Original Article

Eclampsia and Perinatal Outcome: A Retrospective Study in a Teaching Hospital

OBG & GYN Section

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ABSTRACT

Background: Eclampsia is associated with devastating maternal and foetal complications.

Aims: To determine the perinatal mortality rate in eclamptic women. To assess the perinatal outcome with respect to time between first convulsion and delivery, time of treatment and delivery .To assess the perinatal outcome and mode of delivery.

Setting and Design: Eclamptic women admitted to the labour ward of Shri BM Patil Medical College Hospital and Research Center, Bijapur, Karnataka, India from 1.1.2001 to 31.12.2010. Clinic data along with the results of the investigations were collected and analysed.

Results: The study comprised of 98 pregnant women with eclampsia and gestational age of more than 28 weeks who satisfied the inclusion and exclusion criteria. The total number of babies delivered was 100. The perinatal death rate was 350/1000. Perinatal mortality was high in patients who had a systolic Blood Pressure of ≥160mm of Hg, a diastolic Blood Pressure of ≥110mm of Hg, babies who weighed less than 2 kgs and urine albumin>2+. Perinatal mortality was low in those patients who had delivered within 6 hours of convulsion, within 6 hours of commencement of treatment, babies delivered by caesarean section.

Conclusion: Timeliness in the management of these cases can reduce the perinatal mortality.

Key Words: Eclampsia, Perinatal outcome, Cesarean section

KEY MESSAGE

- Early treatment and delivery of eclamptic patients improves perinatal outcome

INTRODUCTION

Preeclampsia that is complicated with generalized tonic-clonic convulsions is termed eclampsia. Eclampsia is associated with devastating maternal and foetal complications.

The incidence of eclampsia is decreasing in the developed countries; however the incidence has been the same in the developing countries. In India the incidence of eclampsia has been quoted as 1.56% [1]. Majority of the cases of eclampsia are the patients who have not received proper medical attention during their antenatal period [2]. Eclampsia is an acute obstetric emergency and swift treatment and prompt decision making is required to get the best maternal and foetal outcome.

Perinatal mortality has been as high as 59/1000 [3] to 214/1000 [4] and morbidity as high as 56% [5]. The present study aims to determine the factors affecting the perinatal outcome of eclamptic mothers.

AIMS

- To determine the perinatal mortality rate in eclamptic women
- To asses the perinatal outcome with respect to time between first convulsion and time of treatment and delivery
- To asses the perinatal outcome with respect to mode of delivery in eclamptic women.

SETTING AND DESIGN

The study was conducted in BLDE University's Shri BM Patil Medical College Hospital and Research Center, Bijapur, Karnataka, India. Bijapur districts considered as a poor performer as it lags behind in female literacy & safe delivery, has a significantly high number of married girls under 18 years and a high birth order. The teaching hospital is a tertiary care center available in this region. The data was collected from the medical records of all the patients included in the study available at the hospital for the duration of ten years.

INCLUSION CRITERIA

All pregnant women presenting with antepartum and intrapartum eclampsia who were admitted to the labor ward of Shri BM Patil medical College Hospital and Reasearch Center, Bijapur, Karnataka, India from 1.1.2001 to 31.12.2010

EXCLUSION CRITERIA

- Post partum eclampsia
- Foetal weight less than 1000gms.
- Gross congenital anomalies
- Diabetes mellitus
- Chronic medical diseases

RESULTS

A total of 5387 patients delivered at Shri BM Patil medical College Hospital and Research Center from 1.1.2001 to 31.12.2010. The incidence of eclampsia in this hospital is 1.82%. 98 patients who fulfilled the inclusion criteria was presented with antepartum or intra partum eclampsia. All these patients were treated with Magnesium sulphate by Prichards regime. There were 322 perinatal deaths during the study period, of which 35 (10.86%) were due to eclampsia. Of the 98 patients, 91 were unbooked cases and 7 were booked cases. 53 cases were referred from other hospitals and 43 cases were unreferred. 87 patients did not have regular antenatal care. 73 patients were primigravidas, 11 patients were gravida 2 and 14 patients were gravdia 3 or more. 49 cases were 20 or less years old, 46 were between the age group 21-30years and 3 patients were between the age group 31-40 years.

