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MATERNAL AND PERINATAL OUTCOME IN SEVERE PRE-ECLAMPSIA

Obstetrics & Gynaecology

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ABSTRACT

Background: Pre-eclampsia is a leading cause of maternal and perinatal morbidity and mortality worldwide. Present study was planned to find the maternal and perinatal outcome in patients of severe pre-eclampsia . **Aim:** To note the maternal and perinatal outcome in cases of severe pre eclampsia . **Materials And Methods:** It is a prospective study, carried out on 100 pregnant women admitted with severe pre-eclampsia in the department of OBGY , Alluri Sitarama Raju Academy of Medical Sciences . Detailed history and examination was carried out. Investigations like complete hemogram, liver function tests, renal function tests, coagulation profile, fundus examination and 24 hours urine for protein were done. Obstetric management was done as per existing protocol in the department, magnesium sulphate was the drug of choice for controlling convulsions, and blood pressure was controlled either by oral nefidipene or IV Labetolol . Maternal and perinatal complications were noted down **Results:** Among 100 cases of severe pre-eclampsia, majority 58% were unbooked cases. 65% were between the age of 20-30 years, and 47% were primi gravida. Majority (66%) cases were between gestational age of 31-37 weeks.46% of the patients were referred to us in view of high BP recordings. Common mode of delivery was vaginal delivery. Maternal complications encountered were PPH (45%), placental abruption (28%), HELLP syndrome (15%),hypertensive retinopathy (10%) , renal dysfunction(3%),, Pulmonary edema (2%) . Perinatal complications were also high, low birth weight (54%), preterm delivery (26%), Birth asphyxia (15%), neonatal death (5%) of cases. **Conclusion:** There is a very high maternal and perinatal morbidity associated with severe pre-eclampsia in unbooked cases. Good antenatal care can prevent severe pre-eclampsia to a large extent

KEYWORDS

Pre-eclampsia, eclampsia, HELLP syndrome, maternal morbidity and mortality

INTRODUCTION

Hypertensive disorders represents the most common medical complication of pregnancy affecting between 7- 15 % of all gestations and account for approximately a quarter of all antenatal admissions. According to WHO systemic review on maternal mortality worldwide , hypertensive disease remains a leading cause of direct maternal mortality .

It refers to new onset of hypertension
SBP ≥ 140 mmhg
DBP≥ 90mmhg

+\- proteinuria ≥ 0.3 gm protein in 24 hour urine specimen after 20 weeks of gestation in a previously normotensive woman on at least 2 occasions measured 4 hrs apart

Term 'mild preeclampsia' has been removed
Recommended term 'preeclampsia without severe features'

- Blood pressure:
  - ➢ SBP ≥ 140 or DBP≥90 mm Hg ,after 20 wks POG, on 2 occasion ≥4 hrs apart
  - ➢ SBP≥ 160 or DBP ≥ 110 mm Hg, confirm within minutes AND Proteinuria OR, in the absence of proteinuria, new onset HTN with new onset any of following
  - ➢ Proteinuria ≥ 300 mg /24 hr urine sample
  - ➢ Renal insufficiency : S. creatinine > 1.1 mg/dl
  - ➢ Cerebral or visual disturbances : new onset headache unresponsive to medication
  - ➢ Pulmonary edema
  - ➢ Impaired liver function : elevated transaminases – twice the normal
  - ➢ Thrombocytopenia : < 100,000/ml

Pre eclampsia is a leading cause of maternal and perinatal morbidity and morbidity worldwide maternal death is largely following complications from abruptio placentae, hepatic rupture and eclampsia

MATERIALS AND METHODS

It is a prospective study, carried out on 100 pregnant women admitted with severe pre-eclampsia in the deparrment of OBGY , Alluri Sitarama Raju Academy of Medical Sciences from September 2020 to September 2021. Detailed history and examination was carried out. Investigations like complete hemogram, liver function tests, renal function tests, coagulation profile, fundus examination and 24 hours urine for protein were done. Obstetric management was done as per existing protocol in the department, magnesium sulphate was the drug of choice for controlling convulsions, and blood pressure was controlled either by oral nefidipene or IV Labetalol . Maternal and perinatal complications were noted down. Outcome variables considered in this study were admission to the neonatal intensive care unit (NICU) and adverse maternal and perinatal outcomes. Confounding variables were socio-demographic characteristics (maternal age, educational status, occupation, residency) and obstetrics variables (Gravidity, mode of delivery, gestational age, ANC visit)

