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Research Article

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A Study of Maternal Outcome in Complicated Eclampsia

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ABSTRACT

Objective: To study sociodemographic parameters & various maternal complication in eclampsia patient. **Method**: A Prospective observational study was conducted in department of Obstetrics and Gynecology in Government medical college, Aurangabad. **Result**: It was observed that majority of the cases, 72% were between 20-25 years of age group , 46% were belonging to lower class, 54% cases were from rural residence, 64% cases were Unbooked hence 68.42% were referred without basic treatment. 82% cases had antepartum eclampsia, 14% had postpartum & 4% had intrapartum eclampsia encountered out of which 52% cases had undergone lower segment caesarean section. The most common complication encountered was Abruptio placenta followed by Pulmonary edema others include PRESS, HELLP syndrome with 6 maternal mortalities. Most cases required ICU management. 26% cases required Mechanical ventilation. **Conclusion**: Provision of quality antenatal health care services, timely reffral with treatment and delivery, intensive monitoring in the intrapartum and postpartum period have the potential to improve maternal and to prevent the occurrence of eclampsia as a whole.

Key Words: *Eclampsia ,HELLP Syndrome , Maternal complications,PRES syndrome*

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INTRODUCTION

Pregnancy causes profound anatomical, physiological and metabolic changes in maternal tissues. These well-orchestrated changes can go wrong at some stage of pregnancy resulting in various Maternal complications. One of the most dreaded complication of sever preeclampsia is eclampsia.

"ECLAMPSIA" defined as development of convulsions and/or coma unrelated to other cerebral conditions in woman with sign and symptoms of pre-eclampsia which typically occurs during or after the 20th week of gestation. It can occur with / without gestational or pre-existing hypertension[1]. Probably resulting from inadequate antenatal care and lack of trained personnel at referral centers.

The word eclampsia originates from the Greek word 'eclampsia' which means "bright light"[2].

Willams described eclampsia in his first edition (1903) as In the majority of cases, seizures outbreak is preceded by premonitory symptoms[3].

Eclampsia appear more commonly in the last trimester. Seizures can occur in the antepartum intrapartum and postnatal period[4].

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% .

Maternal complications of eclampsia include placental abruption, HELLP syndrome, renal failure, DIC, cerebral and visual disturbances, pulmonary edema, cerebral hemorrhage or edema. 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. Cerebrovascular accidents are common, in the long term cardiac and metabolic disease risks are increased[5].

The magnitude of eclampsia incidence and temporal trends of its complications have differed depending on data sources, frequency of obstetric interventions such as early delivery, mode of delivery, and, most recently, use of magnesium sulphate therapeutically and prophylactically for women with severe preeclampsia[6].

The high maternal morbidity and mortality due to eclampsia in the developing countries has been ascribed to late referral, delay in hospitalization, lack of transport, un-booked status of pregnant women and multiple seizures prior to admission.

Referral of high-risk patients to resource intensive hospital remains the cornerstone of best obstetrical practice[7]. The maternal outcome following eclampsia primarily depends upon the number of the convulsions, quality of treatment Received and the speed with which it was made available. But various sociodemographic aspects of the pregnant woman are strong determinants in the Occurrence of disease as well as maternal outcome[7].

Anti-hypertensive to control the blood pressure, magnesium sulphateas neuroprotective, and Termination of the pregnancy after stabilization of women are well accepted interventions in this condition. As eclampsia is one of the important cause of maternal morbidity &mortality. Ours being tertiary care center with separate well equipped High dependency unit with ICU care facilities get huge number of referrals from in and around the city and from peripheries . Hence this study was prompted to know the different risk factors and Maternal outcome in complicated eclampsia[8].

Inclusion Criteria:

Antepartum or postpartum case of eclampsia associated with any maternal complication which is present on admission or developed during hospital stay or referred from outside.

Exclusion Criteria:

Eclampsia patient without any complication or brought dead to hospital.

Present study was a prospective, observational studycarried out in postgraduate department of obstetrics and gynaecology, at tertiary care hospital after obtaining the permission from the institution ethics committee during the period october 2020 to september 2022. All pregnant women presented or referred to our tertiary care hospital with case of eclampsia were enrolled after applying inclusion and exclusion criteria. since written informed consent requires a clear mind and many pregnant women were confused at the time of admission, we took written informed consent from next of kin, generally the spouse. recruited women were admitted in the eclampsia room of our tertiary health care hospital, case related data were entered into a questionnaire. The data included pregnant woman's details, detailed history, gestational age determined by early scan preferably or LMP or both.

