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Clinical profile and outcome of cases of eclampsia at a tertiary hospital of north India

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Abstract
Introduction: Despite being preventable, eclampsia continues to be one of the most common life threatening complication afflicting pregnancy.
Aims and objectives: To study the incidence and the clinical profile in patients of eclampsia.
Material & Method: It was a prospective observational study, undertaken in one of the Obstetric units of Government Medical College, Amritsar from March 2015 to December, 2015. Clinical profile, maternal and perinatal outcome among eclamptic patients was studied in the patients admitted in this tertiary care facility.
Result: In the study period there were 50 cases of eclampsia of which 10 had been referred after delivery for postpartum eclampsia. The incidence of eclampsia was 2.4% amongst deliveries conducted at our institute. 96% of all cases were prim gravidas and 92% were in the age group of 20-35 years. Majority (66%) were having antepartum eclampsia and 56% underwent caesarean section. Most common complication was pulmonary oedema in 12% patients and 16% patients required ICU care. Maternal mortality due to eclampsia was 4% perinatal death was 34 % in eclampsia patients. Eclampsia contributed 15% to all cause maternal mortality.
Conclusion: Improved pre referral care may improve the prognosis in eclampsia.

Keywords: eclampsia, maternal morbidity and mortality, perinatal outcome

Introduction

Hypertensive disorders of pregnancy 5-10% of all pregnancies but continue to contribute 16% of all-cause maternal mortality especially in developing countries [1]. Eclampsia is the most dreaded complication of hypertensive disorders of pregnancy. Preclampsia precedes eclampsia in more than four fifth the cases but atypical presentations are also known. Preeclampsia complicated by generalised tonic-clonic convulsions or coma is called eclampsia. Eclampsia negatively impacts the maternal and foetal outcome. India still continues to have poor maternal and perinatal outcome in these cases as there are under developed healthcare infrastructure and its incomplete penetrance in rural and remote areas. Like preeclampsia, eclampsia is more prevalent in young prim gravida.

Review of Literature

Seizures in pregnancy are due to eclampsia unless proven otherwise. Preeclampsia associated with convulsions or coma is called eclampsia. Preclampsia, in most situations precedes eclampsia but at times there may be no warning. It most commonly affects young prim gravidas and depending on the time of occurrence of convulsion it is categorized into antepartum, intrapartum and postpartum eclampsia. It affects between 1 in 2000 to 1 in 3448 pregnancies in the western world but the incidence may be several times in developing countries [2]. In our country, the incidence of eclampsia range from 0.2%-3.7%) [3-6], the outcomes vary with the quality of pre referral care. Consequently maternal and perinatal outcomes are poor where antenatal care facilities are deficient [5, 6].

Maternal mortality in eclampsia is intolerably high in India, and ranges from 2%-30%. The perinatal mortality in eclampsia patients in India, is still quiet high, about 30 – 50% [3, 6]. Prevention of mortality due to eclampsia is one of the major steps in the direction of achieving SDG of maternal mortality rate of <60/100,000 by 2030 for our country [7].

Aims and objectives

Following were the main aims and objectives of the study

1. To assess the incidence of eclampsia at our centre
2. To study the clinical profile of eclampsia patients
3. To assess maternal and foetal outcomes in these patients

Materials and Method

A prospective observational study was carried out in all patients diagnosed of eclampsia (hypertension, albuminuria, convulsion/ coma) amongst the pregnant patients who were delivered at one of the Obstetric units of Government Medical College, Amritsar from March 2015 to December 2015.

All information regarding demographic profile, antenatal care, clinical finding, and laboratory findings were noted. The cases were managed with the standard protocol of using magnesium sulphate according to Pritchard regimen, antihypertensive therapy and delivery of the patient as the definitive treatment.

The patients were followed upto the discharge from the hospital. The maternofoetal outcome was tabulated. The collected data was analysed statistically.