Inclusion Criteria

- All pregnant women admitted in labour room with features of severe pre ecalmpsia
- Those who gave consent for study

Exclusion Criteria:

- Pregnant women below 20 weeks gestational age
- Pregnant women with other comorbidities

METHODOLOGY

- For all pregnant women with severe pre eclampsia, eclampsia – complete detailed history , clinical examination carried out .
- Required investigations like complete blood picture , LFT , RFT , coagulation profile ,complete urinary examination, spot urine protein creatinine ratio done.
- Investigations for fetal well being like – non stress test , fetal doppler , bio physical profile done .
- Obstestrical management done according to her gestational age .
- Initially blood pressure controlled by giving anti hypertensives prophylactic Mgso4 therapy given.
- Magnesium sulphate was the drug of choice for controlling convulsions .

❖ If she is > 34 weeks gestational
- Close monitoring

- Antenatal corticosteroid therapy - wait for 48 hours
- deliver - if not controlled

❖ < 34 weeks – stable patient - close monitoring -
- expectant management to decrease neonatal morbidity from preterm.
- Antenatal corticosteroid therapy
- BPP ,NST – twice weekly
- Doppler study – weekly
- Daily fetal movement count
- prompt delivery whenever indicated

At the end of the study , all the data was compiled and analysed .

out of 100 women with severe pre eclampsia , 77 women were presented below 37 weeks gestational age , out of which 11 women were continued till term with conservative management . Majority of the women had preterm deliveries , 20 women had spontaneous preterm vaginal deliveries , 25 women were induced and 20 women had vaginal delivery .

66 women had preterm deliveries , in which most of them iatrogenic preterm deliveries indicated in view of preeclampsia with severe features.

Statistical Analysis

Results are shown in Tables 1 to 4. Most of them were just referred for high blood pressure.

Renal and liver functions were deranged in 27% and 20% patients respectively (Table 2). Commonest mode of induction was with oral misoprostol. Thirty-two percent women were delivered by lower segment cesarean section (LSCS) and the indications were fetal distress (59.28%) followed by nonprogress of labor (12.5%), impending eclampsia with poor bishop score (18.75%) and breech in (9.38%). Average hospital stay was 6.32 ± 4.07 day. Hospital stay was less than three days, four to six days, seven to ten days and more than 10 days in 25, 29, 42, and four patients respectively. One patient had to stay for more than 20 days due to wound infection after cesarean section. Maternal complications were high as there was increased incidence of PPH (31%), APH (11%), renal dysfunction (9%) and pulmonary complications (12%).

There were pulmonary embolism in four women, Disseminated Intravascular Coagulation in two, HELLP and pulmonary edema in one each. Perinatal complications were also very high due to increased incidence of Prematurity (67.33%), low birth weight (71.43%), birth asphyxia (21.43%). Perinatal mortality was 36.73%, out of which 28.57% were still births and 8.16% babies died in NICU due to low birth weight and birth asphyxia.

Table 1: Distribution Of Patients As Per Demographic Profile And Other Parameters

Variable		Percentage (%)
Booking status	Booked	42%
	Unbooked	58%
Residency	Rural	84%
	Urban	16%
Education	Illiterate	39%
	Literate	61%
Age(years)	≤ 20 years	19%
	21-30 years	71%
	31-40 years	10%
Parity	0	73%
	1	17%
	2	10%
Gestation(weeks)	≤ 28	7%
	29-36	73%
	≥ 37	20%

Variable	Mean ± SD
Age (years)	24.04 ± 4.2
Gestation(weeks)	34.58± 4.08

Table 2: Distribution Of Patients As Per Investigations

Proteinuria %	Renal function tests (%)	Liver function tests (%)	Fundoscopy (%)
≤ + 1 4%	Blood urea ≥ 40 mg % 45%	SGOT > 100 U 20 %	Normal 94%
+2 23%	s. creatinine ≥ 1mg% 27%	SGPT > 100 U 20 %	Hypertensive changes 3%
≥ +3 73%	Oliguria 9%	Alkaline phosphatase > 400 IU 34%	Papilloedema 3%

