

ORIGINAL ARTICLE

The Study of Maternal and Perinatal Outcome of Eclampsia in A Tertiary Hospital

Dr. Sugandha Patel*, Dr. Tushar Shah **, Dr. Dhaval Sakhiya***

*Assistant Professor,** Associate Professor,*** 2nd year Resident Department of Obstetrics & Gynecology, Civil hospital, Ahmedabad

KEY WORDS : Eclampsia, Maternal Complication, Fetal Complication

ABSTRACT

Objective : To study eclampsia cases and determine maternal and perinatal outcome associated with eclampsia in a tertiary hospital.

Methods : A retrospective study was conducted in Civil Hospital-Ahmedabad, OBGY Department, during 6 months period i.e from April 2017–October 2017. Different parameters including age, parity, gestational age, booking status, mode of delivery, admission to delivery interval, hospital stay, maternal and perinatal outcome were studied.

Results : In Eclampsia 62% of women were between 21 – 25 years age. 76% were primigravida. 96% of cases were unbooked cases. 86% of women were discharged healthy with 14% of maternal mortality rate. Maternal complication rate was 36% & 26% of perinatal death rate.

Conclusion : Eclampsia is associated with higher rates of maternal morbidity and mortality and this still remains a major contributor to maternal mortality and morbidity in developing countries like India.

INTRODUCTION

Eclampsia is defined as preeclampsia complicated by generalized tonic-clonic convulsions. Although eclampsia is uncommon in developed countries, it is still a major cause of maternal morbidity and mortality worldwide. The incidence of eclampsia is 0.3 – 0.9% and it has a maternal mortality rate of 0.5% to 10%.

Globally, preeclampsia and eclampsia account for 10-15% of maternal deaths. Most of the over half a million maternal deaths that occur annually are in developing countries like India. In developing countries case fatality rate of up to 14% is reported to eclampsia compared to 0 – 1.8% in developed countries. Maternal complications of eclampsia include placental abruption, HELLP syndrome, renal failure, DIC, cerebral and visual disturbances, pulmonary edema, cerebral hemorrhage or edema, cardiac failure, ARDS, IUGR, IUD, birth asphyxia and prematurity. Transient neurological deficit is common but persistent deficits are rare. Eclampsia accounts for 67.2% of obstetrics causes of acute renal failure requiring dialysis. Hepatic dysfunction is a result of associated liver parenchymal damage, periportal necrosis and rarely, hepatic rupture. Preeclampsia and eclampsia has been shown to be associated with diastolic dysfunction,

increased cardiac work and increased left ventricular indices with evidence of myocardial damage. Cerebrovascular accidents are common, in the long term cardiac and metabolic disease risks are increased.

In fetus, preterm delivery, asphyxia and IUGR, commonly associated with disease increase the perinatal mortality. Perinatal morbidity and mortality are increased with this disease often as a result of a iatrogenic premature delivery, IUGR or placental accidents such as placental abruption. Hypertensive disease in pregnancy is an important cause for delivery of VLBW babies and delivery at early gestations is associated with high perinatal mortality and morbidity resulting from prematurity.

AIMS AND OBJECTIVES

To evaluate maternal and perinatal mortality and morbidity associated with eclampsia.

MATERIALS AND METHODS

A retrospective study was undertaken reviewing the medical records of all women with eclampsia who were managed at Civil Hospital-Ahmedabad, Department of Obstetrics & Gynaecology during 6 Months period i.e from April 2017–October 2017. Generalized seizures in

Correspondence Address : Dr. Sugandha Patel

A-12, Shree Krishana Tower, Besides B.P. Patel House, Naranpura, Ahmedabad-13.
E-mail : sugandhapancholi@rediffmail.com

preeclampsia ,not attributed other causes ,were considered to be due to eclampsia. Women with history of seizures prior to pregnancy or before 20 weeks were excluded from study. Maternal complications such as HELLP syndrome, placental abruption, acute renal failure, DIC, cerebral and visual disturbances, pulmonary edema, IUGR and etc., were recorded. Data regarding demographic parameters, gestational age, booking status, parity, mode of delivery, maternal and perinatal outcome, admission to delivery interval, length of hospital stay were recorded. The this study, 50 cases of eclampsia were studied. Maternal characteristics were summarized. method of delivery was dependent on factors such as gestational age, fetal presentation, presence or absence of obstetric indications, fetal distress and findings on cervical examination maternal and perinatal outcome, admission to delivery interval, length of hospital stay were recorded.

RESULTS

Table-1 : Distribution According To Age, Residence, Booking Status

VARIABLE	CATEGORY	CASES	%
Age	≤20	17	34
	21 –25	31	62
	26 –30	2	4
Residence	Rural	44	88
	Urban	6	12
Booking status	Booked	2	4
	Unbooked	48	96

Most of women were between 21 years and 25 years (62%). Majority of women were from rural area(88%) and most of the cases were unbooked (96%).