Results

During the period of March, 2015 to December, 2015 there were 50 admissions with eclampsia, 10 of which were referred after being delivered outside our hospital. There were 1665 deliveries during the study period of which 40 had eclampsia i.e. an incidence of 2.4%. Of the 50 eclampsia only 2 were booked patients and rest i.e. 48 (96%) were unbooked (38 antepartum and 10 postpartum patients). 88% patients were from rural areas and only 12% were urban. 38 patients (96%) were primi gravida. Of the total, 46 patients (92%) were in the age group of 20-35 years. In our study group eclampsia occurred in 60% before 37 weeks of gestation leading to preterm birth. [Figure 1] Number of still birth was 9 (18%) and number of neonatal deaths

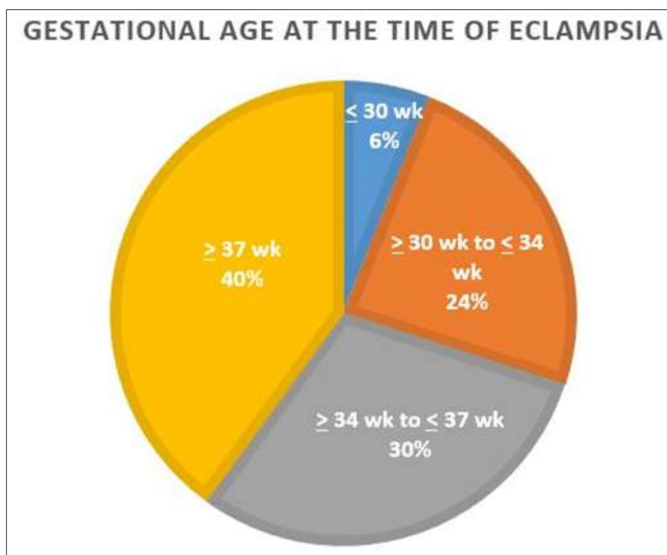

Fig 1: Gestational age at the time of eclampsia.

Was 8 (16%) taking the perinatal mortality to 34%. Caesarean section was slightly more common method of delivery (56%) while vaginal delivery was carried out in 44% patients, of which in one patient forceps was applied.

Of the 48 patients referred from elsewhere only 15 patients (31.2%) received magnesium sulfate before referral of which only 5 (10.4%) received complete loading dose as per standard guidelines.

Eclampsia occurred in the antepartum period in 66%, in the postpartum period in 26% and in the intrapartum period in 4% cases. 4% patients had seizures during the antepartum as well as in the postpartum period.

Maternal Outcome

Severe maternal outcome as defined by WHO as organ system dysfunction was seen in 12% cases of which there were 2 maternal deaths (4%). Another 4 patients were near miss cases requiring ventilator support due to respiratory distress. 7 patients (14%) were normotensive and 86% were hypertensive with severe hypertension seen in 42% cases. 32% patients had no proteinuria. Various complications of hypertension were seen in these patients – pulmonary oedema being the most commonly seen complication in 6 patients (12%), HELLP in 3 patients (6%), abruptio placentae in 3 patients (6%), aspiration pneumonia in 2 patients (4%), PPH in 2 patients (4%) and renal failure in 2 patients (4%). One patient developed posterior reversible encephalopathy syndrome (PRES). Of these 6 (12%) required ICU management [Table 1].

Table 1

S. No.	Maternal Complication	Number of Cases	Percentage
1.	Pulmonary Oedema	6	12%
2.	HELLP Syndrome	3	6%
3.	Abruptio Placenta	3	6%
4.	Aspiration Pneumonia	2	4%
5.	Postpartum Haemorrhage	2	4%
6.	Renal Failure	2	4%
7.	PRES	1	2%
8.	Need for ICU Care	6	12%
9.	Maternal Death	2	4%

Other co-morbid conditions seen in these patients were severe anaemia (14%), previous CS (6%), malpresentation (4%), obstructed labour (4%) and pulmonary tuberculosis (2%).

