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## CURRENT TRENDS IN ECLAMPSIA AT TERTIARY CARE HOSPITAL

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### ABSTRACT

**Aims and Objectives:** (1) To evaluate the incidence of eclampsia (2) To study material and perinatal outcome in eclamptic patients and its management.

**Methodology:** Prospective study was done between July 2007 to June 2012. A total of 308 patients with eclampsia were included in the study.

**Results:** The incidence of eclampsia is about 1.31 %. Majority of patients were primipara and between 21-25 years of age group. 97.1% of patients showed good response to MgSO<sub>4</sub> therapy. 53.9 % patients had vaginal delivery while 46.1 % patients had LSCS.

**Conclusion:** Eclampsia is not a totally preventable disease but its incidence can be decreased by proper antenatal care, early diagnosis of Pregnancy Induced Hypertension (PIH) and its proper management.

### INTRODUCTION

Eclampsia is defined as new onset of grandmal seizure activity &/or coma during pregnancy, labour or postpartum in a woman with signs or symptoms of preeclampsia, more than 50% occur in third trimester.<sup>1</sup> It is one of the leading cause of maternal & perinatal mortality as well as morbidity throughout the world.<sup>2,3</sup> Every year more than 50,000 deaths occurred due to eclampsia, most of which occurs in developing countries.<sup>4</sup> Recent series reports antepartum eclampsia in 38-53% and postpartum eclampsia in 11-44%.<sup>1</sup> Primigravidas are at higher risk of developing eclampsia and that antepartum convulsions are more dangerous than those beginning after delivery.<sup>5,6</sup> Incidence of eclampsia is said to be declined, still is a major problem for maternal mortality associated with increased risk of abruptio placenta, disseminated intravascular coagulation (DIC), acute renal failure (ARF), cerebral hemorrhage. It also reduces utero-placental perfusion, places the foetus at high risk for intra uterine growth retardation (IUGR),

preterm birth, and perinatal mortality.<sup>6</sup>

The main pathology might be generalized vasoconstriction and the endothelial dysfunction and signs and symptoms appear in late mid trimester or in the advanced stage of disease. Mainstay of management in case of eclampsia is early delivery, to improve the prognosis in terms of reducing maternal & perinatal morbidity & mortality. The current study was done to determine the clinical presentation and management of eclampsia, maternal complications and foetal outcome who presented in our institution during the year July 2007 to June 2012.

### AIMS AND OBJECTIVES

- To evaluate the incidence of eclampsia in terms of age, parity, socio economic status and gestational age.
- To study mode of delivery, complications, management of eclampsia and perinatal outcome.
- To recognise various factors influencing the prognosis of maternal and foetal outcome.

## MATERIAL AND METHODS

Prospective study was conducted at the department of obstetrics and gynaecology in one of the tertiary care teaching hospital. 308 cases of eclampsia patients were taken randomly to study the clinical manifestations, mode of delivery, management and its complications. On admission, assessment of each women was done on an individual basis depending on the severity of condition and the gestational age. Once the patients were stabilized with anti-hypertensive and MgSO<sub>4</sub> therapy and detailed history was elicited. Induction of delivery was generally done after 3-4 hours from the last fit. If cervix favourable, induction done with Inj. Oxytocin i.v. infusion drip. If unfavourable, cervix ripened with prostaglandin gel. In case of failed induction cesarean section was done under general anaesthesia.

## RESULTS

In our study, 308 patients of eclampsia were analysed between the period of July 2007 to June 2012. The incidence of eclampsia is 1.31% in our study. During the present study it is noted that about 80% of patients were emergency while 20% were registered patients.

