Original Research Article

A cross-sectional study of feto-maternal outcome in cases of severe preeclampsia

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Abstract

Background: Hypertension in pregnancy complicates around 2-3% of pregnancies. The incidence of Pregnancy induced hypertension occurs is 8-10% among pregnant women in India.[16] In the western countries it accounts for approximately 2-5% of all pregnancies. The fetus of a preeclamptic women is prone to fivefold increase in mortality as compared with infants without the disorder. Preeclampsia is responsible for approximately 15% of all preterm births.[18] **Methods:** The study was carried out in the department of obstetrics and gynecology, at P.D.U medical college and hospital, Rajkot, Gujarat from 1 January 2018 to December 2018, a period of 1 year. During mentioned period pregnant women attending OPD of OBGY department P.D.U Medical College and Hospital Rajkot having following inclusion criteria was included in study .Total 100 pregnant women having severe preeclampsia was taken in study. **Results:** Most of the women were aged from 26 to 30 years (47%). The mean age was 27.85±5.7 years. Most of the women belonged to primi parity (45%).The most common clinical presentation was headache (40%) followed by nausea (25%), Vomiting (15%), blurring of vision (14%) and jaundice (6%).38% of the women were induced for labour.65% of the women had vaginal delivery and 35% of the women underwent LSCS. The most common indication for LSCS was Fetal distress (37%) followed by IUGR with fetoplacental insuffiency(23%).Most of the women delivered between 37 to 39 weeks (34%). The mean gestational age at delivery was 37.95±1.7 weeks.80% of the women had live birth, while Stillbirth was noted in 20%. 22% of the women developed complications and the most common complication was abruption (10%), Followed by DIC (4%), Eclampsia (3%), Renal failure (3%) and HELL Psyndrome(2%). 26% of the babies weighed between 1.500 to 1.999 kg followed by 1.000 to 1.499 Kg (23%) and 2.500 to 2.999 kg (20%). The mean birth weight was 1.750±685.8 kg. APGAR score of >7 was noted in 55% of the babies. APGAR score of <7 was noted in 25% of the babies. Requirement of NICU admission was noted in 47% of the babies and the most common cause of NICU admission was LBW (40%) followed by fetal distress (32%).Conclusion: Preeclampsia and eclampsia continue to be significant causes of maternal and fetal morbidity and mortality. Though prevention is not possible, it is important to recognise early warning symptoms and signs so that life threatening complications can be averted. Provision of quality antenatal health care services, increasing patient awareness about warning symptoms, investigations, timely delivery and intensive monitoring in the intrapartum and postpartum period have the potential to improve maternal and perinatal outcome. Education and empowerment of women and accessible health care especially to the socioeconomically deprived and rural population.

Key Words: Severe preeclampsia.

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INTRODUCTION

The spectrum of hypertensive disease that can complicate pregnancy is broad, ranging from "white coat" hypertension to gestational hypertension, chronic hypertension and preeclampsia to chronic hypertension with superimposed preeclampsia.[3] Eclampsia is the presence of new onset grandmal seizure in a woman with preeclampsia. It occurs in 18% intrapartum,38% antepartum and 44% in postnatal cases. [4] 10% of all pregnancies are complicated by preeclampsia.[5] It refers

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to the new onset of hypertension (systolic blood pressure ≥ 140 mm Hg or diastolic blood pressure ≥ 90 mm Hg) and proteinuria (≥ 3 gm protein in 24 hours urine specimen) after 20 weeks of gestation in a previously normotensive non proteinuric woman.[6] Preeclampsia is considered severe if the blood pressure is ≥ 160 mm Hg systolic or ≥ 110 mm Hg diastolic or proteinuria of 5 gm or higher in a 24 hours urine specimen or oliguria, cerebral or visual disturbances, pulmonary edema, impaired liver function or thrombocytopenia is present.[9] The etiology of preeclampsia is unknown: numerous models have attempted to explain its roles in the pathogenesis of immunology, cytokines, and growth factors, including tumor necrosis factor, endothelial damage, platelet dysfunction and genetics has been implicated in the pathogenesis of preeclampsia.[7,8] Preeclampsia is a leading cause of maternal and perinatal morbidity and mortality worldwide.[2] Preeclampsia and eclampsia accounts for 24% of all maternal deaths in India.[10] Abruptio placentae, and eclampsia account for majority of the maternal deaths.[11] Perinatal mortality is increased five-fold in patients of preeclampsia with iatrogenic prematurity being the main culprit.[12] Despite advances in medical practice, preeclampsia and its severe form still remains a leading cause of maternal and perinatal morbidity and mortality throughout the world. Hence The present study was conducted among pregnant woman having severe preeclampsia to find out risk factor and mode of delivery. The present study also evaluated feto-maternal outcome in cases of severe preeclampsia

