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Fetomaternal Outcome in Preeclampsia in a Tertiary Care Hospital

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Abstract*: Preeclampsia contributes significantly to maternal & perinatal morbidity and mortality.*
Objective: *To study maternal & fetal outcome in preeclampsia.*
Method: *Case records of 168 women with preeclampsia, out of which 58 had severe preeclampsia were analysed. This retrospective observational study was conducted at B.J. government medical college, Pune, during period of 1st March 2020 to 30th June 2020.*
Result: *Incidence of PE was 6.43. Among study group 70% were primigravida & nearly 70% were >37 weeks of gestation. 15 (8.9%) patients developed eclampsia, 6(3.5%) developed abruptio placentae, 5(2.9%) had HELLP syndrome. PPH was noted in 22% cases. Prematurity, LBW & stillbirth was noted in 54(32%), 59(35%) and 7(4%) cases respectively. 54% Cases delivered by caesarean section. The adverse maternal outcome includes PPH, eclampsia, abruptio placenta, while for fetus prematurity and LBW which increased fetomaternal morbidity in patients of preeclampsia.*
Conclusion: *Although it is not possible to prevent PE & its morbidity, antenatal screening for early detection & timely intervention will help to improve pregnancy outcome.*
Key words: *Preeclampsia, HELLP Syndrome, Eclampsia, maternal morbidity.*

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Preeclampsia is a multisystem disorder with unknown etiology and contribute significantly to maternal and neonatal morbidity & mortality. Preeclampsia has wide spectrum of severity ranging from mild to severe. Maternal complications commonly associated with disease like Eclampsia, HELLP syndrome, DIC, renal failure, postpartum hemorrhage, pulmonary edema, abruption increases maternal morbidity & mortality. It is one of the common cause of iatrogenic prematurity. For fetus asphyxia, prematurity, fetal growth restriction (FGR) increase perinatal mortality. Improvement in antenatal care will help in early detection of disease along with prompt management of disease and its complication that can reduce the fetomaternal morbidity and mortality. In present study we analysed maternal and foetal outcome in pre ecclampsia cases.

I. Material And Method

This retrospective observational study was conducted at B.J. Government Medical College, SGH Pune during period of 1st March 2020 to 30th June 2020. Case records of 168 singleton pregnant women with preeclampsia, out of which 58 had severe preeclampsia admitted at tertiary care hospital for delivery during study period were analysed. Maternal demographic features, clinical characteristics like age, parit, gestational age, symptom at presentation were noted. Data regarding maternal outcome including mode of delivery and complications in both mother and foetus were analysed. Preeclampsia was stratified into mild and severe according to ACOG 2002 guidlines[1,2]

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

STATISTICAL ANALYSIS

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

II. Result

During study period 168 pre eclamptic women delivered in hospital, while total number of delivery was 2612. Out of 168 women, 110 (65.47%) had mild Preeclampsia (PE) and 58 (34.5%) had severe preeclampsia (severe PE) while 15 (8`9%) had eclampsia.

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

S.N	Maternal Characteristics	Preeclampsia Frequency (%) N=110	Severe Eclampsia Frequency (%) N=58
1	Age in Yrs		
	<20	5 (4.5%)	8 (13.79)
	21-30	101 (92%)	47 (81.03)
	>30	4 (3.6)	3 (5.17)
2	Gravida		
	Primi	77 (70)	39 (67.5)
	Multi	33 (30)	19 (32.7)
3	Gestational age in weeks		
	<34	10 (9.09)	5 (8.62)
	34-36	22 (20)	16 (27.58)
	≥37	78 (70.90)	37 (63.79)

TABLE 1 shows demographic characteristics and obstetric detail of women in study group. Mean age of women in study group was 23.17±3.65 years. Majority of cases (92%) were in 21 to 31year age group. 77(70%) cases from PE group and 39 (67.24%) from severe PE group were nulliparous. 78 from PE group and 37 from severe PE group were from gestational age group of >37 weeks (term pregnancy) while past history of pre ecclampsia was noted in 17 cases.

Table 2: Symptoms and signs at presentation

S. No	Symptoms and Signs	Preeclampsia Frequency (%) N=110	Severe Preeclampsia Frequency (%) N=58
1	High BP	44 (40)	19 (32.75)
2	Pedal oedema	17 (15.45)	8 (13.79)
3	Headache	17 (15.45)	15 (25.86)
4	Visual disturbance	3 (2.7)	1 (1.72)
5	Epigastric pain / vomiting	9 (8.18)	4 (6.89)
6	Obstetric complications		
	Pain/ pv bleeding/ reduced FM	20 (18.18)	9 (15.59)
8	Sign of oliguria	-	2 (3.44)

TABLE 2 showed symptom and sign at time of presentation in PE and severe PE group. Raised blood pressure was commonest presentation in both groups followed by headache and pedal edema.17.26% patient presented with obstetric complaints at the time of admission. Most common co morbidity noted was anaemia in study group.