Perinatal Outcome

Of the 50 cases of eclampsia, there were 9 pregnancies with intrauterine foetal demise and 8 of the live births expired within 1 week of birth making the perinatal mortality 34%. [Figure 1]

Fig 1: Depicting perinatal outcome.

Discussion

As per our findings incidence of eclampsia among the deliveries carried out in our Obstetric unit was 40/1665 deliveries i.e. 2.4 %, which was similar to the incidence rate (0.2- 3.2%) reported in tertiary care centres in other parts of

the country [3-6]. The incidence of eclampsia was much higher than that of developed countries like the Britain, where incidence was just 0.05% [8]. Eclampsia was more prevalent in younger primigravidas (96%) which is similar to other studies which reported a range of 70-90% [5, 6, 9]. 96% of these patients were not booked with our centre. Half of the unbooked patients had no antenatal care and rest of them had at least 3 antenatal visits but hypertension went undetected. Inadequate quality antenatal care leads to development of eclampsia which has been proved in many studies (76-94% cases) [10]. Less than 1% of our booked cases who received adequate antenatal care had eclampsia.

Poor antenatal surveillance leads high risk of progression of preclampsia to eclampsia in developing countries. 26% of eclampsia were postpartum while 66% were postpartum. In the western countries had lower incidence of antepartum eclampsia which is due to better antenatal surveillance [8, 11]. 86% of patients had severe hypertension at presentation, 7 patients (14%) had normal BP recording at presentation and 42% had severe hypertension. A similar study done by Mattar *et al*. showed 20% -54% of the patients had severe hypertension, while 30-60% had mild hypertension and 16 % of the patients were normotensive [12]. Although proteinuria is the essential finding in cases of preclampsia it might not be present in all. In our study 14% had no proteinuria. Our findings were similar to the study done by Mattar [12]. Caesarean section was the mode of delivery in 56% cases while 44% had vaginal delivery similar to a study done by Sibai [13]. Eclampsia as such is not an absolute indication for caesarean section and mode of delivery did not alter the outcome of eclampsia patients. The decision to perform caesarean section should depend on stage of pregnancy, foetal condition and maternal condition. Well timed and prudence in selecting either vaginal delivery or caesarean section can improve the maternal and perinatal outcome [14]. Severe maternal outcome was seen in 12% cases of which there were 2 maternal deaths (4%) and 8% needed ventilator support. There were a total of 13 maternal deaths during the study period and eclampsia accounted for 15%. Organ failure was seen in 14 cumulative cases which included pulmonary oedema, renal failure, coagulopathy, hepatic involvement and coma. There were 17 perinatal deaths due to eclampsia. According to the Royal College of Obstetricians and Gynaecologists (RCOG) good antenatal services to effectively tackle preeclampsia can reduce progression to eclampsia [15, 16]. Effective and deft management of eclampsia can improve the maternal and perinatal outcome.

Conclusions

Eclampsia, despite being preventable, is significant cause of maternal and perinatal morbidity and mortality due to deficiencies in antenatal care and poor implementation of evidenced based emergency obstetric at peripheral centres. The higher mortality is due to high percentage of patient being unbooked, majority receive no therapeutic intervention until admission. Government Medical College, Amritsar is a tertiary referral centre for many health centres which in turn cater areas where there is lot of poverty, lack of awareness and poor antenatal services. All these lead to delay in detection of warning symptoms preceding eclampsia leading to a delay in management. Appropriate use of magnesium sulphate in peripheral centres, expeditious referral, transport facility provided by government and a policy of well-timed delivery has contributed to the fact that fewer of these patients are suffering organ dysfunction defining near-miss mortality [17]. Maternal and newborn deaths due to preeclampsia/ eclampsia are preventable: by increasing community awareness about the condition, improving antenatal care quality, and scaling up proven best practices to prevent mild pre-eclampsia's escalation to severe pre-eclampsia and eclampsia. By detecting and managing pre-eclampsia, judiciously, thus preventing eclampsia, can improve the survival rate of women and babies in developing countries.

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