



ECLAMPSIA; MATERNAL MORBIDITY AND MODE OF DELIVERY IN THE MANAGEMENT

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ABSTRACT... Objective: To determine the maternal morbidity and mode of delivery in eclamptic patients. **Study design:** Descriptive studies (cases series). **Duration of study:** One year from 1.3.2012 to 28.2.2013. **Setting:** Dept of Obstetrics and Gynecology Unit-III Liaquat University Hospital Hyderabad. **Patients and methods:** This study included 97 eclamptic patients. The main variables of interest were maternal age, parity, booking status, gestational age, mode of delivery and maternal complications like HELLP syndrome, pulmonary edema, post partum hemorrhage, renal failure, neurological deficit and ICU admission. **Result:** During the study period 2839 obstetrical patients were admitted with 97 cases being eclamptic give an incidence of 3.4%. Majority were unbooked 94.8%, Primigravida 58.8% and ≤ 25 years of age 68%. Complications were seen in n 50.51% and 12.4% patients have more than one complications. Vaginal route was mode of delivery in 53.60% and cesarean section was in 44.32% patients. **Conclusions:** Eclampsia still responsible for significant maternal morbidity and mortality. Eclampsia can only be successfully managed by early detection and prompt treatment of pre-eclampsia.

Key word: Eclampsia, Maternal morbidity, Mode of delivery.

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INTRODUCTION

Every minute a woman dies during labor or delivery with global ratio of 400 maternal deaths per 100,000 live birth¹. Eclampsia accounts for 12% of maternal deaths². Eclampsia is defined as occurrence of convulsion associated with signs of pre-eclampsia and not caused by other convulsive disorders³. Incidence of eclampsia varies with quality of antenatal care⁴. A report from Peshawar, Pakistan states an incidence of 120/10000⁵. In India, its incidence reported to be 220/10000⁶.

Eclampsia has been reported to have 10% risk of abruption placentae, 11% risk of HELLP syndrome, 6% risk of DIC, 6% risk of neurological deficit, 7% risk of aspiration pneumonia, 5% risk of pulmonary edema, 4% risk of cardio-pulmonary arrest, 4% risk of renal failure and 1% risk of death⁷. Delivery of the fetus with elimination of all placental and residual tissue is the only known definitive treatment for pre-eclampsia/eclampsia⁸. The commonest mode of delivery in eclamptics is

spontaneous vaginal delivery (71.6%) followed by cesarean section (18.7%) and forceps delivery (9.7%)⁹.

We study the different factors like maternal age, parity booking status, mode of delivery and maternal complications in these patients which help us to understand the existing situation of the problem in our country and guide us to improve our standard of mother care by controlling our major problem.

The rationale of the study was to find out the magnitude of the problem created by this disease by:

1. To find out the maternal morbidities of eclampsia and its association with maternal age, parity and gestational age.
2. Mode of delivery in Eclampsia.

PATIENT AND METHODS

This prospective descriptive study was carried out

from 1.3.2012 to 28.2.2013 included 97 eclamptic patients. The diagnosis was based on history of convulsion, high blood pressure reading on examination and bed side test for albuminuria. The main variables of interest were maternal age, parity, booking status, gestational age, mode of delivery and its relationship with maternal complications like HELLP syndrome, pulmonary edema, renal failure, postpartum hemorrhage, neurological deficit and ICU admission.

Patients presenting to labor room who full filled the criteria were included in the study. Any previous antenatal record or referral letter was analyzed. These patients were managed according to ward protocol. After stabilizing their fits by parental anticonvulsant and control of blood pressure by anti hypertensive therapy, delivery of fetus was conducted as soon as possible. Induction of labor was given by one or more than one method and monitored the progress of labor. Caesarean section was done due to obstetrical indication. Collected data was filled on the proforma. Data was analyzed by using SPSS version 15. Percentages were calculated for categorical variables. Mean and standard deviation were calculated for quantitative variables like age, parity and gestational age stratification to evaluate the affect of these variables on maternal morbidity.

