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Overview of Eclampsia at a Tertiary Care Hospital

Shakya B, Vaidya A
Department of Obstetrics and Gynecology, Paropakar Maternity and Women's Hospital, Kathmandu, Nepal.

Aims: The aim was to study about the morbidity and mortality of eclampsia cases at Paropakar Maternity and Women's Hospital, Kathmandu, Nepal.

Methods: This is a retrospective study undertaken at Paropakar Maternity and Women's Hospital, Kathmandu, Nepal on 45 eclampsia cases between14 April 2010 to 16 July 2011.

Results: Out of 31,674 obstetric admissions, 45 (0.14%) were eclampsia cases of which 42.2% belonged to 20 - <25 years and 28.8% in 17- <20 years age group occurring mostly in primipara (71.1%). Antepartum and postpartum eclampsia were 77.7% and 22.2% respectively. Majority of them presented at 36-40 weeks'(46.6%), unbooked cases being 80% and 20% had antenatal check-up at this hospital. The diastolic blood pressure on admission recorded was 110-130 mmHg (55.5%), headache being the most common symptom(53.3%), blurred vision (22.2%), HELLP syndrome (4.4%) and urine albumin 3+ (46.6%) at the time of admission. Magnesium sulphate was used as anticonvulsant, loading and maintenance dose (40%) and only as loading dose (33.3%). Though fetal outcome was normal in 44.4% cases, rest were premature (24.4%), intrauterine growth restriction (17.7%) and intrauterine fetal demise (13.3%). Three (6.6%) cases were referred to multidisciplinary center. Maternal mortality occurred in two (4.4%) cases (cardiopulmonary arrest and prolonged hypoxia).

Conclusions: When patients with eclampsia presented late, significant morbidity like HELLP syndrome, renal failure and central nervous disorder occurred and muti-organ damage leading to maternal mortality.

Keywords: eclampsia, morbidity, mortality.

INTRODUCTION

Preeclampsia is the occurrence of hypertension in combination with proteinuria, developing after 20 weeks' gestation in a previously normotensive non-proteinuric patient. Eclampsia is defined as the occurrence of generalized convulsion(s) associated with signs of preeclampsia during pregnancy, labour or within seven days of delivery and not caused by epilepsy or other convulsive disorders. In the absence of a high blood pressure or if the convulsion occurs after day seven postpartum, the condition is referred to as atypical eclampsia.[1] Preeclampsia/eclampsia produces multiple systemic derangements that can involve a diversity of organ systems. Preeclampsia can rapidly progress to eclampsia, especially if untreated.[2]

Based on an estimate by the World Health Organization in 1990, 585,000 women die each year, more than one each minute, due to pregnancy-related causes.[3] Eclampsia is the second most common cause of maternal mortality. Eclampsia and preeclampsia account for approximately 63,000 maternal deaths annually worldwide.[4] In developed countries, the maternal death rate is reportedly 0 – 1.8%. The maternal mortality rate is as high as 14% in developing countries. The perinatal mortality rate from eclampsia in the United States and Great Britain ranges from 5.6% to 11.8%.[5-7]

CORRESPONDENCE
Dr Beemba Shakya
Department of Obstetrics and Gynecology,
Paropakar Maternity and Women's Hospital,
Kathmandu, Nepal.
Email: docbeemba@yahoo.com
Phone: +977-9841729847

The objective of this study was to review the morbidity and mortality of eclampsia cases at Paropakar Maternity and Women's Hospital(PMWH).

METHODS

This wasa retrospective study undertaken at PMWH. Ethical approval was taken from the hospital. The medical records of admission room and intensive care unit (ICU) were reviewed from 14th April 2010 to 16th July 2011. The charts were collected from medical record sectionand analysed.

RESULTS

During the study period, total obstetrics admissions were 31,674. Of these, 45(0.14%) were eclampsia cases.

Table 1. Characteristics of patients (n=45).

