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STUDY OF FETOMATERNAL OUTCOME IN PREGNANCY WITH ECLAMPSIA

DR. DIPIKA PRAJAPATI: -2nd Year Resident Doctor, Department of Obstetrics and Gynaecology, Smt SCL Municipal General Hospital, Smt NHLMMC.

DR. NIRALI PANCHAL: - 2nd Year Resident Doctor, Department of Obstetrics and Gynaecology, Smt SCL Municipal General Hospital, Smt NHLMMC.

DR. SHLOK V. PATEL: - MBBS (Bachelor of medicine and bachelor of surgery), Smt NHL MMC.

DR. RINA V. PATEL: - Professor and Head of the Unit, Department of Obstetrics and Gynaecology, Smt SCL Municipal General Hospital, Smt NHLMMC.

DR. NIKHARBHAI VAGELA: -1st Year Resident Doctor, Department of Obstetrics and Gynaecology, SVP HOSPITAL, Smt NHLMMC. Dept of Gynaecology, Smt SCL Municipal General Hospital, Smt NHLMMC. Ahmedabad pin 380006

DR. VAISHALI P. PANCHAL: - Associate Professor, Department of Obstetrics and

ABSTRACT

INTRODUCTION: -

Eclampsia is defined as an acute and life threatening convulsive condition that arises due to preeclampsia. Typically, convulsions are tonic –clonic lasting for 1-2 mins and are not due to other causes. (e.g.- epilepsy, brain tumour). Global incidence of eclampsia is 1 in 1500 pregnancies whereas in India it is as high as 1-5% of all pregnancies. Poor availability to health resources, lack of transportation, lack of knowledge regarding the various risk factors and loss to follow up of high-risk pregnancies are the major hindering factors in the reduction of rate of eclampsia.

OBJECTIVES: -

This study is to estimate the proportion of eclampsia, evaluate the clinical presentation, assess management and study the various foetal and maternal outcomes in patients with eclampsia coming to our institute.

METHOD: -

This is a prospective observational study which was conducted at our tertiary care centre. Total 7500 births were recorded in a period of one year from February 2022 to February 2023. The study population consists of patients who presented to the Department of Obstetrics and Gynaecology at our tertiary institute with features of eclampsia,

RESULT: -

Proportion of eclampsia in our study is 0.33%. Chances of eclampsia increase in nulliparous patients (80%) during our study period. Incidence is higher during antepartum period. In the present study, 72% patients were discharged without the requirement of intensive care, whereas 20% patients need ICU stay. 34% babies required NICU admission.

CONCLUSION: -

In low- and middle-income countries, eclampsia is one of the leading causes of maternal and perinatal mortality. Counselling and proper antenatal care play a very important role in prevention of maternal and perinatal morbidity and mortality. Early detection of preeclampsia

and timely treatment with antihypertensive drugs may help in reducing the incidence of antepartum eclampsia.

Keywords: FETOMATERNAL, OUTCOME, PREGNANCY, ECLAMPSIA

INTRODUCTION

Eclampsia:

An acute and life threatening convulsive condition that arises due to preeclampsia. Typically, convulsions are tonic –clonic lasting for 1-2 mins and are not due to other causes. (e.g.- epilepsy, brain tumour)

Hypertension in pregnancy is one of the most common causes of both maternal and fetal morbidity and mortality. [1]

Hypertensive disorders of pregnancy occur in about 10% of all pregnant women around the world with preeclampsia affecting 3-5% of pregnancies [2].

Although the causes of hypertensive disorders of pregnancy are unknown, certain factors are known to increase the risk such as – young women with first pregnancy, pregnant women younger than 20 years and older than 40 years of age, having diabetes, history of PIH in previous pregnancy. Maternal complications like eclampsia, antepartum haemorrhage, disseminated intravascular coagulopathy (DIC), acute renal failure, HELLP syndrome, intra cerebral haemorrhage, and even maternal death can occur. Fetal complications like fetal growth restriction, sudden intrauterine death, stillbirth, preterm and low birth weight babies, increased need for NICU care results into increased neonatal morbidity and mortality.

