and/or multiorgan involvement. It arises in the placenta, probably due to ischemia and propagates through maternal vascular tree, such that all the organ systems are affected. Treatment of this disorder remains a challenge mainly because the exact aetiology is not known. Consequently, management is directed towards the detection of the disorder at an early stage and to effect or at least ameliorate its progression in an attempt to achieve fetal maturity while preventing maternal complications.

In spite of advances in medicine, preeclampsia and eclampsia continue to remain leading causes of maternal and perinatal mortality and morbidity throughout the world. Severe Preeclampsia can lead to multiple life-threatening complications like eclampsia, cerebral haemorrhage, cardiovascular complications, hepatic failure, acute renal failure, pulmonary oedema, ARDS (Adult Respiratory Distress syndrome), DIC (Disseminated Intravascular Coagulation) HELLP syndrome (Haemolysis, Elevated Liver enzymes, Low Platelet), retinal detachment, cortical blindness, hypoxic cerebral damage and even maternal death.

Fetal complications are mainly due to uteroplacental insufficiency

leading to IUGR (Intrauterine Growth Restriction), low birth weight babies, IUFD (Intrauterine Fetal death) and complications due to prematurity.

MATERIALS AND METHODS

This is a retrospective study conducted in Department of Obstetrics and Gynaecology, Patna Medical College & Hospital (PMCH), Patna from November 2020 to October 2021. All pregnant women who presented with Pre-eclampsia and Eclampsia syndrome were included in the study. A total of 3989 patients delivered during the study period of which 156 patients had Pre-eclampsia and Eclampsia.

Inclusion Criteria- B.P reading of $\geq 160/110$ mmHg with proteinuria was the criteria followed for categorising severe preeclampsia. Eclampsia was presence of seizures in women with preeclampsia which could not be attributed to other causes.

Exclusion Criteria- Patients with chronic hypertension (before 20 weeks of gestation), chronic renal disease, and mild preeclampsia were not included in the study.

Investigations and management were carried out in accordance with the standardised department protocol. Investigations that were routinely done for all the cases were complete hemogram, platelet count, liver function tests, renal function tests, coagulation profile, routine examination of urine protein, Serum LDH, Serum Uric acid. Ultrasonography with doppler was done after stabilising the condition of the patients in selected cases.

Antihypertensive drugs used were Labetalol and Nifedipine - both orally and parenterally, singly or in combination as needed. Magnesium sulphate was the anticonvulsant of choice used both as prophylaxis and treatment according to the Pritchard's regime.

Table 1: Distribution of cases according to the age of the patients.

Age	No. of Cases	%
18 – 24 yrs.	91	58.3
25 – 30 yrs.	50	32.1
>30yrs	15	9.6

Table 2: Distribution of cases according to their parity.

Parity	No. of cases	%
Primigravida	99	63.5
Multigravida	57	36.5

Table 3: Gestational age at presentation.

Gestational age	No. of cases	%
<34 weeks	41	26.3
34 – 37 weeks	52	33.3
>37 weeks	63	40.4

Table 4: Mode of delivery.

Mode of delivery	No. of cases	%
Vaginal delivery	60	38.5
Caesarean section	90	57.7
Hysterotomy	6	3.8

Table 5: Distribution of cases according to the investigations done

Proteinuria	No. of cases	%
+1	24	15.4
+2	52	33.3
+3	80	51.3

LFT	No. of cases	%
SGOT >70 IU/L	62	39.7
SGPT >70 IU/L	62	39.7
Serum bilirubin >1.2 mg/dl	35	22.4
Serum LDH	52	33.3

RFT	No. of cases	%
Blood urea >40 mg/dl	20	12.8
Serum creatinine >0.8 mg/dl	42	26.9
Serum uric acid >7mg/dl	55	35.2

Coagulation profile	No. of cases	%
Platelet Count <1 lakh	95	61
Deranged PT INR	20	12.8

Table 6: Clinical presentation

Symptoms	No. of cases	%
Convulsions	91	58.3
Headache	66	42.3
Vomiting	44	28.2
Blurring of vision	48	30.7
Epigastric pain	42	26.9
Oliguria	20	12.8
Generalized oedema/ ascites	24	15.4

Table 7: Fetal complications

Fetal complications	No. of cases	%
Prematurity	80	51.3
Asphyxiated baby	15	9.6
IUD	20	12.8

Table 8: Maternal complications

Maternal complications	No. of cases	%
Abruptio placentae	8	5.1
Pulmonary oedema	15	9.6
Pulmonary embolism	5	3.2
Renal dysfunction	4	2.6
HELLP syndrome	5	3.2
DIC	4	2.6
PPH	5	3.2
Mortality	16	10.2

