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Analysis of fetomaternal outcomes in severe preeclampsia and eclampsia in a tertiary care hospital

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ABSTRACT

Preeclampsia continues to be one of the leading cause of fetomaternal morbidity & mortality.It is not totally preventable disease. Obstetric outcome with maternal and fetal complications in severe preeclamptic and eclamptic mother were studied.

Methods: This retrospective study of 102 women with severe preeclampsia& 14 with eclampsia was conducted at B.J.G.M.C & SGH, Pune during period of first April 2020 to 31st July 2020.

Result: During study period,2401women were delivered in hospital out of which 116 patients of severe PE were evaluated. Most common obstetric complication noted was atonic postpartum haemorrhage (PPH) 22% followed by HELLP syndrome 13.79% and abruptio placentae 3.4%. Prematurity was noted in 32% neonate. Perinatal mortality rate observed was 4.2%. Nearly half women required cesarean delivery.

Conclusion: Severe preeclampsia leads to serious fetomaternal morbidity and mortality. Accurate and simple predictive test for early detection of preeclampsia and regular antenatal visits along with timely management to prevent complications will reduce maternal and fetal morbidity in severe preeclampsia.

Keyword: Preeclampsia, Eclampsia, Maternal morbidity, Hellp Syndrome.

I. INTRODUCTION

Preeclampsia continues to be one of the leading cause of fetomaternal morbidity & mortality despite of recent improvement in maternal health care. Exact etiopathogenesis of preeclampsia (PE) is still unknown. In mother, serious complications including eclampsia, HELLP syndrome , renal dysfunction, postpartum haemorrhage (PPH) commonly associated with severe form of disease increase maternal morbidity & mortality. Traditionally irrespective of gestational age, severe PE has been indication for delivery of fetus. However fetal consequences of early delivery are severe in terms of prematurity & its complication. Severe PE has shown to be associated with iatrogenic preterm delivery, birth asphyxia and fetal growth restriction. In this study we evaluated maternal & fetal complications associated with severe PE & eclampsia. Maternal demographic features, clinical characteristics and incidence of severe PE and eclampsia was also studied.

II. MATERIAL AND METHOD:

This retrospective observational study was conducted atBJ GOVERNMENT MEDICAL COLLEGE and SGH Pune during period of 1st April 2020 to 31 July 2020. In present study we analysed case record of 116 severe preeclampticpatients, ecclampsia admitted at tertiary care hospital for delivery during study period,out of which 102 (87.93%) were of severe PE and 14(12%) had eclampsia. Maternal demographic features,clinical characteristics like age, parity, gestational age, symptom at presentation were noted.Data regarding maternal outcome including mode of delivery and complications in both mother and fetus were analysed.Preeclampsia was stratified into mild and severe according to ACOG 2002 guidelines[1,2,3].

Patients with chronic hypertension (hypertension diagnosed before 20 weeksof gestation) and multiple pregnancy and autoimmune diseases were excluded.In all cases, investigation andmanagement was done according to hospital protocol.

III. STATISTICAL ANALYSIS

Quantitative data was presented as means and standard deviation.Qualitative data was presented as frequencies.

IV. RESULT

During study period116 severe preeclamptic women delivered in hospital, while total number of delivery was 2401. Out of 116 women, 102 (87.93%) were of severe PE and 14(12%) had eclampsia.

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TABLE 1 shows demographic characteristics and obstetric detail of women in study group.

S.N	Maternal Characteristics	Severe Preeclampsia Frequency (%) N=102	Eclampsia Frequency (%) N=14
1	Age in Yrs		
	≤30	94 (92.15)	12 (85.7)
	>30	8 (7.8)	2 (14.2)
2	Gravida		
	Primi	74 (72.54)	11(78.5)
	Multi	28 (27.45)	3 (21.4)
3	Gestational age in weeks		
	<34	20 (19.6)	10 (71.4)
	34-36	12 (11.76)	2 (14.2)
	≥37	70 (68.6)	2 (14.2)

Table 1: Distribution of demographic characteristics & obstetric details of women in study group

Mean age of women in study group was 24.17+3.77 years.Majority of cases (92%) were below 30 years. 74(72.54%) cases from severe PEgroup and 11(78.5%) from eclamsia group were nulliparous.

70(68.65) from severe PE group and 2(14.3%) from eclampsia group were from gestational age group of >37 weeks (term pregnancy) while past history of preeclampsia was noted in 10 cases.

Table 2: Symptoms and signs at presentation

S.N	Symptomsand Signs	Severe Preeclampsia Frequency (%) N=102	Eclampsia Frequency(%) N=14
1	High BP	27 (26.47)	4 (28.57)
2	Pedal oedema	18 (17.64)	8 (57.14)
3	Headache	21 (20.58)	-
4	Visual disturbance	3 (2.9)	-
5	Epigastric pain / vomiting	10 (9.8)	-
6	Obstetric complications		
	Pain/ pv bleeding/ reduced FM	16 (15.68)	2 (14.28)
8	Sign of oliguria	3 (2.9)	-
9	Past h/o Preeclampsia	10 (9.8)	-
10	Mgso4 therapy	50 (49)	14 (100)

TABLE 2 showed symptom and sign at time of presentation in PE and severe PE group.Raised blood pressure 27(26.47%) was commonest presentation in both groups followed by headache 21(20.58%) and pedal edema. 18(17.26%) patients presented with obstetric complaints at the time of admission . Most common coexisting comorbidity noted was anaemia 20(19,6%) in study group. Out of 14 eclamptic patients 8(57.14%) presented with convulsion at time of admission, 4 had intrapartum and remaining 2 patients had postpartum convulsion. 50(49%) from severe PE group required prophylactic MGSO4 therapy.

