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Original Research Article

A RETROSPECTIVE STUDY ON THE MATERNAL AND PERINATAL OUTCOME IN SEVERE PREECLAMPSIA AT A TERTIARY CARE TEACHING HOSPITAL OF THE ASPIRATIONAL DISTRICT NUH

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ABSTRACT

Background: Severe preeclampsia is one of the most common cause of both maternal and perinatal morbidity and mortality. The clinical course of severe preeclampsia is progressive and is characterised by continuous feto-maternal deterioration that can ultimately be stopped by terminating the pregnancy.

Materials and Methods: A Retrospective study was conducted from 1st January 2017 to 31st December 2019 at SHKM, Government Medical College & Hospital, Nuh, Haryana to determine the maternal and perinatal outcome in the patients of Severe preeclampsia by reviewing the admission registration case sheets, delivery registration books, intensive care unit (ICU) admission records, and neonatal intensive care unit (NICU) admission registration records of the patients with severe preeclampsia. A structured data collecting proforma was used to abstract the relevant data from the included patients case sheets starting from the onset of signs and symptoms of severe preeclampsia till the time of delivery.

Results: There were 286 patients of severe preeclampsia during our retrospective study period of 3 years. Majority of these patients were Primigravida (55.94%), unbooked (94.40%), had rural backround (84.96%) and belonged to the age group of 20 to 30 years (77.27%). In our study the common mode of delivery was vaginal delivery (56.29%) and 43.70% patients had Lower segment cesarean section. The common maternal complications of severe preeclampsia observed were Postpartum haemorrhage (36.01%), Eclampsia (32.16%), Antepartum haemorrhage due to Abruptio placentae (22.37%), Acute Renal Failure (6.99%), Pulmonary oedema (2.79%), HELLP syndrome (4.19%), DIC (1.74%), Cortical blindness (1.39%) and maternal death (8.04%). There was increased incidence of prematurity (62.93%), low birth weight (34.96%), NICU admission (30.69%), Early neonatal death (19.93%), intrauterine fetal death (16.08%) and the Perinatal mortality (36.01%).

Conclusion: Provisions of regular antenatal health care services, timely referral of patients to higher centers, the early use of antihypertensive drugs, timely delivery & intensive monitoring in the intrapartum and postpartum periods could prevent the maternal and perinatal complications of severe pre-eclampsia.

Keywords: Retrospective study, Severe preeclampsia, maternal outcome, perinatal outcome.

INTRODUCTION

Despite advances in medical practice, Hypertensive disorders in pregnancy still remain the leading cause of maternal and perinatal morbidity and mortality throughout the world. Hypertensive conditions during pregnancy are responsible for nearly 18% of all maternal fatalities worldwide.[1] In India,

hypertensive disorders rank as the third leading cause of maternal mortality.[2] The perinatal mortality ranges from 14.6% to 47.4%.[3,4] Preeclampsia is designated as severe if there are signs of multi-organ involvement, such as pulmonary edema, reduced urine output,low platelet count, elevated liver enzymes with pain in the right upper abdomen, or ongoing central nervous system symptoms like headaches, altered mental status, blurred vision or blindness. Eclampsia,is a potentially life-threatening hypertensive disorder of pregnancy,which is marked by the occurrence of tonic-clonic seizures or coma during the latter half of pregnancy in the preeclampsia patients and is not connected to other conditions such as epilepsy or pre-existing brain disorders.[5] The incidence of eclampsia can be reduced by better antenatal care, diagnosis and treatment of severe pre eclampsia.[6,7] It complicates 5-10% of all pregnancies and is a primary cause of maternal and neonatal morbidity and mortality.[8,9] The definitive treatment for severe preeclampsia and eclampsia is delivery, as the condition can lead to deterioration in both maternal and fetal health. In developing countries like India, the high incidence of maternal and perinatal morbidity and mortality in the patients of severe preeclampsia. is largely attributed to illiteracy, inadequate antenatal care, lack of health awareness and resources in the rural areas. This Retrospective study was conducted to determine the maternal and perinatal outcome in the patients of severe preeclampsia at SHKM, GMC, Nuh which is considered as one of the aspirational districts of India.

MATERIALS AND METHODS

A Retrospective study was conducted from 1st January 2017 to 31st December 2019 at SHKM ,Government Medical College & Hospital, Nuh, Haryana to determine the maternal and perinatal outcome in the patients of severe preeclampia by reviewing the admission registration case sheets, delivery registration books, intensive care unit (ICU) admission records, and neonatal intensive care unit (NICU) admission registration records of the patients with severe preeclampsia. A structured data collecting proforma was used to abstract the relevant data from the included patients case sheets starting from the onset of signs and symptoms of severe preeclampsia till the time of delivery.