RESULTS

Out of the 156 patients in the present study, preeclampsia and eclampsia was observed in different age groups ranging from 18 to >30, maximum number of cases 91 were in the age group of 18 to 24 years. There were 15 patients over the age of 30. Table 1 gives the distribution cases vis a vis age of patients. 99 women were primigravida, while 57 women were multiparous. (Table 2) It was observed that the majority 63 (40.4%) of the patients presented at gestational age >37 weeks, before 34 weeks of gestation was noted in 41 (26.3%) (Table 3). 90 patients underwent LSCS. 60 patients delivered by vaginal delivery. (Table 4) 51.3% of the patients had \geq +3 proteinuria, 28% had abnormal renal function tests. Liver enzymes were elevated in 39% (Table 5). Out of 156 patients, 82 patients were referred for convulsions. Headache was the main symptom in 50 patients of severe preeclampsia. 9 patients of severe pre-eclampsia later on had convulsions. 24 patients presented with generalized edema

and/ or ascites. (Table 6). 80 babies were premature, 15 were asphyxiated needed NICU admission, and 20 were IUD. (Table 7). Maternal complications like Pulmonary oedema occurred in 15 cases, PPH occurred in 5 cases, DIC in 4, renal dysfunction in 4, abruption in 8, HELLP in 5, Pulmonary embolism in 5. There were 16 maternal deaths (Table 8).

DISCUSSION

Out of the 156 cases of severe preeclampsia and eclampsia in the present study, 99 were primigravidae and 91 were between 18 to 24 years of age. Severe preeclampsia was seen more commonly in primigravidae. Other studies notably by Sibai and Cunningham also support this view. 4 Nulliparity as a separate risk factor for severe preeclampsia has been reported in studies by Saxena et al in India and by Conde-Agudelo in Latin American women. 5,6 In our study 40.4% patients delivered after 37 weeks period of gestation. Study by Sasmita Das et al showed 68.1%. 10 Study by Devi et al showed that 60% of patients were term. 8 Study by Saxena et al showed 64% cases had gestational age between .31 to 37 weeks and 35% cases had term pregnancies. 9

The most common mode of delivery was lower segment caesarean section in 57.7% of the cases. The mode of delivery was determined by severity of maternal condition, Bishop's score, gestational age, fetal condition, USG and laboratory investigations. Singhal et al reported 33% caesarean section rate. 10 Tufnell et al reported as high as 72% caesarean section rate in BJOG. 11 Caesarean section rates of 71% and 78% respectively were reported by Miguel M et al and Dissanayake VH et al. 12,13

The high rate of caesarean section in the present study is due to emergency delivery approach taken to prevent further maternal and fetal complications due to severe preeclampsia or eclampsia especially in cases where the cervix is unfavorable for induction. Liver functions were deranged in 39% of our cases and renal functions were deranged in another 28% whereas in a study done by Singhal SR et al showed that 20% patients had deranged liver function tests while 27% patients had deranged renal functions (Singhal, 2009). PT INR was deranged in 12.8% patients who were managed by giving FFP transfusions.

Prematurity was the most common complication among the neonates seen in 64.5% of the cases. Tufnell et al reported 65.3% incidence of prematurity. 11 The high incidence of preterm delivery could be attributed to the early intervention and induction of labour or LSCS done to avert further maternal and perinatal complications.

In our study, headache as the main symptom in 66 patients of severe pre-eclampsia, followed by edema feet, vomiting, blurring of vision oliguria and epigastric pain in the rest. A study done by Singhal SR et al showed that 44% patients in their study had headache as the main symptom (Singhal, 2009). In our study, we report convulsions in 91 patients. However, similar study done by Singhal SR et al showed that 51% of patients had presented with convulsions (Singhal, 2009). Maternal complications included PPH in 5 cases followed by DIC in 4, renal dysfunction in 4, abruption in 8, HELLP in 5, Pulmonary edema in 15, Pulmonary embolism in 5 and maternal death in 16 cases. Abruptio was seen in 9 cases in the study by Shaikh S et al and Murphys DJ. Whereas another study done by Singhal SR et al showed only one case had abruption.

CONCLUSION

Pre-eclampsia and eclampsia still remain a major problem in developing countries and continue to be significant causes of maternal and fetal morbidity and mortality. Good antenatal care will identify preeclampsia in early stages. Regular blood pressure monitoring specially in predisposed individuals is essential to detect such high-risk cases early and thus prevent complications. The incidence of eclampsia can be reduced by better antenatal care, early recognition and prompt treatment of severe pre-eclampsia. Improve maternal and perinatal outcome. Education and empowerment of women and accessible health care especially to the socioeconomically deprived and rural population is the need of the hour.

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