Table -2 : Distribution According To Parity

	CASES	%
Primipara	38	76
Multipara	12	24

Out of 50 cases of eclampsia, 38 cases were primiparous(76%)

Table- 3 : Distribution According To Gestational Age

GESTATIONAL AGE	CASES	%
< 37weeks	31	62
≥ 37weeks	19	38

Out of 50cases,31women were admitted at gestational age less than 37 weeks (62%) and 19women were

admitted at gestational age more than and equal to 38weeks(38%).

Table-4 : Distribution According To Onset Of Eclampsia

ONSET OF ECLAMPSIA	CASES	%
Antepartum	43	86
Intrapartum	2	4
Postpartum	5	10

This table shows 86% of women had eclampsia during antepartum period.

Table-5 : Distribution According To Mode Of Delivery

MODE OF DELIVERY	CASES	%
Vaginal	28	56
Caesarean	22	44

Out of 50 eclamptic women, 44% of women delivered vaginally

Table-6 : Distribution According To Admission To Delivery Interval

A-D Interval DELIVERY INTERVAL	CASES	%
< 12hrs	33	66
12 – 24hrs	13	26
>24hrs	4	8

66% of women delivered within 12 hours of admission.

Table-7 : Distribution According To Maternal Complications

MATERNAL COMPLICATIONS	CASES	%
Placental Abruption	6	12
HELLP syndrome	4	8
Acute renal failure	2	4
DIC	1	2
Cerebro Vascular accident	1	2
Pulmonary edema	1	2
Aspiration Pneumonia	1	2
PRESS	2	4

DIC – Disseminated Intravascular Coagulation, PRES – Posterior Reversible Encephalopathy Syndrome, PPH – Postpartum Hemorrhage.

In this study, 36% of cases had complication and most common complication was placental Abruption and HELLP syndrome.

Table-8: Complication rates According to Admission-Delivery Interval

A-D Interval	Total case	MMR	Maternal complication	NICU Admission
<12 hrs	33	4	10	12
>12hrs	17	3	8	10

In this study, Maternal mortality (17.64%), Maternal complication (47.05%) & NICU Admission (58.82%) were higher in A-D Interval >12hrs than A-D Interval <12hrs in which maternal mortality (12.12%). Maternal complication (30.30%) & NICU Admission (36.36%).

Table-9 : Distribution According To Cause Of Maternal Death

CAUSE OF MATERNAL DEATH	cases	%
MODS	4	57.08
Acute Renal Failure	1	14.28
Cerebral haemorrhage	1	14.28
ARDS	1	14.28

MODS -Multiple Organ Dysfunction Syndrome, ARDS–Acute Respiratory Distress Syndrome

Total number of maternal deaths were 7(14%) and most common cause of maternal death was MODS.

Table – 10 : Distribution Of Maternal Death In Relation To Onset Of Eclamps+ia, Mode Of Delivery, Seizures To Death Interval

VARIABLE		case	%
Onset of eclampsia	Antepartum	5	71.4
	Postpartum	2	28.6
Mode of delivery	Caesarean	5	71.4
	Vaginal	2	28.6
Seizures to death interval	<48hours	3	42.9
	2 – 7days	3	42.9
	>7days	1	14.3

Out of 7 maternal deaths, 5 maternal deaths took place after caesarean section (71.4%).

Table- 11 : Distribution According To Duration Of Hospital Stay

DURATION OF HOSPITAL STAY	CASES	%
< 7days	23	46
7 – 14days	24	48
>14days	3	6

94% of women were discharged in less than 14 days and 6% women were discharged after 2weeks of hospital stay.

Table - 12 : Distribution According To Birth Weight

BIRTH WEIGHT	CASES	%
< 1 kg	4	8
1 – 1.5kg	11	22
1.6 – 2.0kg	13	26
>2kg	22	44

Out of 50 cases of eclampsia, 56% of babies were born with birth weight less than 2kg.

Table-13 : Distribution According To Perinatal Outcome

PERINATAL OUTCOME	CASES	%
Livebirth	43	86
iUD	7	14
ICU Admission	22 (discharged healthy 16)(death-6)	51

Out of 50cases, 43 women had live births (86%) and 7cases had intra uterine deaths (14%). Out of 43 babies, 22 babies were admitted in NICU (51%).

Table - 14: Causes Of NICU Admissions

	CASES	%
Prematurity	12	54.54
RDS	3	13.63
IUGR	5	22.72
Sepsis	2	9.09

RDS – Respiratory Distress Syndrome, IUGR – Intrauterine Growth Restriction 54.54% of babies were premature, 51% of babies had NICU admissions and 16 (72.72%) babies were discharged healthy and most common complication associated with NICU admission was prematurity.

Table – 15 – Perinatal Mortality

	PERINATAL DEATHS (n=13)	%
Intrauterine	7	14
Neonatal deaths	6	12

Total number of perinatal deaths were 13 (26%) and most common Complication which lead to neonatal death was prematurity.