TABLE 3: Coexisting Comorbidities in study group patients

S.N	Coexisting Comorbidities	Frequency	Percentage
1	Anaemia	20	17.24
2	Hypothyroid	10	8.6

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3	Rheumatoid arthritis (CTD)	2	1.7
4	Heart Disease	2	1.7
5	Total	34	

TABLE 4:Maternal complications among severe PE and Eclampsia

S.No	Maternal complications	Frequency	Percentage
1	Eclampsia	12	10.34
2	Abruption	4	3.44
3	HELLP	16	13.79
4	Renal Failure	4	3.44
5	Postpartum haemorrhage	26	22
6	Ascitis	15	12.9
7	DIC	3	2.5
8	ICU Admission	4	3.44

TABLE 4 shows maternal complications among severe PE and Eclampsia. 63(54.31%) patients developed complications like eclampsia, abruption, HELLP syndrome etc. 12(10.34%) pateints from severe PE group developed eclampsia. 26(22%) patients had postpartum haemorrhage, 16 patients had HELLP syndrome & abruption placentae was noted in 3.4% patients. Ascitis was noted in 15(12.9%) pateints. Pateints with severe features of PE like uncontrolled hypertension, status eclampticus, HELLP syndrome required ICU admission. There was no maternal mortality in study group. Anaemia, preeclampsia and PPH was associated with increased maternal morbidity.

Table 5: Perinatal outcome

S. No	Perinatal Outcome	Frequency	Percentage
1	Low birth weight babies (<2.5 Kg)	52	44.82
2	IUGR	21	18
3	IUD (Intrauterine fetal demise)	3	2.5
4	Still Birth	2	1.7
5	NICU Admission	20	18
6	Prematurity	37	32

Perinatal outcome is shown in Table -5. In this study it was observed that 52 (44.82%) babies were low birth weight babies. Prematurity was noted in 32% neonates. Adverse perinatal outcome in terms of prematurity, fetal growth restriction, still birth was noted in severe PE compared to normal population. Perinatal mortality in terms of 2.5% intrauterine deaths, and 1.7% still birth were noted.

Table 6 : Obstetric outcome

S. No	Obstetric Outcome	Severe Preeclampsia Frequency (%)	Eclampsia Frequency (%)
1	Vaginal Delivery	30 (29.41)	5 (35.71)
2	Instrumental Delivery	10 (9.8)	1(7.14)
3	Hysterotomy	2(1.9)	
4	LSCS	60 (58.82)	8 (57.14)
5	Total	102	14

Mode of delivery is shown in table 6. Nearly half women 51% were delivered by caesarean section. 10(8.6%) cases required instrumental vaginal delivery while rest had vaginal delivery.

V. DISCUSSION

Women who had severe PE at earlier gestationdevelop severe complications. Medication does not cure condition completely and cure of disease is delivery of placenta. Maternal and fetal condition worsen if timely intervention to control hypertension and manage its complications are not done. A study of severe PE by Pillai reported incidence of 9.5%. Unlike other studies,in present study, overall incidence of severe PE was 4.83, this variation could be due to geographic variation, socioeconomic status and other parameters like age,

parity[5]. 92% cases were below 30 years of age, 72% were primigravidae and majority 60.3% were above 37 weeks of gestation. In present study postpartum haemorrhage was most common maternal complication noted in 26(22%). This finding is consistent with previous study by Pillai[4] but this rate is higher than study by Abhida et al[6]. This could be due to more number of high risk referralsreceivedand 19.6% cases had additional comorbidity like anaemia.

Maternal complication of PE in pregnancy in our study was abruption, 3.44%, HELLP 13.79%, DIC 2.5%. Ascitis was noted in 12.9% cases . This finding of ascitis is similar to finding of De Sweit et al[7] who recorded ascitis in 13 out of 99 patients. Aklima et al[8] reported abruption in 4% patients but HELLP syndrome noted in 8% cases. In this study it was observed that 44% babies had low birth weight, 29.3% were preterm and 4.2% was perinatal mortality rate. Adverse neonatal outcome was observed in early onset (<34 weeks) severe PE. Unlike previous study[8] we observed lesser NICU admission. Similar to present study prematurity rate of 23.65% was noted in study by Abidha et al[6]. Comparable to study by Joshi et al[10] we also noted 18% fetal growth restriction rate but perinatal mortality was lesser 4.2%. In present study nearlly half (51.72%) women required cesarean as mode of delivery, this study finding is consistenrt with previous study[4]. In this study there was no maternal and early neonatal death.

VI. CONCLUSION:

Preeclampsia is one of leading cause of life threatening complications in both mother and fetus. Preeclampsia is not totally preventable. Identification of risk factors and early prediction by sensitive predictive tests with regular antenatal checks to detect rising blood pressure will reduce maternal and fetal morbidityassociated with preeclampsia.

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