RESULT

During the study time period of 6 months, total 2896 obstetrical patients were admitted in which 97 patients were eclamptic, out of these, given the incidence of eclampsia 3.35%. (68%) of the patients were ≤ 25 years. Mean maternal age was 23.54 ± 4.64 years.

(58.8%) of the patients were primigravida and (41.2%) were multigravida. Mean parity was 1.5 ± 0.69 . Most of the patients (94.8%) were unbooked. Majority of the patients (54.6%) were between 33 to 37 weeks. Mean gestational age was 33.8 ± 3.2 weeks. Vaginal route was the commonest (53.60%) mode of delivery, (44.32%) delivered by lower segment cesarean section and (2.06%) remain undelivered. Maternal morbidities were seen in (50.51%) of the patients in which

(12.4%) have more than one complication. Most common complication observed in this study was pulmonary edema affected 12.4% of the patients. Postpartum hemorrhage in (10.3%), HELLP syndrome in (9.3%), Renal failure in (8.2%), ICU admission in (7.2%) and Neurological deficit was seen in (3.1%) of the patients. Study result shown that maternal complications mostly observed in primigravida with maternal age between 21 to 25 years presented with gestational age between 33 to 37 weeks.

Mode of delivery	Frequency	%age
Normal vaginal delivery	52	53.60
LSCS*	43	44.32
Undelivered	02	2.06
Total	97	100.0

Table-I. Mode of delivery (n=97)
*Lower segment cesarean section

Morbidity	Frequency	%age
Pulmonary edema	12	12.4
HELLP Syndrome	9	9.3
ICU admission	7	7.2
Neurologic deficit	3	3.1
Postpartum hemorrhage	10	10.31
Renal failure	8	8.2

Table-II. Frequency of maternal morbidity

DISCUSSION

The incidence of eclampsia has been remained relatively constant over the last 15 to 30 years especially in under developed countries, which varies from 2%¹⁰ to 3.23%³. It is comparable to current study (3.41%). Eclampsia is more commonly seen in primigravida (58.8%) which is also observed in study¹⁰ (60%) at GMM Medical Collage Hospital.

The age distribution of the patients in our study is the similar to the other reports as majority (68%) were ≤ 25 years of age and mean maternal age

Maternal morbidity	Maternal age groups				Total (n=49)
	16-20 (n=13)	21-25 (n=18)	26-30 (n=12)	>30 (n=6)	
Postpartum haemorrhage	4(30.76%)	3(16.66%)	3(25%)	0	10(20.40%)
HELLP syndrome	1(7.69%)	4(22.22%)	2(16.66%)	2(33.33%)	9(18.36%)
ICU admission	0	4(22.22%)	3(25%)	0	7(14.28%)
Neurologic deficit	2(15.38%)	0	0	1(16.66%)	3(6.12%)
Pulmonary edema	4(30.77%)	5(27.77%)	2(16.66%)	1(16.66%)	12(24.48%)
Renal Failure	2(15.38%)	2(11.11%)	2(16.66%)	2(33.33%)	8(16.32%)

Table-III. Stratification of maternal morbidity by maternal age

Maternal morbidity	Primigravida (n=29)	Multigravida (n=20)	Total (n=49)
Postpartum haemorrhage	6(20.68%)	4(20%)	10(20.40%)
HELLP syndrome	4(13.79%)	5(25%)	9(18.36%)
ICU admission	4(13.79%)	3(15%)	7(14.28%)
Neurologic deficit	2(6.89%)	1(5%)	3(6.12%)
Pulmonary edema	9(31.03%)	3(15%)	12(24.48%)
Renal Failure	4(13.79%)	4(20%)	8(16.32%)

Table-IV. Stratification of maternal morbidity by parity

Maternal morbidity	Gestational age groups			Total (n=49)
	28-32 wks (n=15)	33-37 wks (n=25)	>37 wks (n=9)	
Postpartum haemorrhage	1 (6.66%)	6(24%)	3(33.33%)	10(20.40%)
HELLP syndrome	4 (26.66%)	3(12%)	2(22.22%)	9(18.36%)
ICU admission	3 (20%)	4(16%)	0	7(14.28%)
Neurologic deficit	0	2 (8%)	1 (11.11%)	3(6.12%)
Pulmonary edema	2 (13.33%)	8(32%)	2(22.22%)	12(24.48%)
Renal Failure	5 (33.33%)	2(8%)	1(11.11%)	8(16.32%)

