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Maternal and Foetal Outcomes in Early Onset Preeclampsia - A Single Institution Retrospective Study

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Abstract: ***Background: Preeclampsia is a common condition that affects both maternal and foetal outcomes alike. Especially in developing countries, several lives are lost due to this condition. Early onset preeclampsia is seen prior to 34 weeks of gestation, where there is a careful balance between foetal lung maturation and maternal complications. Hence, this study aimed at studying the maternal and foetal outcomes in early onset preeclampsia. Methods: 100 patients who met the inclusion criteria were included in the study (ages 18-35, with new onset of preeclampsia between 20-34 weeks of pregnancy). Detailed history, examination and investigations were done. Details regarding the treatment and the mode of termination are noted. Results: in 100 patients, 72% were primigravida. The most common age group was 21-30 years, with 45% belonging to this group. In 86.2%, maternal causes were the most common indication for the termination of pregnancy. Of these, 68.4% had ceasarian section, while the remaining underwent vaginal delivery. Out of 98 babies 60 (60%) had complications. There were 16 neonatal deaths and 4 still birth with perinatal mortality rate of 20%. 38 (38%) women of the total study group complication. There were 6 (6%) maternal death. Conclusion: EOPE is associated with significant maternal and fetal complications Decision regarding termination of pregnancy has to be taken based on both maternal and fetal factors.***

Keywords: Early onset preeclampsia, Imminent Eclampsia, Expectant management, maternal outcome, fetal outcome, Perinatal mortality

1. Introduction

Preeclampsia is a common pregnancy related disorder, which has multisystem involvement and is progressive in nature (1). It is characterized by recent onset of hypertension and proteinuria, with or without significant end organ dysfunction during the end of pregnancy or immediate post-partum. The disorder is caused by placental and maternal vasculardys function and always resolves after delivery (2). The incidence in pregnancy and post-partum period is up to 57%, causing significant mortality and morbidity. Preeclampsia is considered early onset hypertension and proteinuria occur before 34 weeks of pregnancy. The specific etiology of preeclampsia is still unclear, and the combination of known risk factors for preeclampsia (such as women's age, body weight, previous preeclampsia, gestational hypertension, and first pregnancy) can only predict 30% of women who develop preeclampsia in clinical practice. It is a still considered a cause of maternal mortality, accounting to up to 17% deaths (3). Preeclampsia is associated with risk of acute renal failure, cerebrovascular accidents, abruptio placenta, DIC and cardiovascular complications. Hence, early diagnosis and management is vital in preventing morbidity and mortality. In case of severe cases, delivering the foetus is the only solution to revert the complications. However, this accounts for increased perinatal morbidity and mortality due to prematurity. A careful balance between the foetal and maternal life is vital to ensure safety of both (4). Hence, we aimed to conduct this study the impact of early onset pre-eclampsia on maternal and foetal outcomes.

2. Methods

This is a retrospective observational study that was conducted in the department of obstetrics and gynecology between January 2022 to June 2022. All necessary ethical clearances were sought prior to the study.100 patients who met the inclusion criteria were included in the study (ages 18-35, with new onset of preeclampsia between 20-34 weeks of pregnancy). From case records, detailed history, examination and investigations were done. Details regarding the treatment and the mode of termination were noted.

All this data was recorded in a semi-structured pro forma, and then entered into an MS excel spreadsheet.

Statistical analysis-categorical variables were represented as mean, median and mode. Interquartile range and ratios were calculated where necessary. Data was analysed using student's t test. The difference was considered statistically significant if the p value was <= 0.05.

3. Results

This study included a 100 participants with early onset pre-eclampsia. In those 100 patients, 72% were primigravida. The most common age group was 21-30 years, with 45% belonging to this group. Mean gestational age at diagnosis was 31 weeks with a range of 25 to 34 weeks. Most of the women belonged to social economic class IV and V.

More than half the women underwent elective termination after 32 weeks. In 86.2%, maternal causes were the most common indication for the termination of pregnancy. Of these, 68.4% had caesarian section, while the remaining underwent vaginal delivery. Most common cause being imminent eclampsia changes.

Expectant management was seen in 12.8% cases, with a mean period of 23.4 +/-3.45 days. There was no maternal death in patients who were managed expectantly but 4 patients had morbidity and there were 2 fetal mortality and 9 morbidity in the expectant management group.

Out of 100 patients, 64 (64%) women received Mgs04, out of which 4 developed seizures 3 of them had Post partum eclampsia. 20 (20%) women did not received Mgs04, out of which 11 (11%) developed seizure. Mgs04 was given in

view of imminent symptoms and signs. In 16 cases Mgs04 was given in view of high BP without imminent symptoms.

Mean birth weight was 1.43 kg. Out of 100 babies 60 (60%) had complications. There were 16 neonatal deaths and 4 still birth with perinatal mortality rate of 20%. 38 (38%) women of the total study group complication. Out of the total 150 babies, 90 (60%) babies had complication. 16.6% were IUFDs, majority were in women who were referred as IUFDs. Cause of IUFD being abruption in majority of cases. 94 babies were born alive. All were preterm. Major cause for neonatal morbidity and mortality were prematurity and Respiratory distress syndrome. Out of 21 babies who had RDS, 13 (62%) did not receive steroids and 8 (38%) received steroids. Neonatal ICU admission was needed in 90% of babies. Neonatal deaths were 16 (10.6%) Eclampsia and abruption were higher in the expectant management group. There were 6 (6%) maternal death. Mean postpartum hospital stay was 16 days.

Fetal morbidity and mortality was found to be high at early gestational age, 34.4% perinatal death at 20-28 weeks where as it is 8% at 32-34 weeks. RDS was high between 20-28 and 28-32 weeks, 30.7% and 12.7% respectively. P value < 0.05, statistically significant. There was positive correlation between gestational age at delivery and fetal morbidity and mortality.

There is rapid fall in death rate and perinatal morbidity as birth weight increases. OND was 100% in birth weight <1kg where as there was no perinatal death in birth weight >2 kg. p value is <0.001 statistically significant. There was a positive correlation between birth weight and outcome

4. Discussion

Preeclampsia affects both mother and neonate. It is one of the leading causes of maternal and fetal morbidity and mortality. Sixty (60%) of the women in the study group were in the age group of 21 to 30 years, which correlates with the studies of Moodley83 in which the mean age was 26 years.

In studies done by Brown MA and Buddle ML (3), D. R. Hall (4) the mean age was 26 years. In our study mean age was 26years.

Preeclampsia is common in first pregnancy. More than half the women in this study were Nulliparous, 99 (66%). Brown MA and Buddle ML (3) said preeclampsia is predominant in nulliparous.

In a study by Anna w'ojtowicz et al. (5) showed that most common risk factor for pre eclampsia is primiparity 73%. In a study by Gomathy et al (6), 53.3% of primiparous women had EOPE.

In a study by Frusca et al. (7) in cases of previous history of preeclampsia 4% had eclampsia and 42% had EOPE.

In a study by Lopez-Liera and Horta (8) showed that with EOPE, small for gestational age infants were more common 42%

Most of the women underwent termination of pregnancy at 32-34 weeks, 84 (56%). In the study by D. R. Hall (4) GA at the time of delivery was found to be 32-34 weeks. Apgar was found to be improving with increasing gestational age.

5. Conclusion

EOPE is associated with significant maternal and fetal complications Decision regarding termination of pregnancy has to be taken based on both maternal and fetal factors. Termination should be done irrespective in case of severe uncontrolled blood pressure with of fetal maturity complications. In selected cases expectant management in a tertiary care center can limit morbidity and mortality.

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