Inclusion Criteria: All pregnant women with severe preeclampsia after 20 weeks of gestation who had delivered at SHKM Government Medical College and Hospital, Nuh over the retrospective study period of 3 years. Severe Preeclampsia is considered if after 20weeks of gestation there is sustained rise in blood pressure to the level of ≥160 mm Hg for systolic and ≥ 110 mm Hg for diastolic on two blood pressure readings taken 15 minutes apart with or without any of the following features: New onset unremitting headache/visual disturbances, Pulmonary oedema, Epigastric or right upper quadrant pain, Persistent oliguria(<500ml/24hrs), Progressive renal insufficiency(serum creatinine>1.1mg/dl) in absence of other renal disease, Deranged LFT > 2× normal: Elevated liver enzymes (ALT or AST >70IU/L) in absence of other liver disease., Thrombocytopenia(platelet count <1,00,000/microliter).[10]

Exclusion Criteria: All antenatal women with associated medical complications like – Preexisting Hypertension, severe anaemia, Diabetes, Epilepsy, Cardio-vascular & Renal diseases.

Data Collection: A structured data collecting proforma was used to abstract Maternal and Perinatal outcome variables from the included patients case sheets starting from the onset of signs and symptoms of severe preeclampsia till the time of delivery. Maternal outcome variables: -Eclampsia, HELLP syndrome, Antepartum Haemorrhage, Post partum hemorrhage, Pulmonary oedema, Disseminated Intravascular Coagulopathy, Acute Renal Failure, Intra Cerebral Haemorrhage, Cortical blindness and Maternal death.

Perinatal outcome variables: Prematurity, Low Birth Weight, Low Apgar Score, Respiratory distress syndrome, Meconium aspiration syndrome, NICU admission, Early Neonatal death, Intra Uterine Fetal Death.

RESULTS

Table 1: Categorization of Severe Preeclampsia cases as per Demographic profile

Demographic profile	n=286	Percentage(%)
Age(Years)		
<20	23	8.04
20 -30	221	77.27
30-40	38	13.28
>40	4	1.39
Parity		
Primigravida	160	55.94
Multigravida	74	25.87
Grandmultigravida	52	18.18
Residence		
Urban	43	15.03
Rural	243	84.96
Education		
Literate	19	6.64

Illiterate	267	93.35
Booking Status		
Booked	16	5.59
Unbooked	270	94.40

According to the data presented in Table 1, majority of the patients belonged to the age group of 20 to 30 years(77.27%) ,unbooked (94.40%), illiterate(93.35%) and resided in the rural areas (84.96%).

Table 2: Categorization of Severe Preeclampsia cases as per Mode of Delivery

Mode of Delivery	n=286	Percentage(%)
Vaginal	161	56.29
Lower Segment Cesarean Section	125	43.70

In our study 56.29% patients had Vaginal delivery and 43.70% patients had Lower Segment Cesarean Section.

Table 3: Categorization of Severe Preeclampsia cases as per Maternal Complications

Maternal Complications	n=286	Percentage(%)
Postpartum Haemorrhage	103	36.01
Eclampsia	92	32.16
Placental Abruption	64	22.37
Acute Renal Failure	20	6.99
Pulmonary Oedema	8	2.79
HELLP Syndrome	12	4.19
Cortical blindness	4	1.39
DIC	5	1.74
Maternal Death	23	8.04

According to the data depicted in Table 3, Postpartum Haemorrhage was present in the majority of patients (36.01%), followed by Eclampsia in 32.16%, Placental Abruption in 22.37%, Acute Renal Failure in 6.99%, Pulmonary Oedema in 2.79%, HELLP Syndrome in 4.19%, DIC in 1.74%, Cortical blindness in 1.39% and Maternal Death in 8.04% patients of severe preeclampsia.

Table 4: Categorization of Severe Preeclampsia cases as per Perinatal Complications

Perinatal Complications	n=286	Percentage (%)
Prematurity	180	62.93
Low Birth weight	100	34.96
Respiratory distress syndrome	123	43.00
Meconium aspiration syndrome	74	25.87
NICU admission	86	30.69
Early Neonatal Death	57	19.93
Intrauterine death	46	16.08

The data in the Table 4: illustrates that the majority of patients (62.93%), had preterm delivery, Respiratory distress syndrome was observed in 43%, Meconium aspiration syndrome in 25.87%, NICU admission was done in 30.69%, Early Neonatal Death in 19.93% Intrauterine death in 16.08% and Perinatal mortality in 36.01%.