METHODOLOGY

The study was carried out in the department of obstetrics and gynecology, at P.D.U medical college and hospital, Rajkot, Gujarat from 1 January 2018 to December 2018, a period of 1 year. During mentioned period pregnant women attending OPD of Obgy department P.D.U Medical College and Hospital Rajkot having following inclusion criteria was included in study .Total 100 pregnant women having severe preeclampsia was taken in study

INCLUSION CRITERIA

- Systolic BP ≥160 mm Hg and or diastolic BP ≥ 110 mm Hg
- ≥20 weeks gestation
- Proteinurea(+3,+4)

EXCLUSION CRITERIA

- < 20 weeks gestation,
- Eclampsia
- Preeclampsia(Proteinurea+1,+2)
- Chronic Hypertension.
- Renal Disease.
- Moderate/Severe Anemia.
- Chronic Liver Disease.
- Cardiac Disease.
- Thyroid Disease.
- Scarred Pregnancy.

After the enrollment, detailed demographic data, obstetric history and current pregnancy details were obtained by personal interview. These women were then subjected to clinical examination. The data obtained was recorded on the predesigned and pretested proforma.

OBSERVTIONS AND RESULTS

The present cross-sectional study was conducted for the period of one year from January 2018 to December 2018 in the department of obstetrics and gynaecology, P.D.U Medical college and Hospital Rajkot. A total of 100 pregnant women with blood pressure ≥160/110 mmHg suggestive of severe preeclampsia were enrolled.

Table 1: Distribution of women according to the maternal age in women with severe preeclampsia

Age Group(Years)	Number-100	Percentage(%)
≤ 20	05	5%
21 to 25	31	31%
26 to 30	47	47%
31 to 35	16	16%
≥36	01	1%
Total	**100**	**100**

Most of the women were aged from 26 to 30 years (47%). The mean age was 27.85±5.7 years.

Table 2: Distribution of women according to the parity in women with severe preeclampsia

Para	Number-100	Percentage(%)
1	45	45%
2	26	26%
3	15	15%
4	12	12%
5	2	2%
Total	**100**	**100**

- Most of the women belonged to primi parity (45%) followed by second para (26%)

Table 3: Distribution of women according to the gestational age at delivery in women with severe preeclampsia

Gestational Age(weeks)	Number-100	Percentage(%)
<32	30	30%
32-36	30	30%
37-39	34	34%
>40	06	06%
Total	**100**	**100**

Most of the women delivered between 37 to 39 weeks (34%). The mean gestational age at delivery was 37.95±1.7 week

Table 4: Distribution of women according to the clinical presentation in women with severe preeclampsia

Clinical presentation	Number-100	Percentage(%)
Headche	40	40%
Nausea	25	25%
Vomiting	15	15%
Blurring of vision	14	14%
Jaundice	06	06%
Total	**100**	**100**

The most common clinical presentation was headache (40%) followed by nausea (25%), Vomiting (15%), blurring of vision (14%) and jaundice (6%)

Table 5: Distribution of women according to the mode of delivery in women with severe preeclampsia

Mode of delivery	Number-100	Percentage(%)
Vaginal	65	65%
LSCS	35	35%

65% of the women had vaginal delivery and 35% of the women underwent LSCS.