Of the 98 patients, two had twin deliveries. The total number of babies delivered was 100. Of these patients, 10 patients was presented with intrauterine death. 15 patients who had presented with live fetuses, had fresh still births and 10 patients had early neonatal deaths. The overall perinatal death rate was 350/1000. Sixty-five babies were in good condition at discharge.

[Table/Fig-1] shows the relationship between the number of convulsions and the perinatal death. 80 patients had five or less than five convulsions.

[Table/Fig-2] correlates the birth weight and perinatal mortality. The perinatal mortality was lowest for babies of ≥2.5kg.

[Table/Fig-3] shows the relationship between the time since the first convulsion and delivery.

Patients who came to the hospital within 6 hours of a convulsion had the least number of perinatal deaths.

[Table/Fig-4] shows the relationship between commencement of treatment and delivery. The perinatal deaths were the least with those patients who delivered within 6 hours of commencement of treatment.

No. of Convulsions	No. of Patients	Perinatal Deaths	%
≤5	80	29	36.25
6-10	17	6	35.29
>10	1	–	–

[Table/Fig-1]: Relationship between the number of convulsions and the perinatal death

Birth Weight	No. of Patients	Perinatal Death	%
≥2.5kg	22	6	27.27
2-2.5kg	37	11	29.72
1.5-2kg	24	10	41.66
1-1.5kg	17	8	47.05

[Table/Fig-2]: Relationship between birth weight and perinatal mortality

Time Since Convulsion and Delivery	No. of Patients	Perinatal Death	%
<6HRS	11	2	18.18
6-11HRS	33	11	33.33
12-17 HRS	20	6	30
≥18HRS	34	16	47.05

[Table/Fig-3]: Relationship between the time since the first convulsion and delivery

[Table/Fig-5] show the relation of urine albumin done by dipstick method, on admission to the perinatal outcome. Perinatal deaths were more in those patients who had urine albumin>2+

[Table/Fig-6] correrlates the systolic and diastolic blood pressure to the perinatal outcome.

The perinatl deaths were higher in those patients with a systolic BP of ≥160 mm of Hg and a diastolic BP ≥110 mm of Hg

[Table/Fig-7] shows the relation between type of delivery and perinatal outcome. The perinatal deaths were higher in the vaginal delivery group. Of the 61 vaginal deliveries, 10 patients presented with intrauterine death. Of the remaining 51 patients of eclampsia 13 of these patients had perinatal deaths (25.49%). 32 patients delivered by cesarean section of which 10 patients were given a trial for vaginal delivery. 22 patients were taken up for LSCS without a trial, 18 (81.81%) had live babies on day 7 after birth and 4 (18.18%) had perinatal death. Forceps were applied in three cases, all of which had intra uterine death. There has been an upward trend for caesarean section over vaginal delivery for eclampsia patients in our institute in the recent years.

Uric acid and perinatal outcome. In 5 cases, there is no record of uric acid level, hence 93 cases have been studied.

[Table/Fig-8] shows the relation between uric acid level and perinatal outcome. Perinatal death rate was similar in all ranges of uric acid levels.

Time Since Treatment and Delivery	No. of Patients	Perinatal Death	%
<6HRS	43	11	25.58
6-11HRS	27	10	37.03
≥12 HRS	28	14	50

[Table/Fig-4]: Relationship between since commencement of treatment and delivery

Albumin	No. of Patients	Perinatal Death	%
0	11	4	36.36
+1	26	7	26.92
+2	25	7	28
+3	23	11	47.82
+4	13	6	46.15

[Table/Fig-5]: Relation of urine albumin and perinatal outcome

BP	No. of Patients	Perinatal Death	%
SYSTOLIC BP≥160 mm of Hg	57	25	43
SYSTOLIC <160 mm of Hg	41	10	24.39
DIASTOLIC BP≥110 mm of Hg	54	23	42.59
DIASTOLIC BP< 110 mm of Hg	44	12	27.27