The patient's history includes sociodemographic parameters like age, parity, area of residence, booked status, socioeconomic status, occupation and education of pregnant women. In cases of referred patients referred history was noted, warning signs and symptoms of eclampsia was noted.

Time interval between first convulsion to admission to our institute or time interval between first convulsion to delivery was noted.

Detailed clinical history including obstetric, menstrual, family, past and personal history was taken. General examination, systemic examination include, respiratory system and cardiovascular system was examine, central nervous system examination was done. Obstetrics examination including, uterine size in weeks, uterine tone, fetal presentation, fetal heart sound /rate were noted. Per speculum examination, local examination, per vaginal examination including cervical dilatation, effacement, condition of membranes, liquor, station, pelvis adequacy was examined and analyzed.

Along with history and examination, routine investigations like complete blood count with absolute platelet count, liver function tests, renal function tests, coagulation profile, blood grouping and rh typing, bleeding time, clotting time, urine routine microscopy was noted for all patients. if required ultrasonography, NCCT was done data was documented in case performa and data collection sheets was prepared obstetrics management was done as per departmental protocol and the decision regarding timing and mode of delivery was individualized.

Standard operative protocol followed by our department are: Control of seizure, Control of hypertension , Termination of pregnancy, Management of complication if developed any

1) control of seizures: seizures are usually self-limited in this scenario, for those patients who present to the emergency department actively seizing, address the airway, breathing, circulation by administering supplemental oxygen and observing for cyanosis, establish iv access, remove tight clothing, determine blood glucose level, and initiate drug therapy to help control the seizure activity. All eclamptic patients was given magnesium sulphate according to pritchard's regimen and whenever required zuspan regimen was used, magnesium sulphate will be continued for 24 hours post-partum or till 24 hours after the occurrence of last seizure, whichever was later. clinical monitoring of saturation (spo2), respiratory rate, knee jerks/ deep tendon reflexes and urine output will be done simultaneously as per protocol. for patients who continue to have seizure activity while or after receiving magnesium sulphate, seizures can be treated with

benzodiazepines,

2) Control of hypertension: antihypertensive drugs was given according to the patient profile, anti-hypertensives was given for raised blood pressure in the form of iv. labetalol or oral nifedipine (as per the level of consciousness of the pregnant woman) in order to keep the systolic blood pressure at 140-150mm hg and diastolic blood pressure at 80-100mm hg.tab labetalol at a dose of 200mg tds was administered to maintain blood pressure within normal limits. inj. labetalol 20mg iv was used for hypertensive crisis.

3) Termination of pregnancy: considering the convulsion delivery interval to be kept < 12 hours all cases underwent termination of pregnancy. After initial assessment of general condition of the eclampsia mother and accurate calculation of bishop's score decision for caesarean delivery or vaginal delivery was taken based on precision of senior obstetrician on duty.

Maternal complications in case of eclampsia are:

1. Placental abruption, pph,
2. Ophthalmological complication such as blurring of vision, blindness and hypertensive retinopathy,
3. Neurological deficits PRES syndrome. stroke, massive cerebral hemorrhage, cerebrovascular accidents,
4. Aspirational pneumonia, pulmonary edema, pulmonary embolism**,**
5. Cardiopulmonary arrest
6. Acute renal failure,
7. HELLP syndrome,
8. DIC,
9. Maternal death and others.

In cases of immediate postpartum or post operatively condition like uncontrolled hypertension, PPH was managed on table in collaboration with physician, senior obstetrician and anesthetist. After delivery if patient develops complication requiring intensive care unit admission then they was followed till discharge. Indication for ICU admission, need of intubation, in case of acute kidney failure need of dialysis, no of cycles of dialysis was noted, Maternal outcomes noted. Management data was collected and analyzed. The above data obtain was complied, analyzed and used for better maternal outcome in cases of eclampsia.

Table 1: Distribution of study participate according to sociodemographic factors.

sociodemographic factors		**Cases**	**Percent**
Age (in years)	18-20	08	16.00
	21-25	36	72.00
	26-30	05	10.00
	31-35	01	02.00
Socio-	Upper	01	02.00
economic status	Upper Middle	04	08.00
	Middle	07	14.00
	Lower Middle	15	30.00
	Lower	23	46.00
Education	Illiterate	04	08.00
	Primary	28	56.00
	Secondary	12	24.00
	Higher secondary	04	08.00
	Intermediate/Diploma	00	00.00
Gravida	G1	28	56.00
	G2	14	28.00
	G3	06	12.00
	≥G4	02	04.00
Registration	Unbooked	32	64.00
	Booked	18	36.00
Referred case	Referred With Treatment	12	31.54
	Referred Without Treatment	26	68.42
Gestational age in weeks	20-28	03	06.00
	28.1 -34	07	14.00
	34.1-37	21	42.00
	37.1-40	12	24.00
	Post-partum	07	14.00