Table 6: Distribution of women according to the onset of labour in women with severe preeclampsia

Onset of labour	Number-100	Percentage(%)
Induction	38	38%
Sponteneous	27	27%
LSCS	35	35%

38% of the women were induced for labour.

Table 7: Distribution of women according to the indications of induction of labour in women with severe preeclampsia.

Indication	Number-38	Percentage(%)
Severe preeclampsia	23	60.52%
Postdatism	06	15.78%
IUGR with severe preeclampsia	05	13.15%
IUD with severe preeclampsia	04	10.52%

Table 8: Distribution of women according to the indications for LSCS in women with severe preeclampsia

Indication of LSCS	Number-35	Percentage(%)
Fetal distress	13	37.14%
IUGR with fetoplacentalinsuffiency	08	22.85%
Failed induction	05	14.28%
Severe oligo	04	11.42%
Twins	03	8.57%
Primi breech	01	2.85%
NPOL	01	2.85%

The most common indication for LSCS was Fetal distress(37%)followed by IUGR with fetoplacental insuffiency (23%).

Table 9: Distribution of women according to the complications in women with severe preeclampsia

Complications	Number-100	Percentage(%)
HELLP syndrome	02	2%
Eclampsia	03	3%
Renal failure	03	3%
DIC	04	4%
Abruption	10	10%

22% of the women developed complications and the most common complication was abruption (10%), Followed by DIC (4%), eclampsia (3%), renal failure (3%) and HELLP syndrome(2%)

Table 10: Distribution of neonates according to the birth weight in women with severe preeclampsia

Birth weight(Grams)	Number-100	Percentage(%)
0.500-0.999	03	3%
1.000-1.499	23	23%
1.500-1.599	26	26%
2.000-2.499	15	15%
2.500-2.599	20	20%
3.000-3.499	08	8%
>3.500	05	5%

26% of the babies weighed between 1.500 to 1.999 kg followed by 1.000 to 1.499 Kg (23%) and 2.500 to 2.999 kg (20%). The mean birth weight was 1.750±685.8 kg.

Table 11: Distribution of women according to the neonatal outcome born to the women with severe preeclampsia

Neonatal Out come	Number-100	Percentage(%)
Live birth	80	80%
Still birth	20	20%

80% of the women had live birth, while Stillbirth was noted in 20% of women.

Table 12: Distribution of neonates according to the APGAR score born to the women with severe preeclampsia

Apgar score	Number-100	Percentage(%)
<7	25	25%
>7	55	55%
SB	20	20%

APGAR score of >7 was noted in 55% of the babies. APGAR score of <7 was noted in 25% of the babies.

Table 13: Distribution of neonates according to the NICU admission born to the women with severe preeclampsia

NICU admission	Number-100	Percentage(%)
Yes	47	47%
No	53	53%

Requirement of NICU admission was noted in 47% of the babies.

Table 14: Distribution of neonates according to the indication of NICU Admission born to the women with severe preeclampsia

Causes	Number-47	Percentage(%)
Low birth weight	19	40.42%
Fetal distress	15	31.91%
MSL	09	19.14%
Prematurity	04	8.5%

- The most common indication of NICU admission was LBW (40%) followed by fetal distress (32%)