ETIOPATHOGENESIS:

Gestational hypertensive disorders are more likely to occur in women with the following characteristics:

- Primary exposure to chorionic villi [10]
- Exposure to increased number of chorionic villi such as twins, hydatiform mole.
- Genetic predisposition to hypertension developing during pregnancy

Phenotypic expression depends widely upon the degree of remodelling of the spiral arterioles by endovascular trophoblasts. The “*two-stage disorder*” theory explains the pathogenesis of preeclampsia syndrome. The Stage-1 the “*placental syndrome*” is caused by the faulty endovascular trophoblastic remodelling that downstream causes Stage-2 “*the maternal syndrome*”. Stage 2 can also be modified by maternal conditions that also manifest endothelial cell activation/inflammation like chronic hypertension, renal disease, obesity, immunological or connective tissue disorders and diabetes.

HELLP SYNDROME: First described by Weinstein in 1985 is a severe form of preeclampsia featuring:

H-Haemolysis

EL-Elevated liver enzymes

LP-Low platelet count

It is observed in about 20% of cases of women with eclampsia. Symptoms include nausea, vomiting, epigastric and upper right quadrant pain.

With HELLP Syndrome, there is 40% chances of adverse outcome with maternal mortality in up to 1% cases. [25]

D/D: Viral hepatitis, acute fatty liver of pregnancy, renal disease, gall bladder disease, pancreatitis, hyperemesis gravidarum, idiopathic thrombocytopenic conditions and haemolytic uremic syndrome.

Management of HELLP syndrome- It is similar to that of a patient with severe preeclampsia with the help of antihypertensives and anticonvulsants and immediate delivery of the foetus if

patient is having more than 34 weeks of gestation, and if the patient has < 34 weeks of gestation, give corticosteroids and deliver.

Role of corticosteroids in HELLP is still under research but Mississippi classification recommends use of dexamethasone 12 mg every 12 hourly for severe form of HELLP Syndrome along with complications.

PRODROMAL SIGNS OF ECLAMPSIA:

1. Severe and persistent headache in almost 80% cases.
2. Epigastric or hypochondriac pain
3. Photophobia or blurred vision
4. Brisk deep tendon reflexes
5. Marked diuresis for 48 hours.

Stages of an eclamptic fit:

- A. Premonitory Stage
- B. The Tonic Stage
- C. The Clonic Stage
- D. The Stage of Coma

MATERNAL COMPLICATIONS:

- Abruptio placenta
- Cerebrovascular accident –
- HELLP syndrome - haemolytic anaemia, elevated liver enzymes, low platelets
- Acute left ventricular failure with pulmonary edema
- Aspiration pneumonia
- Acute renal failure
- Microangiopathic haemolytic anaemia.
- Cerebral thrombosis and circulatory collapse.
- Cardiopulmonary arrest.

FETAL COMPLICATIONS:

- Intrauterine death
- Intrauterine growth restriction.
- Prematurity and its hazards:
- Antepartum and intrapartum asphyxia
- Neonatal encephalopathy
- Effect of magnesium sulphate - hypermagnesemia is seen. Lethargy, hypotonia, apnoea, respiratory depression, poor sucking reflex, decreased intestinal motility and delayed passage of meconium.

MANAGEMENT OF ECLAMPSIA:

Principles in management of a patient with eclampsia are:

- A. General Management
- B. Control of seizures
- C. Control of blood pressure
- D. Obstetric management
- E. Early detection and management of complications

AIMS AND OBJECTIVES

- 1.To estimate the proportion of eclampsia in our institute.
- 2.To evaluate the clinical presentation of the patients with eclampsia coming to our institute.
- 3.To assess management of the patients with eclampsia coming to our institute.
- 4.To study the various foetal and maternal outcomes in patients with eclampsia coming to our institute.

METHODS AND MATERIALS

STUDY DESIGN- Hospital based Prospective Analytical and Observational Study.

SOURCE OF DATA AND METHODS:

- Patients admitted to the Department of Obstetrics and Gynaecology of our tertiary care institute.
- An informed consent will be taken from each patient.
- Routine and relevant investigations will be done.
- All the findings of the study will be recorded and statistically analysed wherever applicable.