Table 2: Distribution of study participate according to Type of Eclampsia

Type of eclampsia	Cases	Percent
Antepartum	41	82.00
Intrapartum	02	04.00
Postpartum	07	14.00

Table 3: Distribution of study participate according to Mode of delivery

TYPE OF DELIVERY		Frequency	Percent
VAGINAL21(42%)	PRETERM	16	28
	TERM	05	14
LSCS 26(52%)	PRETERM	20	40
	TERM	6	12
INSTRUMENTAL (TERM)		03	06
TOTAL		50	100

Table 4: Distribution of study participate according to Maternal complications

Maternalcomplication	Frequency	Percent
Abruptioplacentae	10	20
Pulmonary edema	09	18
PRES	09	18
HELLP syndrome	08	16
PPH	08	16
Disseminated intravascular coagulation	04	08
AKI	04	08
Cerebrovascular accidents	03	06
Hypertensive Encephalopathy	01	02

(More than one complication may be seen in a single case studied.)

DISCUSSION

The study was conducted after obtaining clearance from the institutional ethics committee. The data collection was done by using pre structured and pretested questionnaire. In the study, out of 496 patients, 50 cases fulfilling inclusion and exclusion criteria were included. It was observed that majority of the cases, 72% cases were between 20-25 years of age. Mean age of our study participants was -22.04 ± 3.30 years it was observed that majority 46 % participants were from lower class. It was observed that 54%cases of eclampsia were from rural residence and 46% cases of eclampsia were from urban residence. It was observed that64%were Unbooked and 36% cases were booked (it includes all cases those who had minimum 1-2 visit at any health care facility during the ANC period it depend on GA. The present study, distribution of cases of eclampsia according to gravida showed that 56% cases of eclampsia were primigravida. Primigravida definitely is at a higher risk to develop antepartum eclampsia. Majority of cases 26% referred from different private hospitals followed by District hospital 22% and Primary health Center 08% .

In the present study maximum participants 62.00% were admitted to the facility within 6-12 hours of first convulsion. Owing to the timely referral facilities and adequate training provided to Medical officers and staff of peripheral hospitals under BeMOC by our institute, most eclamptic women are referred on a priority basis to prevent further complications.

In the present study, It was observed that out of total 50 cases ,82% cases had antepartum eclampsia, 14% cases had postpartum eclampsia and 4% case had intrapartum eclampsia.

It was observed that majority of cases 48% presented at gestational age 34.1 - 37 weeks and 18% cases presented at more than 37 weeks. The distribution of eclampsia cases according to mode of delivery showed that 52% cases had undergone lower segment caesarean section while 42% cases were delivered vaginally and 6% were instrumental delivery.

The complication encountered in the study population was Abruptio placenta 20% followed by PPH, HELLP syndrome, DIC& AKI. Similarly, in Santosh Kumar Dora et al (2017)[8]study maternal complications were placental abruption 14.28%, HELLP 10.71%, pulmonary edema 1.78%, acute renal failure 1 1.78% and DIC 1.78%.The maternal mortality rate was 3.57%.

CONCLUSIONS

Our study Maternal risk factor seen that majority of women from rural areas were belonging to lower class. They were unbooked cases and belonged to age group of 20 to 25 years and referred from peripheral hospital but without basic treatment hence associated with complications. Cases those who reached our hospital early with prior treatment associated with good outcome. Cases those who reached our hospital late without prior treatment associated with more Maternal complications .Provision of quality antenatal health care services, increasing patient awareness about warning symptoms, investigations, timely delivery, intensive monitoring in the intrapartum and postpartum period have the potential to improve maternal outcome and to prevent the occurrence of complications of eclampsia as a whole

Ethics Approval and Consent to Participate: Institutional ethics committee approval was was taken for the present study

List of Abbreviations: ***PRESS***- Posterior Reversible Encephalopathy Syndrome HELLP-Hemolysis elevated liver enzymes low platelet count. ***PPH***- Post Parum Hemorrhage ***AKI***- Acute Kidney Injury ***DIC***- Disseminated Intravascular Coagulation ***ICU***- Intensive Care Unit

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Authors Contribution: Dr YRD Developed the study proposal, managed research implementation, data collection analysed data and wrote the manuscript . Dr. SKP Developed the study protocol, assisted with data analysis and reviewed the manuscript. Dr SNG, Dr SSD assisted with development of study proposal, reviewed final manuscript . Dr ANP assisted in data collection. All authors have read and approved the manuscript.

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