Table 3 : Distribution According To Mode Of Induction And Delivery

MODE OF INDUCTION	INDUCED	48%	ORAL MISOPROSTOL	38%
			PGE 2 GEL	8%
			FOLEYS CATHETER	2%
	SPONTANEOUS	52%		
MODE OF DELIVERY			VAGINAL	56.04%
			INSTRUMENTAL	9.18%
			LSCS	34.65%

Table 4 : Maternal And Fetal Complications

Maternal complications		Fetal complications	
PPH	31 (31%)	Preterm	66 (67.33%)
Abruptio placentae	11(11%)	Low birth weight	70(71 .43%)
Renal dysfunction	9(9%)	Birth asphyxia	21(21.43%)
Pulmonary edema	8(8%)	IUD	28 (28.57 %)
Pulmonary embolism	4(4%)	IUGR	23(23.4%)
HELLP syndrome	2(2%)	Shifted to nusery	28 (28.57%)
DIC	2 (2%)	Perinatal mortality	36 (36.73%)
Maternal mortality	8 (8%)		

Table 5 : Preterm And Term Deliveries

	Induced	Spontaneous	Lscs
Preterm	25	20	26
Term	9	25	7

DISCUSSION

Despite advances in medical practice, pre-eclampsia has remained a leading cause of maternal mortality throughout the world. It is a common problem in developing countries because of illiteracy, poor antenatal care, lack of health awareness and poverty. The majority of the patients were unbooked (58%), were between 30- 37 weeks of gestational age (70%) and were primigravida (47 %) (Table 1). Ketz et al reported 70% women as primigravida.

Prematurity is commonly associated with severe pre-eclampsia. Most of the cases (66%) had preterm delivery. Out of 100 women with severe pre eclampsia , 77 women were presented below gestational age , out of which 11 women were continued till term with conservative management . Majority of the women had preterm deliveries , 20 women had spontaneous preterm vaginal deliveries , 25 women were induced and 20 women had vaginal delivery .

66 women had preterm deliveries , in which most of them iatrogenic preterm deliveries indicated in view of preeclampsia with severe features.

Findings were reported by Tuffnell et al (65.3%).9 Headache was the most common antecedent symptom present in 44% of the patients followed by epigastric pain (15%) and blurring of vision (10 %). Douglas et al4 reported headache, epigastric pain and blurring of vision in 50%, 19% and 19% patients respectively, results are almost similar to the present study. 56 % patients had LSCS (Table 4), while Tuffnell et al9 , Al Inizi et al10, Sibai et al11 reported cesarean section rate of 72.1%, 54% and 49% respectively which is much almost similar to present study.

The maternal complications are comparable with study of Begum et al12 which was conducted in Bangladesh, while other studies8,10,11,13 reported very less complications and this may be due to the reasons that these studies are conducted in developed countries where management is much better and patients come earlier to the hospital than the developing countries. The perinatal mortality reported by Tuffnell et al9 , Al Inzi et al10, Sibai et al11, and Douglas et al4 are 4.7%, 14.6%, 1.8% and 7.05% respectively. While in the present study the perinatal mortality was 36.73%, which is quite high which was attributed to the low birth weight and preterm complications.

In severe pre- eclampsia complications like renal dysfunction,

pulmonary edema and postpartum hemorrhage complicated as 4.08%, 2.04% and 10.20% respectively in patients .

Perinatal outcome was also much poorer in severe preeclampsia. Incidence of birth asphyxia was almost twice in eclampsia as compared to severe pre-eclampsia. 8 babies (16.33%) were shifted to NICU in severe pre-eclampsia (Table 4)

Preterm delivery often occurs in a pregnancy complicated by preeclampsia because the risk to mother and fetus of continuing the pregnancy to term outweighs the benefit. In our study, women with preeclampsia were more likely to deliver a preterm neonate than controls. The mean birth weight of neonates in our study born to women with preeclampsia was significantly less than that for neonates born to women without preeclampsia. However, when the preterm neonates were excluded, the mean birth weight of babies born to women with preeclampsia was still significantly lower than that of those born to normotensive women. Thus, the lower birth weight is more likely a reflection of the effect of preeclampsia on placental function and fetal growth rather than that of prematurity alone

CONCLUSION

There is a very high maternal and perinatal morbidity associated with severe pre-eclampsia in unbooked cases. Good antenatal care can prevent severe pre-eclampsia to a large extent.

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