Table 3: Maternal complications

S. No	Maternal complications	Frequency N=168	Percentage
1	Eclampsia	15	8.9
2	Abruption	6	3.5
3	HELLP	5	2.9
4	Renal Failure	4	2.3
5	Postpartum haemorrhage	29	17.26
6	Ascitis	20	12
7	DIC	5	2.9
8	ICU Admission	3	1.7

TABLE 3 shows maternal complications among PE and severe PE group. Post partum haemorrhage, ecclampsia, abruptio placenta were major complications noted in study group. 29(17.26%) patients had postpartum haemorrhage, 15 patients had seizures (before or during labour) and convulsions were controlled with MgS04 therapy. 52% patients from severe PE group required prophylactic MgS04 therapy due to signs of impending ecclampsia. Maternal complications were noted in 74 (44%) patients. There was no maternal mortality

in study group. Triad of Anaemia, pre ecclampsia and postpartum hamorrhage was most common cause of increased maternal morbidity and prolonged hospital stay.

Table 4: Obstetric & perinatal outcome

S. No	Obstetric & Perinatal Outcome	Frequency (N=168)	Percentage (%)
1	Vaginal Delivery	68	40.47
2	Instrumental Delivery	10	5.95
3	LSCS	90	53.57
4	Low birth weight babies (<2.5 Kg)	59	35
5	Pre-Term	49	29.3
6	NICU Admission	17	10
7	Still Birth	1	0.5

TABLE 4 shows the obstetric outcome among study group patients.90 (54%) patients were delivered by caesarian section and 10(5.9%) required assisted vaginal delivery. Rest had normal vaginal delivery.

Perinatal outcome is shown in table 4. 59(35%) babies out of 168 were LBW babies. Prematurity was noted in 54(29%) neonates and 7(4.1%) cases of still birth were encountered in study group. Adverse perinatal outcome was noted compared to normal population.

III. Discussion:

Despite of several tests to predict PE, in many cases PE can not be diagnosed. PE contributes to significant maternal & perinatal morbidity, because it is not totally preventable in all cases. In present study overall incidence of PE was 6.43. A study of PE by Das[3] et al shows incidence of PE & Eclampsia as 6.57%.

In present study it was observed that majority (92%) were in age group of 21 to 30 yrs. This could be because 21-30 yrs is commonest reproductive age group 70% patients were nulliparous. This finding shows primiparity is one of high-risk factor for PE. Literature has cited pathogenesis of association of nulliparity with PE is unclear. Many studies also reported incidence of severe PE & eclampsia higher among nulliparous patients.

Commonest comorbidity noted was anaemia. It could be due to low socioeconomic status & irregular antenatal visits.

In present study postpartum haemorrhage (PPH) was most common complication noted in 17.26% cases followed by eclampsia in 8.8%, abruptio placentae in 3.5% cases. A study by Pillai et al[4] had 23.6% incidence of PPH, various studies observed incidence of HELLP syndrome ranging from 4% to as high as 37.5%[5,6,7,8.]

A total of 75/168 case (44.64%) developed sone form of maternal complications in present study. This higher complication rate could be because our hospital is tertiary care center where complicated cases are referred for maternal & fetal ICU care. However, in study by Aabhidha et al[10] most common complication noted was antepartum haemorrhage in 13.9% cases. 59 (35%) babies had low birth weight and 49 (29.3%) were delivered preterm. Previous studies have reported rate of prematurity to be 23.65%[10] to 29.2%[3] Adverse perinatal outcome in PE is due to decreased placental perfusion leading to decreased blood supply, resulting in growth restriction. Still birth rate was 4.1%, while in study by Iqbal et al[6] perinatal mortality was as high as 17.5% was noted.

Commonest mode of delivery was caesarean section observed in 54% cases, which is consistent with previous studies[4.] Main factor deciding mode of delivery is severity of hypertension and emergency caesarean is preferred mode to prevent further maternal & fetal complication.

IV. Conclusion:

Preeclampsia is a leading cause of pregnancy related morbidity and mortality. Predictive test with high specificity will be useful for early identification of patient at risk. Although it is not possible to prevent PE & its morbidity, antenatal screening for early detection & timely intervention will help to improve pregnancy outcome.

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