Highest incidence of eclampsia (55.2 %) was seen in the age group of 21-25 years (Table I & Chart I). In our study, almost 74 % of patients were primigravida. About 64.9 % patients had antepartum eclampsia, 15.9 % patients had intrapartum eclampsia while 19.2 % patients had postpartum eclampsia (Table II & Chart II). Highest incidence of eclampsia was seen between 28-36 weeks of gestation (Table III & Chart III) which requires some screening test for prediction of PIH. In our study 88% of patients were having diastolic BP  $\geq 100$ , 10% of patients had no oedema, 57.8% had +1 oedema and 50% had massive proteinuria. Out of 308 patients, 299 patients (97.1%) showed a good response to MgSO<sub>4</sub> therapy (PRITCHARD regime). Only 9 patients (2.9%) required other anti convulsant therapy. Among those 9 patients, 3 had status

epilepticus, 3 had two convulsions after MgSO<sub>4</sub> therapy and 3 were known case of epilepsy. In patients with atypical eclampsia or prolonged coma, other diagnosis should be considered in women with onset of convulsion more than 48 hours postpartum or in women with focal neurological deficits. In present series, 53.9% of patients had vaginal delivery and 46.1% had cesarean delivery (Table IV). Out of total 308 babies, 9 were stillborn. In 50 live preterm births, 18 babies were expired due to low birth weight and birth asphyxia. Out of 179 live full term babies 9 were expired – 3 due to meconium aspiration and 6 due to birth asphyxia (Table V & VI, & Chart IV). In our study, maternal complication rate was 24.4% while maternal mortality rate was 5% (Table VII & VIII & Chart V & VI).

## DISCUSSION

The hypertensive disorders of pregnancy (HDP) and particularly the pre eclampsia- eclampsia syndrome remain the leading cause of pregnancy related morbidity and mortality worldwide.<sup>7</sup> Hypertensive disorders of pregnancy affect almost 7 % of all pregnancies and remain one of the leading causes of adverse maternal and neonatal outcomes, both in developed and developing world. Eclampsia is a major cause of maternal mortality along with hemorrhage and infection.<sup>8</sup> This is second most common cause of maternal death during pregnancy.<sup>9</sup> The incidence of eclampsia is 1.31% in our study while Olakunle et al shows incidence of 1.61%.<sup>10</sup> The data from public hospitals show a high incidence of eclampsia because all complicated cases from smaller centers, even private clinics are shifted when a patient's condition deteriorates.<sup>11</sup> There is a better understanding of pathophysiology of eclampsia in recent years. It is now generally accepted that eclampsia is a multi-organ disorder unique to human pregnancy. There is generalized vasospasm affecting tissue perfusion in vital organs like brain, liver, kidney, etc. The cause of

seizures is attributed to platelet thrombi, hypoxia due to local vasoconstriction or foci of haemorrhage in the cerebral cortex. It must be remembered that though eclampsia often follows severe pre-eclampsia, it can come like a bolt from the blue in a woman without preexisting pre-eclampsia.<sup>11</sup> Eclampsia is more common in women who have not taken antenatal care. In India only 60 % of pregnant women receive antenatal care.<sup>11</sup>

Good antenatal care will help in prevention of PIH, early detection of PIH and to modify the severity of PIH by giving proper treatment in time. It was suggested that prophylactic use of aspirin, calcium, vitamin C and E may help in preventing PIH and thus may help in preventing eclamptic fit. Aspirin generated a lot of interest as a prophylaxis for PIH. However, recent studies show that its usefulness is to be confirmed by large multi-centric trials prophylactic use of aspirin is controversial. Some studies have shown low serum levels of anti-oxidants in women with PIH. Anti-oxidants are known to reduce endothelial cell activation.

Eclampsia is a disease specifically of teenage primigravida but highest incidence (55.2%) is seen in age group of 21-25 years in our study. This shift from, teenage to 21-25 years can be explained by late marriages in last few years.<sup>12</sup> In our study, almost 74% patients were primigravida which supports the genetic theory of development of pre-eclampsia where alloimmunity between maternal and foetal tissues is the predisposing factor.<sup>13</sup> Reynolds suggested the possibility of a single gene likely to be responsible for pregnancy induced hypertension (PIH) which is usually responsible for eclampsia in many cases.<sup>14</sup>

Eclampsia can recur in future pregnancies in approximately 2% of eclamptics. In our study, about 65% of patients were antepartum. This is because developing countries still are struggling to cope with inadequate ANC, home deliveries and unsupervised deliveries.<sup>15</sup> In present series, 53.9% patients had vaginal delivery and 46.1 % had

cesarean delivery. Umar et al (2007) showed 48.3 % had vaginal delivery and 51.7 % had cesarean delivery.<sup>16</sup> Vaginal delivery is a safe option resulting in low maternal mortality rates as long as foetal presentation and status are appropriate and labour progresses in an ordinary fashion.<sup>17</sup> Labour should be closely watched to detect emerging complications like eclampsia, cardiac failure, pulmonary oedema, respiratory failure, cerebrovascular accidents, eye complications, fetal complications like foetal distress/ and death. Neonatologist should be present at birth to look after the newborn.