STUDY SUBJECTS: The study population consists of patients who presented to the Department of Obstetrics and Gynaecology at our tertiary institute with features of eclampsia, considering the inclusion and exclusion criteria and details were noted down according to the proforma with due consent taken from patient/relatives.

INCLUSION CRITERIA:

1. Women with Eclampsia i.e., antepartum, intrapartum and postpartum.
2. Women with gestational age more than 20 weeks of gestation till term.

EXCLUSION CRITERIA:

1. Patients diagnosed with other causes of convulsions like epilepsy, brain tumours, tuberculoma
2. Pregnancy complicated with other medical conditions like chronic hypertension, diabetes, renal hypertension, SLE, or other immunological conditions, collagen vascular disorders.

STUDY AREA: Department of Obstetrics and Gynaecology at our tertiary institute.

STUDY PERIOD: one year

SAMPLE SIZE: All cases diagnosed with Eclampsia (antepartum, Intrapartum or postpartum) in this duration-based study at our tertiary care institute

OBSERVATION AND DISCUSSION

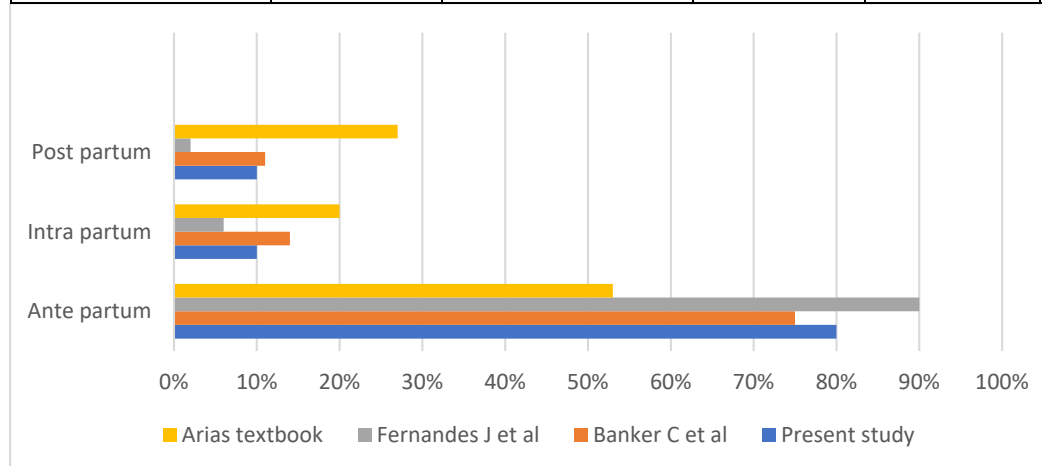
TABLE 1. PROPORTION OF ECLAMPSIA

Total deliveries	Eclampsia	Proportion
7500	25	0.33%

Proportion of eclampsia in our study is 0.33%

TABLE 2. TYPE OF ECLAMPSIA

TYPE	NUMBER	PERCENTAGE	Banker c et al	Fernandes j et al	Arias Textbook
ANTEPARTUM ECLAMPSIA	20	80%	75%	90%	53%
INTRAPARTUM ECLAMPSIA	03	12%	14%	6%	20%
POSTPARTUM ECLAMPSIA	02	08%	11%	2%	27%



As seen from the table as well as the bar diagram, 20 out of 25 patients had their first eclamptic fit during the antenatal period. Banker c et al^[42] and Fernandes J et al^[43] and Arias' high risk pregnancy textbook^[26] noted relatable findings. Postpartum eclampsia has increasingly decreased in incidence over the past decades due to early detection of antepartum eclampsia, prophylactic use of magnesium sulphate and improved access to antenatal care^[44]. The abnormal placental vascular remodelling i.e., the causative factor being still present during the antenatal period leads to increased number of antepartum eclampsia.

TABLE 3: PARITY IN THE PRESENT SERIES

PARITY	NUMBER	PERCENTAGE	Haque et al	Pillai S et al
NULLIPAROUS	20	80%	73%	61%
MULTIPAROUS	05	20%	26%	39%

Eclampsia was most commonly seen in nulliparous patients (80%) during our study period. Haque et al^[38] and Pillai S et al^[39] also had analogous findings of 70-80% patients being nulliparous. First time exposure to chorionic villi increases the chances of eclampsia^[10] which has been stated in standard textbooks contributing to the majority of the patients being nulliparous.