DISCUSSION

In the present study age ranged between 18 to 38 years. More than one third of the women were aged from 26 to 30 years (47%). The mean age was 27.85±5.7 years. The frequency of severe preeclampsia peaked in young women. Though advanced maternal age has been found to be an independent risk factor for preeclampsia,another Indian study from Tamil Nadu by Abidha PM *et al...* where out of 1900 women screened 93 were detected with preeclampsia. Out of 93 patients with preeclampsia, 46.23% of the women were aged between 21–25 years. In contrast to these observations Curial-Balsera E *et al...*[18] in their study to describe the incidence and clinical and epidemiological profile of patients with severe preeclampsia admitted to intensive care in Spain reported mean age as 30.47±5.7 years which was high compared to the present study and a study by Abidha PM *et al...*[23] In this study 45% of the women belonged to primipara ,para 2, para 3, para 4 and para 5 was noted in 26%, 15%, 12% and 2% of the women respectively. These findings suggest that, severe preeclampsia was widely prevalent among women with primipara. This observations was similar to those reported in most existing literature that preeclampsia is common among the primigravida. Hernandez *et al...*[24] in his study found that the risk of preeclampsia was 4.1% in the first pregnancy and 1.7% in later pregnancies overall. The risk for multiparous women without a history of preeclampsia was around 1%. In the present study the most common clinical presentation was headache (40%) followed by nausea (25%), Vomiting (15%), blurring of vision (14%) and jaundice (6%).In this study 38% of the women were induced for labour while 27% of the women had spontaneous labour. In contrast Ngwenya S.[40] reported higher rate of induction (58%). In the present study more than half (65%) of the women had vaginal delivery and (35%) of the women underwent LSCS. The most common indication for LSCS was fetal distress (37%) followed by IUGR with Fetoplacental insuffiency(23%). In contrast a retrospective descriptive cohort study by Ngwenya S.[25] in a tertiary teaching referral government hospital in a low-resource setting majority of the patients were delivered by cesarean section (78.5%) due to the seriousness of the condition, and in most cases, there would be delayed presentation. In this study 22% of the women developed complications. The most common complication was abruptio placenta (10%) followed by DIC (4%). a retrospective descriptive cohort study by Ngwenya S.[25] who reported complications among 14.9% of the women and HELLP syndrome (9.1%) was the most common major complication the other complications were abruption placenta (2.5%), acute renal failure (1.7%), DIC (0.8%) and pulmonary oedema (0.8%). In the present study HELLP syndrome was noted among 2% of the women with severe preeclampsia. In this study majority of the women had live births (80%),Still birth was noted in 20% of the women. These observations were consistent with a retrospective descriptive cohort study by Ngwenya S.[25] where the rate of live births was 78% there were six sets of twins, but, rate of stillbirth was very high that is 22% due to stillbirths. In a study by Abidha PM *et al...*[23] from Tamil Nadu India, the rate of stillbirths was 10%. In this study Most of the babies delivered between 37 to 39weeks (34%). The mean gestational age at delivery was 37.95±1.7 weeks. In a study by Ngwenya S.[25] the mean gestational age was 33.4±4.4 weeks gestation which was slightly low compared to the present study. The babies weighed between 1.500 to 1.999 kg (26%)followed by 1.000 to 1.499 Kg (23%), 2.500 to 2.999 kg (20%). The mean birth weight was 1.750±685.8 g. The mean birth weight observed in the present study was considerably Low compared to a study by Ngwenya S.[25]where the mean birth weight was 1,906 ±785.8 g. Majority of the babies that is 84.01% of the babies required resuscitation. In this study Majority of the neonates had apgar score of > 7 (55%). In a study by Abidha PM *et al...*[23] from Tamil Nadu India, 10% of the neonates had Apgar score of less than 5. In this study Requirement of NICU admission was noted among 47% of the babies and the most common indication of NICU admission was LBW (40%) followed by fetal distress (32%). In contrast a study by Ngwenya S.[25] reported higher rate of NICU admission as 54.5% of the babies were admitted to NICU. Unlike the present study, a study by Ngwenya S.[25] The vast majority of those admitted (81.5%) were due to a combination of prematurity, low birth weight, and respiratory distress syndrome (RDS), and 18.5% were due to low Apgar scores. Out of the total number (127) of babies born, 35 (27.6%) were early neonatal deaths which was high compared to the present study.

CONCLUSION

Preeclampsia and eclampsia continue to be significant causes of maternal and fetal morbidity and mortality. Though prevention is not possible, it is important to recognise early warning symptoms and signs so that life threatening complications can be averted. Provision of quality antenatal health care services, increasing patient

awareness about warning symptoms, investigations, timely delivery and intensive monitoring in the intrapartum and postpartum period have the potential to improve maternal and perinatal outcome. Education and empowerment of women and accessible health care especially to the socioeconomically deprived and rural population.

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