Maternal complication rate was 24.4 % in present series. Rate of complications depends upon number of convulsions, duration of convulsion, duration of admission between hospitalization and last fit, proper nursing care and least time for delivery. Maternal mortality rate was 5 % in our study while Chekari A et al (2008) showed maternal mortality rate of 6.7 %.<sup>18</sup> Analyzing the causes of death it was found that delayed hospitalization, early onset of eclampsia, low socio-economic status of woman and lack of essential obstetric care are fundamental determinants of maternal death.

## CONCLUSION

Eclampsia is not a totally preventable disease but its incidences can be decreased by proper antenatal care, early diagnosis of PIH & pre-eclampsia and its proper management with selective termination to improve maternal and perinatal outcome. This study suggests that MgSO<sub>4</sub> therapy is considered as the best therapy and is very effective in preventing and controlling convulsions. Termination of pregnancy is the primary treatment for eclampsia. Induction of labour with oxytocics and prostaglandins decreases the duration of labour. Cesarean section has definite place to improve fetomaternal prognosis. Incidence of complications in LSCS has become very low due to better operative techniques, proper anaesthesia and easy availability of blood components. If

vaginal delivery fails following induction of labour cesarean section is preferred.

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**Table I: Distribution of age**

Age of patient(years)	No. of patients	Percentage
18-20 Yrs	64	20.80%
21-25 Yrs	170	55.20%
26-30 Yrs	58	18.80%
≥ 30 Yrs	16	5.20%

**Table II: Type of Eclampsia**

Type	No. of patients	Percentage
Antepartum	200	64.90 %
Intrapartum	49	15.90%
Postpartum	59	19.20%

**Table III: Gestational Age**

Gestational Age	No. of patients
<28 weeks	18
28-32 weeks	99
33-36 weeks	108
>36 weeks	24

**Table IV: Mode of Delivery**

Mode of delivery	No. of Cases	Percentage	
Vaginal delivery	166	53.9	
Vaginal delivery	Normal delivery	163	52.9
	Vaccum delivery	3	1.0
Cesarean delivery	142	46.1	

**Table V: Outcome of baby**

	Preterm (104)			Full term (204)		
	IUD	Live Birth	Still Birth	IUD	Live Birth	Still Birth
<b>No. of patients</b>	52	50	2	18	179	7
<b>Percentage</b>	50	48.1	1.9	8.8	87.8	3.4

**Table VI (NICU Admission)**

NICU Admission	No.of babies	Percentage
Preterm	36	34.6
Full term	21	10.3

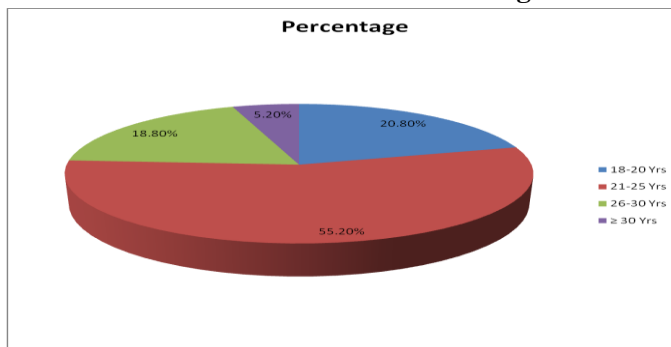
**Table VII: Maternal morbidity and complications**

Parameters	No. of Cases	Percentage
Blurring of vision	18	5.84
PPH	12	3.9
HELLP Syndrome	9	2.9
ARF	9	2.9
APH	9	2.9
Pulmonary embolism	3	1.0
Status Eclampticus	3	1.0
Septisemia	6	2.0
DIC	3	1.0
Aspiration pneumonitis	3	1.0