TABLE 4. IMMINENT SIGNS OF ECLAMPSIA

IMMINENT SIGNS	NUMBER	PERCENTAGE	Patel A et al
HEADACHE	13	52%	45%
VOMITTING	07	28%	14%
BLURRING OF VISION	03	08%	7.5%
EPIGASTRIC PAIN	02	04%	6%

Thirteen of the 25 patients had headache before the onset of the eclamptic fit. Vomiting was almost always accompanied with headache. Patel A et al^[45] noted that headache was the most common imminent symptom of eclampsia. Headache is thought to be because of cerebral hyper perfusion that has a predilection for the occipital lobe suggesting the typical nature of the headache arising from the behind the head in the lower region not responding to traditional analgesics. Proper counselling of the patients regarding the warning signs may help in preventing eclampsia by seeking prompt treatment.

TABLE 5. MATERNAL OUTCOME

OUTCOME	NUMBER	PERCENTAGE	Dalal M et al
DISCHARGED WITHOUT ICU ADMISSION	19	72%	75%
ICU STAY	05	20%	24%
DEATH	01	4%	3.5%

In the present study, 72% patients were discharged without the requirement of intensive care, where as 20% patients need ICU stay. The patients requiring ICU stay were majorly complicated with HELLP, DIC. These patients also required transfusion of various blood and blood products. The maternal mortality in our study was 4% owing to severe cases of Hypertensive Heart Failure and CVA.

In the study conducted by Dalal M et al^[51], 75% were discharged without any noticeable complications while 24% patients required intensive care. Ghimire S et al also noted that 29.46% required intensive care. The most common cause of maternal mortality observed in these studies were also HELLP, DIC, ARF.

The higher incidence of maternal mortality at our institute were mainly because of referral of complicated patients from surrounding primary health care centres who did not receive proper treatment.

TABLE 6 B. OUTCOME OF LIVE BABIES

	NUMBER	PERCENTAGE	Shah R K et al
ROOMING IN WITH MOTHER	11	44%	-
EARLY NEONATAL DEATH	02	8%	4.5%
NICU ADMISSION	09	37%	38%

In our study, out of 25 babies, 22 babies were live born while the perinatal mortality in our study 18% patients where 3 were intrauterine fetal deaths and 2 were early neonatal deaths. 34% babies required NICU admission.

In the study conducted by Shah RK et al^[52], the perinatal mortality was 11.36%, contributing 6.8% still births and 4.54% neonatal deaths. Ndaboine et al^[53] noted the perinatal mortality to be 20.7% (12% stillbirth, 8.5% neonatal deaths). NICU admission in a study by Shah RK et al was 38% whereas Lee et al^[54] noted 59% NICU admissions.

Prompt decision making in terms of early intervention and delivery of the baby helps in improving the perinatal outcome.

CONCLUSION

In low- and middle-income countries, eclampsia is one of the leading causes of maternal and perinatal mortality. It is due to the fact that eclampsia affects almost each and every organ of the body.

Counselling and proper antenatal care play a very important role in prevention of maternal and perinatal morbidity and mortality. Early detection of preeclampsia and timely treatment with antihypertensive drugs may help in reducing the incidence of antepartum eclampsia. Patients should be taught about the various warnings signs of eclampsia and should seek early treatment in such cases.

Patients with such high-risk pregnancies should be made aware regarding the need of proper antenatal care and delivery at a tertiary care hospital in view of maternal complications that may arise during parturition.

The provision of high-quality prenatal health care, appropriate investigations, prompt delivery, and intensive monitoring during the intrapartum and postpartum periods has the potential to improve the maternal and perinatal outcomes.

Lastly, any disease needs a multidisciplinary approach for its mitigation. This involves strengthening the already existing government programmes to provide tertiary care level service at primary health centres to save precious time lost in transportation which helps save both the mother's and foetus's lives.

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Nil

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