Age (years)	Number (%)
15-19	13(28.8)
20-24	19(42.2)
25-29	7(15.5)
30-34	3(6.6)
35-40	3(6.6)
Parity	
P1	32(71.1)
P2-3	10(22.2)
P4-5	2(4.4)
P6	1(2.2)
Period of gestation (weeks')	
26-30	2(4.4)
31-35	11 (24.4)
36-40	21(46.6)
41	1(2.2)

Thirty-six (80%) were unbooked cases (22 were supervised elsewhere, 14 had no ANC)while 9 (20%) cases had antenatal check-up at PMWH. Of them, 35 (77.7%) had eclampsia at antenatal period and rest had eclampsia at postpartum period.

Table 2. Diastolic blood pressure (DBP) on admission (n=45).

DBP (mmHg)	Number (%)
140	1 (2.2)
110-130	25 (55.5)
100	15 (33.3)
90	2 (4.4)
80	1 (2.2)
Not recordable	1 (2.2)

Table 3. Urine albumin on admission (n=45).

Urine albumin	Number (%)
4+	6 (13.3)
3+	21 (46.6)
2+	5 (11.1)
1+	3 (6.6)
Trace	5 (11.1)
Nil	5 (11.1)

Twenty-four (53.3%) had presented with headache, 10 (22.2%) blurred vision, 8 (17.7%) edema and 3 (6.6%) epigastric pain.

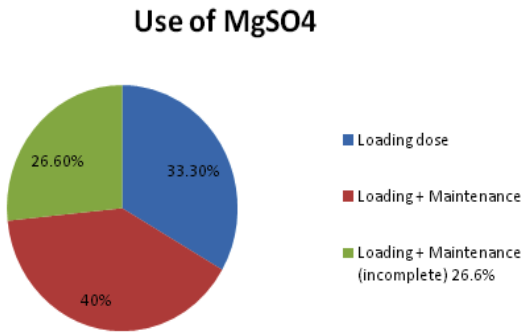

Figure 1. Use of MgSO4.

Two cases (4.4%) developedhemolysis, elevated liver enzymes and low platelet count (HELLP) syndrome, one antepartum and another postpartum.

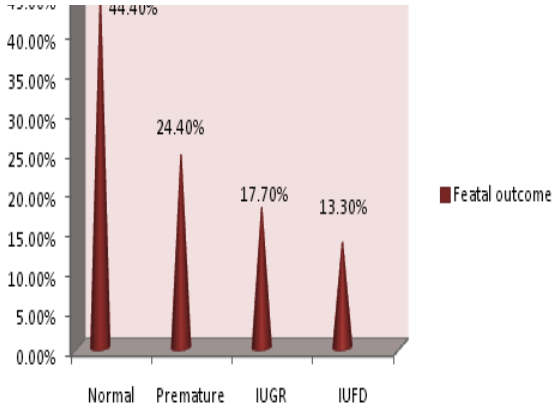

Figure 2. Fetal outcome.

Three (6.6%) cases were referred to multidisciplinary center (2 cases with renal failure and third one with suspected central nervous system disorder). Maternal mortality occurred in 2 (4.4%) cases (one died of cardiopulmonary arrest while the another one presented with atypical eclampsia, died of prolonged hypoxia).

DISCUSSION

The incidence of eclampsia is high in developing countries (1.6 and 12 per 1,000 live births, respectively, in Colombia and India).[8] In a study conducted in Bangladesh, among 32,999 obstetric patients admitted to the hospital during the years 1998 to 2000, 2956 were eclamptic, yielding an incidence of 9%.[9]In our study, the incidence of eclampsia is 0.14% out of 31,674 obstetrics admitted cases.