[Table/Fig-6]: Relationship between Blood pressure and perinatal outcome

Type of Delivery	No. of Patients	Perinatal Death	%
Vaginal Delivery	61	23	37.70
Forceps	3	3	100
Ventouse	2		
Cesarean Delivery	32	9	28.12

[Table/Fig-7]: Relationship between type of delivery and perinatal outcome

Uric Acid Level in mEq/dl	No. of Patients	Perinatal Death	%
<5.5	29	11	37.93
5.6-7	30	10	33.33
≥7.1	34	13	38.23

[Table/Fig-8]: Relation between Uric Acid and Perinatal Outcome

Neonatal complication	No. of cases	%
Birth Asphyxia	26	26%
Prematurity	17	17%
Meconium stained amniotic fluid	31 (3 cases of MAS)	31%
Sepsis	4	4%
Jaundice	22	22%

[Table/Fig-9]: Neonatal Complications

[Table/Fig-9] shows the neonatal complications. Birth asphyxia was the major complication in our study.

DISCUSSION

Eclampsia is a devastating complication of pregnancy. It is life threatening to the mother and the foetus. In the western countries the incidence of eclampsia has fallen due to the improved antenatal care. However the incidence of eclampsia is still high in the subcontinent. Since preeclampsia is known to recur it makes it all the more important to give the best possible obstetric management in the available settings. This study was done in the view to identify certain factors which could help in improving the perinatal oucome in eclampsia. The incidence of eclampsia in this study was 1.82%. This is comparable to other Indian studies [1,6]. It is also comparable to the incidence in other countries of the region [7]. However it is higher than the incidence in western countries [8]. Majority of the patients were unbooked patients and did not have regular antenatal care. This indicates that a lack of awareness regarding the antenatal care was there in these patients. 74.48% were primigravida. This is similar to the other studies [7,9,10]. Majority of the patients had less than 5 convulsions. However the perinatal outcome did not correlate to the number of convulsions in our study. Dhananjaya et al in his study correlated poor perinatal outcome with more than 5 convulsions [6]. The perinatal outcome was poor in those babies who were less than 2 kgs. This has not shown to correlate in another study [11] However perinatal deaths were less in those babies whose weight was above 2.5kgs. Perinatal deaths were least in those patients who delivered within 6 hours of the first convulsion. This emphasizes the importance of swift and prompt management of these cases. It also helps the obstetrician to decide the mode of delivery. This shows that those patients who delivered within 6 hours of starting the treatment had a better perinatal outcome than those who delivered after 12 hours. This also emphasizes the importance of early delivery. Early delivery has been shown to correlate with reduced perinatal mortality in other studies [11]. Studying timeliness of care for eclampsia in developing countries has been suggested as a step forward for improving component care [12]. Perinatal deaths have been seen to be higher in those patients who had a urine albumin more than 2+. Systolic Blood pressure of ≥160 mm of Hg and a diastolic blood pressure of ≥110mm of Hg were associated with a higher perinatal death. Similar results have been shown in other studies [6, 11]. In the recent years, caesarean section has been opted for the mode of delivery especially in salvageable babies. This has resulted in a better perinatal outcome. Other studies have reported a similar outcome with caesarean section in comparison to the vaginal route [13,14,15]. None of the mothers experienced any major anaesthetic or surgical complications.

Uric acid levels did not correlate with the perinatal outcome in this study. Gopalan had shown a higher perinatal death with a uric acid level of >6mg/dl [16], however it did not correlate to the perinatal deaths in another study [11]. Birth asphyxia was the major neonatal complication in this study. Birth asphyxia, low birth weight and prematurity have been the major complications in other studies [17, 18].

CONCLUSION

Perinatal mortality was high in patients who had a systolic Blood Pressure of ≥160mm of Hg, a diastolic Blood Pressure of ≥110mm of Hg, babies less than 2 kgs, urine albumin >2+. Perinatal mortality was low in those patients who had delivered within 6 hours of convulsion, in patients who delivered within 6 hours of commencement of treatment, babies delivered by caesarean section and in babies above 2 kgs.

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