Table-V. Stratification of maternal morbidity by gestational age

was 23.54 ± 4.64 years which is lower but comparable with the study done in Peshawar¹¹. Eclampsia is the disease of economically deprived population unaware of the importance of antenatal care which is reflected in the study as (94%) patients were unbooked. It is also been documented by a report from Maternity Hospital

Katmandu¹², that only 13% of obstetrics population have antenatal care.

Risk of eclampsia increase in third trimester of pregnancy. Most of (67%) the patients were presented with pregnancy beyond 33 week which is higher than reported by Khanum M et al¹³.

All the patients were managed with injection Diazepam to control fits at the time of admission. Parental Magnesium sulphate used to control further fits, Blood pressure controlled with injection Hydralazine. After the initial management and resuscitative measures these patients were evaluated for mode of delivery. (54.6%) of the patients were delivered vaginally and 45.4% required lower segment caesarean section. This high rate of vaginal delivery is because most of them presented in active stage of labour, which delivered after induction/augmentation. This finding is comparable to the study⁶ from PAF hospital Shorkot that reported vaginal delivery in 56.4% and caesarean section in 38.2%. However a study¹⁰ from GMM Medical collage reported higher rate of caesarean section in eclamptic patients which shows changes in the management of eclampsia to deliver the patient as soon as possible and avoid prolonged labor. Once delivered, patient kept under observation for next 24 hours. During this period Diazepam infusion or parental Magnesium sulphate was continued. Complications of eclampsia are diverse, involving multiple organs and need vigilant care and multidisciplinary management. In the present study, 50.51% patients had one or other complication and 12.4% patients had more than one complications. Ahmad S et al¹¹ reported 48% complication rate.

Total numbers of complications observed in current study were 6, including pulmonary edema, renal failure, HELLP syndrome, postpartum haemorrhage ICU admission and neurological deficit. Among the complications pulmonary edema was on top of the list affected 12.4% patients. The frequencies of other complications were postpartum haemorrhage 10.3%, HELLP syndrome 9.3%, renal failure 8.2%, ICU admission 7.7% and neurological deficit 3.1%. Jamil SN⁸ et al reported the frequency of similar complications as HELLP syndrome (16%) making the commonest morbidity followed by plumonary edema (10%). The important most observation in current study that the patients with complications were primigravida, maternal age ranges from 21-25 years of age and mostly occur gestational age

b/w 33 to 37 weeks and admitted with history of multiple fits, had a late admission either due to delay in referral from local hospital or due to non availability of transport.

In spite of different preventive approaches, eclampsia still responsible for 11.5%¹¹ to 20%¹⁴ of maternal deaths across the country. Razia Iftikhar¹⁵ reported maternal mortality in 10% of the cases while maternal mortality rate of this study was 7.2%. Neurological deficit was observed in 3.1% of the patients and none of them survived so it was the commonest cause of death. Two patients had severe post partum hemorrhage, which leads to shock and death., one patient died due to HELLP syndrome and one due to renal failure. All the survived patients stayed in hospital for 7- 10 days according to their clinical condition and recovery. Routine investigations were repeated as indicated. All alive babies were under care of neonatologist.

CONCLUSIONS

Increase frequency of eclampsia and its related complications clearly indicate that unawareness of importance of antenatal care, responsible for this syndrome. Most of the eclamptic patients admitted to the hospital after having multiple fits with multi organ failure and their management requires intensive care facility and prolonged hospital stay which ultimately increase the cost and burden. Incidence and complication of eclampsia can be reduced by improving antenatal care at community level, enhance emergency obstetrical practices and fast referral system in remote areas. The use of hospital based audit and eclampsia drills may improve level of care.

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