In our study, the socio-demographic variables showed that eclampsia occurred most frequently in 20-24 years of age group(42.2%), mostly seen in primipara (71.1%) and majority at 36-40 weeks' period of gestation (46.6%){Table 1}. This is comparable with other studies which revealed the peak age range between 20-29 years (75.6%), primigravidae contributed the commonest parity (54.7%) and peak gestational age was at term (74.4%).[10,11]PreviousNext Section: Etiologic and Risk Factors for Preeclampsia/ Eclampsia Our study showed unbooked cases (80%) in majority; which is similar to a study conductedin Bangldesh where the majority of cases of eclampsia occurred in patients who had no (78%) or irregular (20%) antenatal care, and the majority of eclamptic patients who died had arrived the hospital at a later stage of the disease with grave complications.In the same study, eclampsia occurred 80% antepartum and 20% post-partum which is comparable with the present studydepicting antepartum and postpartum eclampsia as 77.7%and 22.2%respectively.[9]

In a study by Zain et al,[12] headache was the most common presenting symptom and present in over two-thirds (69.1%). In another study, in 79% of cases, premonitory signs and symptoms were present during the week before the first eclamptic seizure: headache (56%), visual disturbances (23%), epigastric pain (17%), hypertension (48%), proteinuria (46%), and concurrent hypertension and proteinuria (38%).[13] Similarly, in our study, the diastolic blood pressure on admission was 110-130 mmHg (in 55.5%),mostly presented with headache (53.3%) followed by blurred vision(22.2%) and epigastric pain (6.6%). Significant proteinuria was present in 46.6% cases (Table 2 and 3).

In the present study, Magnesium sulphatewas used for loading and maintenance dose in 40% cases, loading dose only in 33.3%while 26.6% had incomplete maintenance dose due to absence of deep tendon reflexes and/or decreased urinary output (Figure 1). Other studies showedthat magnesium sulphate was associated with a significant reduction of recurrent seizures, the risk for pneumonia, and admission to an intensive care unit.[14,15] In one study, HELLP syndrome occured in about 0.5 to 0.9% of all pregnancies, 10 to 20% of cases with severe preeclampsia[16,17]and 20-25% of patients with eclampsia.[18]The syndrome presented antepartum in 69% of patients and postpartum in 31% of patients.[19]In women with post-partum HELLP syndrome, risk of renal failure and pulmonary oedemaincreased significantly compared to those with an antenatal onset.[20,21]In another study, the mortality rate for women with HELLP syndrome was 1.1% where one to twenty-five percent of affected women developed serious complications such as disseminated intravascular coagulation, abruptio placentae, acute respiratory distress syndrome, hepatorenal failure, pulmonary edema, subcapsular hematoma and hepatic rupture. A significant percentage of patients received blood products.[22]Inour study,HELLP syndrome was seen in 2 (4.4%) cases. Both were managed with blood products. Among them, one was referred from other health centre following vaginal delivery, which was again referred to nephrology unit due to renal failure. The next case underwent cesarean section and was recovered.

One study showed that abruptio placentae (0-6%), intrauterine growth restriction (5-18%), and perinatal mortality (0-9%) were not uncommon. The fetal mortality rate varied from 13-30% due to premature delivery and its complications.[15] In our study, the perinatal outcome revealed normal babies in 20 (44.4%), premature 11 (24.4%), intrauterine growth restriction 8 (17.7%) and intrauterine fetal demise 6 (13.3%){Figure 2}.A study from the US found an overall preeclampsia/eclampsia case-fatality rate of 6.4 per 10,000 cases at delivery. The study also found a particularly high risk of maternal death at 20-28 weeks' gestation.[23] In another study, the most significant maternal complication of eclampsia was permanent CNS damage secondary to recurrent seizures or intracranial bleeding. The maternal mortality was 8-36% in these cases.[24] Because of such severe complications; the appropriate therapy for eclampsia should be initiated as early as possible. In our study, three cases (6.6%) were referred to another hospital for multidisciplinary support (2 cases with renal failure and another case with CNS disorder). There were 2 (4.4%) maternal deaths. One died due to cardiopulmonary arrestafter 6 hours of admission. Anothercase that presented with atypical eclampsiadied ofprolonged hypoxia.

CONCLUSIONS

When patients with eclampsia presented late, significant morbidity like HELLP syndrome, renal failure and central nervous system disorder occurred. Muti-organ damage in some led to maternal mortality.

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