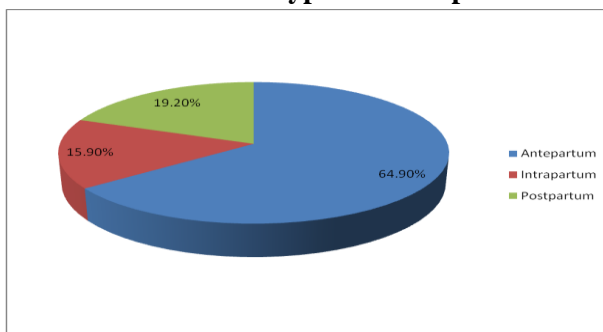
**TABLE VIII: MATERNAL MORTALITY**

Cause of death	No. of Cases	Percentage
DIC	3	1
Pulmonary embolism	3	1
ARF	3	1
Septisemia	3	1
Status Eclampticus	3	1

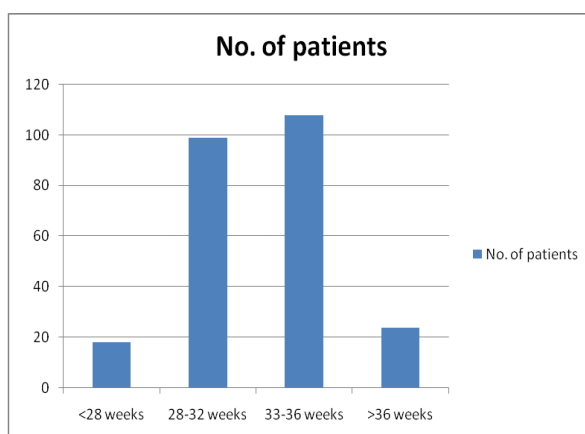
**CHART I: Distribution of age**



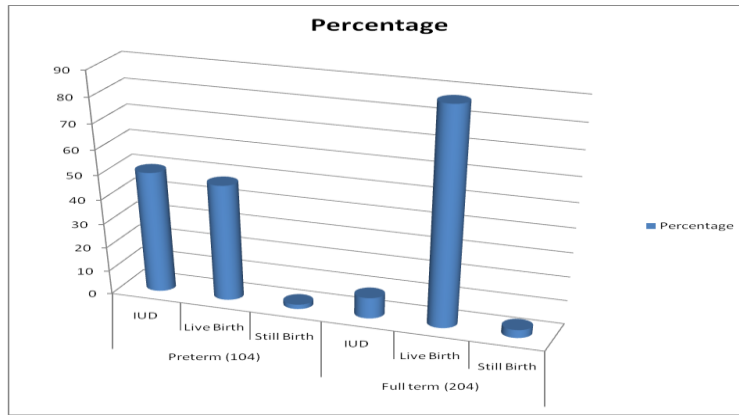
**CHART II: Type of Eclampsia**



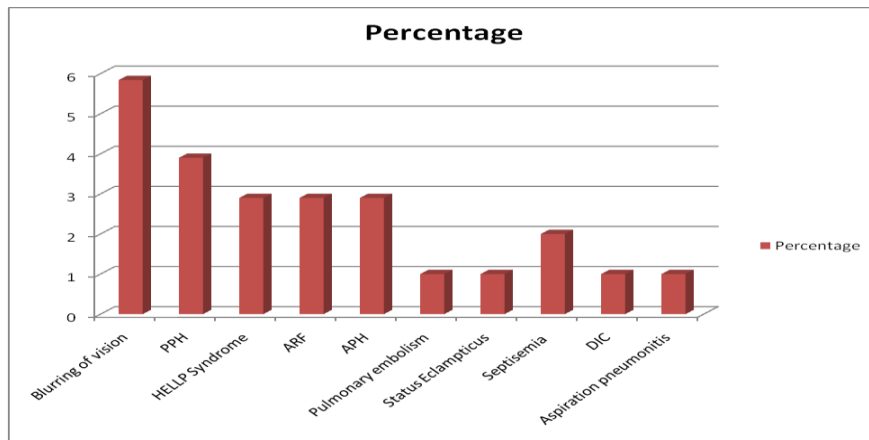
**CHART III: Gestational Age**



**CHART IV: Outcome of baby**



**CHART V: MATERNAL MORBIDITY AND COMPLICATIONS**



**CHART VI: MATERNAL MORTALITY**