DISCUSSION

Hypertensive disorder in pregnancy(HDP) is one of the leading causes of maternal and perinatal morbidity and mortality throughout the world despite of advances in the medical practices. This Retrospective study was done to find the maternal and perinatal outcome in 286 patients of severe preeclampsia. In our study, maximum (77.27%) cases were in the age group of 20 to 30 years. Similar findings were reported by Patnaik et.al,2019,[11] and Saxena et.al,2016,[12] with approximately 70% of women in their studies falling within the 20–30 years age group.

A majority of our study population was illiterate (93.35%), unbooked (94.40%), and residing in rural areas (84.96%). These findings are consistent with those reported by Singhal et.al,2009,[13] who observed the incidence of unbooked and rural residence to be 82% and 84% respectively. Also, the incidence of severe preeclampsia and eclampsia was higher among unregistered patients (60.71%) as reported by Jayshree et.al,2023.[14]

In our study, 55.94 % were Primigravida. This finding is in good agreement with the studies done by Gawde et al.,2014,[15] Singh et al., 2016,[16] and Ahmed et al., 2014,[17] as in their studies primigravida cases observed were 48%, 58.9%, and 60% respectively. Similarly, Swamy et al., 2012,[18] and Pillai et al., 2017,[19] conducted studies in which it was observed that respectively 50% and 61% of their study populations belonged to primigravida group.

In our study 56.29% patients had Vaginal delivery and 43.70% patients had Lower Segment Cesarean Section(58%).The high rate of vaginal delivery observed in our study was due to the fact that there was preponderance of grandmultipara and multipara

in our study population. However, these findings do not align with the observations reported by Jayshree et al. (2023), [14] Pillai SS et al.,2017,[19] and Akaba et al., 2022,[20] which concluded that caesarean sections were performed in the majority of cases (57.14%), (64.54%), and (71.2%) respectively.[14,19,20]

In our study, Postpartum Haemorrhage was present in the majority of patients (36.01%), followed by Eclampsia in 32.16%, Placental Abruption in 22.37%, Acute Renal Failure in 6.99%, Pulmonary Oedema in 2.79%, HELLP Syndrome in 4.19%, Cortical blindness in 1.39%, DIC in 1.74% and Maternal Death in 8.04% patients of severe preeclampsia. A study done by Jayshree et.al,2023,[14] also reported that Postpartum Haemorrhage (16.07%) was the most common maternal complication observed followed by Eclampsia (9.82%). However these findings are not in concordance with the studies done by Aabidha et al.,2015,[21] and Sowmya et al.,2023,[22] as they reported that the most common maternal complication observed was antepartum hemorrhage (13.9%) and HELLP Syndrome (32.4%) respectively.

The majority of the patients in our study had preterm delivery (62.93%). Similar results were observed in the studies done by Tuffnell et al., 2005,[23] and Singhal et al.,2009,[13] which reported that respectively 65.3% and 66% patients had preterm delivery. Similarly Patel AJ et al.,2021, [24] observed a higher preterm delivery rate of 68.93% in their study. In our study NICU admission was done in 30.69% which is less then the NICU admission rate (48%) observed in the study done by Mude et al.,2025.[25] In our study Perinatal mortality observed was 36.01%, which included Intra uterine fetal death in 16.08% and Early neonatal death in 19.93% cases. These findings are in good agreement with the observations reported by Shaikh S et al.,2003,[26] which showed and Perinatal mortality of 38.6%, Intrauterine fetal death in 14, Early Neonatal Death in 18 cases. Neonatal deaths were mostly due to prematurity and its complications.

CONCLUSION

Severe preeclampsia can lead to life threatening maternal and perinatal complications like Eclampsia, Abruptio placentae, HELLP Syndrome, Acute Renal Failure, Pulmonary oedema, Intra Uterine Fetal Growth Restriction, Prematurity and its complications. Regular Antenatal Care, Early detection of high risk pregnancy by using Preeclampsia Screening tools like Gestosis Score, Early initiation of treatment of pre eclampsia, timely referral to tertiary care center, well-planned delivery and intensive care of severe preeclampsia patients during the antenatal, intranatal and postnatal phases can lead to improvement in the maternal and perinatal outcome.

Ethical approval was obtained from the Institutional Ethical Committee. Confidentiality of the data was maintained.

No conflict of interest.

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