Table – 16 – Causes Of Neonatal Death

COD	NO.OF NEONATAL DEATHS (n=6)	%
Prematurity	4	66.66
Birth asphyxia	1	16.66
Neonatal sepsis	1	16.66

Most common cause of neonatal death were Prematurity (66.6%).

DISCUSSION

This study consists of analysis of 50 cases of eclampsia, which were managed at tertiary care hospital, Civil Hospital-Ahmedabad from April 2017 to October 2017. Majority of women with eclampsia were between age 21-25 years in this study. Previous report by Liu et al showed most of women were between 18-35 years. In Onuh et al study, mean age of women was 27.1 ± 5.6 years. In Sharara et al study, 54.2% of eclamptic women were 25 years old and 18.5% were teenagers.

In the present study, 96% of women were unbooked cases having < 3 antenatal visits. El nafaty reported 69.2% of eclamptic women were unbooked In Sharars et al study, 30% of women did not have any antenatal visits. In Onuh et al study eclampsia significantly occurred in unbooked mothers. This shows the

importance of antenatal visits and early diagnosis and treatment of preeclampsia and routine prophylactic MgSo4 in cases of severe preeclampsia to prevent eclampsia. Primigravida definitely is at a higher risk to develop antepartum eclampsia. Eclampsia significantly occurred in primi gravida in the study (76%), comparable to Onuh et al study and Conde Agudelo et al study. 86% of women developed fits in antepartum period in the present study. In Onuh et al study, 86.4% cases were antepartum eclampsia and in Conde-Agudelo et al study, 57% of cases developed fits in antepartum period.

In present study, 44% cases had caesarean sections and 56% women had vaginal delivery. In Sharara et al study,

64% of women had caesarean sections. El Nafaty reported lower caesarean section rate. Lee et al reported higher caesarean section rate (79%).

In present study 36% had major maternal complications. Hussein et al reported 33% of major maternal complications and Lee et al reported 32% of cases had maternal complications. In present study, major maternal complications were placental abruption (12%), HELLP syndrome (8%), Acute renal failure (4%), DIC (2%), cerebral hemorrhage (2%), pulmonary edema (2%), aspiration pneumonia (2%), PRESS (4%). Shahnaz Nadir Jamil reported 40% of maternal complications in eclampsia with 16% HELLP syndrome, 10% of pulmonary edema, 6% of acute renal failure, 8% of aspiration pneumonia, 2% of neurological deficit, 8% of DIC, 2% of PPH and 2% of CVA. Most common maternal complication was placental abruption and HELLP syndrome in the present study.

In present study, maternal mortality rate (17.64%), maternal complication rate (47.05%), NICU admission rate (58.82%) were seen in which Admission delivery interval was >12 hrs, which were more compared to Admission-delivery interval was <12 hrs. In Hussein et al study maternal complication rate was 42.05% in which admission delivery interval was >12 hrs & it was clearly more than maternal complication rate seen in admission delivery time <12 hrs. In present study, maternal deaths were 7 (14%) and most common cause of maternal death was MODS. In Shahnaz Nadir Jamil study maternal mortality rate of eclampsia was reported as 8% and maternal complications rate was 40%. Bashir et al reported 8.35 to 10.3% of maternal mortality rate of eclampsia.

Hashimi reported eclamptic mortality as 9% over 5 year period.

There were 7 cases of intrauterine deaths, 6 cases of neonatal deaths and total number of perinatal deaths were 13 with perinatal mortality rate as 26%. The major cause of perinatal mortality was prematurity and birth asphyxia. Conde Agudelo reported 12.8% perinatal mortality rate of eclampsia.

In the present study, 62% of women had preterm deliveries. Conde-Agudelo et al reported 42% of preterm deliveries in eclampsia. 56% of newborns had birth weight < 2kg. Preterm delivery and IUGR was common cause for low birth weight babies. 51% of babies were admitted in NICU and most common cause of NICU admission was prematurity

CONCLUSION

Eclampsia is responsible for considerable maternal and perinatal mortality as well as maternal and perinatal morbidity and this still remained a major contributor to maternal and perinatal mortality and morbidity in a tertiary care hospital. Maternal morbidity include severe bleeding from placental abruption with its resulting DIC, pulmonary edema, aspiration pneumonia, acute renal failure, cerebrovascular hemorrhage and postpartum

hemorrhage. incidence of eclampsia and maternal deaths are higher in developing countries. This is related to non availability of medical care, lack of education and lack of antenatal care. Measures are to be taken to reduce this problem by education, early screening and provision of antenatal care to

all, introduction of comprehensive programmes based upon local epidemiological studies, focusing attention on health education, a network of easily available medical facilities. Retraining of traditional birth attendants to

identify the risk factors and early referral to a tertiary care centre is also necessary.

Intensive care unit should be available in every tertiary care centre for mother and baby. Medical staff should be trained for early detection,

management and care of these patients.

Perinatal outcome is similar irrespective of mode of delivery. Indication for caesarean section is only obstetric and eclapmsia per se should not be considered as an indication for caesarean section. Maternal outcome is found to be better in vaginal delivery cases.

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