

Faeto Maternal and Perinatal Outcome of Patients with Complicated Sever Pre Eclampsia in Libya

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Abstract

Eclampsia is a major cause of maternal and neonatal morbidity in low- and middle-income countries. This study aimed at assessing the faetomaternal , perinatal and neonatal outcome in patients with eclampsia in order to get reasonable data that help in reducing the incidence and improving the outcome of pregnancy.

The retrospective study included 250 patients diagnosed with eclampsia in Zawia hospital ,Subrata hospital ,Surman hospital in the

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period between January 2010 and December 2017. The study analyzed the data obtained from medical records of those patients including patients' characteristics, medical, obstetric, current pregnancy history, data on hospital admission, treatment given at hospital, and maternal and perinatal outcome. Statistical analysis was done using SPSS version21

The study was done on 250 women who diagnosed with eclampsia. Four women died (case fatality rate 1.6%). The main risk factors that were identified : younger age , primigravida. The most common complication was HELP syndrome(15.6%). Magnesium sulphate therapy was given to all patients. 73 cases were delivered vaginally (29.2%). Cesarean section was done in 177 cases (70.8%) . Perinatal deaths occurred in 11.9 % of the cases. Prematurity and poor neonatal services were the main cause. Improving antenatal and emergency obstetric and neonatal care are mandatory to improve the outcome.

***Keywords:** Eclampsia, maternal mortality, maternal morbidity ,perinatal outcome*

1. Introduction

Hypertensive disorders (HD) are the most common medical disorders complicating pregnancy with overall prevalence between 5 - 10% and are considered as a main cause for maternal and perinatal morbidity and mortality worldwide [1, 2]. Eclampsia is defined as occurrence of convulsions in association with pre-eclampsia and is a serious life threatening complication of HD of pregnancy [3].

The incidence and morbidities associated with eclampsia varies greatly between developed and developing countries. Global and regional estimates indicated a crude incidence of eclampsia fluctuating from 0 to

0.1 in Europe and up to 4% in Nigeria [4, 5]. The case fatality rate (number of deaths/number of cases) of eclampsia ranges from 0-1.8% in high-income countries [6]. These data highlight the impact of the socioeconomic standard and availability of medical facilities on the magnitude of the problem.

HD of pregnancy account for 14.9% of causes of maternal mortality [7]. However, there are no clear records estimating the exact incidence and morbidities and mortalities associated with eclampsia.

The aim of this study is to assess the faeto maternal ,perinatal and neonatal outcome in eclamptic patients .

Methods:

This study was a retrospective study . Data were analyzed including demographic data, clinical presentation, medical treatment received, method and outcome of delivery, maternal and perinatal outcome and discharge data. Medical records of all patients who gave birth at the hospital at the same time period were retrieved and their demographic data were filled in data collection performa for comparison.

Inclusion criteria:

Eclampsia defined as reliable history of seizures at home, on the way to the hospital or inside the hospital in association with high blood pressure and proteinuria.

Exclusion criteria:

All cases with epilepsy, encephalopathy, tetanus, meningitis, hypoglycemia, ketoacidosis; pyrexia and suspected drug toxicity were excluded. These cases were included in all deliveries group

Statistical analysis:

Statistical analysis was performed using the Statistical Package for Social Science (SPSS Inc, Chicago) version 21 for Microsoft Windows. Descriptive statistics were used to examine the distribution of patients' characteristics and the outcomes. A single logistic regression model was applied to estimate the relationship between the risk factors as independent variables and eclampsia as the outcome. A P value <0.05 was considered significant.

Ethical statement:

As the study was retrospective, Obtaining consent forms from patients was not applicable.

Results:

Table 1: Age and parity in the study population:

Age	Deliveries	%
< 20 years	106	42.4%
20-29 years	89	35.6%
30-34 years	38	15.2%
>35 years	17	6.8%
Nullipara	36.7%	77.2%
Multipara	63.3%	22.8%

Table 2: The presenting symptoms and signs of cases on admission:

	Frequency	Percentage
Seizures	42	16.8%
Headache	67	26.8%
Visual disturbances	23	9.2%
Labour pain	22	8.8%
Proteinuria	241	96.4%
Jaundice	14	5.6%
Vaginal bleeding	5	2%
Oedema	56	22.4%

Of 250 women, 22 cases presented in labor, 77 cases had induction of labor and 151 cases delivered with primary cesarean section. The onset and mode of deliveries in the study population are shown in Table 3.

Table 3: Onset and mode of delivery in the study population:

	Number	Percentage
Onset of labour:		
-Spontaneous	22	8.8%
-Induced labour	77	30.8%
- caesarean section	151	60.4%

Four maternal deaths occurred in the patients: two cases due to massive intracranial hemorrhage, one case due to HELLP syndrome, and one case due to intractable postpartum hemorrhage. Case fatality rate (CFR) was 1.6%. Maternal morbidities and mortalities are shown in Table 4.

Table 4: Maternal complications in patients with eclampsia:

	Number	Percentage
Placental abruption	7	4.6%
Disseminated intravascular coagulopathy (DIC)	19	7.6%
Postpartum hemorrhage	24	9.6%
Intracranial hemorrhage	2	0.8%
HELLP syndrome	39	15.6%
Acute pulmonary oedema	2	0.8%
Renal impairment	18	7.2%
Liver impairment	26	10.4%
Anesthetic complications	6	2.4%
Massive blood transfusion	9	3.6%
Septic complications	4	1.6%
Maternal death	4	1.6%

Table 5: Medications received by the study population:

	Number	Percentage
Magnesium sulfate and antihypertensive treatment	250	100%

Table 6: Perinatal outcome:

	Number	Percentage
Gestational age on admission:		
26-28 weeks	4	1.5%
28-34 weeks	112	42.9%
>34 weeks	145	55.6%
Birth weight (gram):		
≤500	1	0.4%

	Number	Percentage
500-750	3	1.2%
750-1000	12	4.6%
1000-1500	59	22.6%
1500-2500	99	37.9%
>2500	87	33.3%
Apgar score at 5 minutes:		
0	7	2.7%
1-2	10	3.8%
3-6	14	5.4%
≥7	230	88.1%
Neonatal outcome:		
Stillbirth	7	2.7%
Early neonatal death	24	9.2%
NICU admission	49	18.8%
Hospital discharge	181	69.3%

NICU Neonatal intensive care unit

Discussion:

This study analyzes the maternal and perinatal outcome in patients with eclampsia . The percentage of patients with eclampsia in this study was 1.2% which is much higher than European and Gulf countries Kullberg [8, 9, 10, 11] while lower than the incidence reported in Asian and sub-Saharan African countries [12, 13, 14, 15]. This difference is obviously attributed to the variation in socio-economic level and standards of ante-natal care.

Table 1. identify Maternal age was a risk factor with 106 patients (42.2%) was < 20 years. However, this reflects young age at marriage is associated with increased incidence.

Primigravida is a well-known risk factor for eclampsia [16, 17]. In the current study, 77.2% of patients were primigravida.

Twenty-two patients (8.8%) were presented in labor, while 77 (30.8%) patients had induction of labor and 151 (60.4%) patients had a primary cesarean section. Intrapartum cesarean section was performed for 6/22 (27.3%) of those who presented in labor and 20/77 (26%) of those who had induction of labor giving a total number of cesarean section of 177/250 (70.8%). This high rate of the cesarean section might have many explanations including lack of monitoring facilities during vaginal delivery which obviously takes longer time in addition to uncontrollable blood pressure during vaginal delivery. Inadequate fetal monitoring equipment and lack of fetal scalp sampling in the hospital are also responsible for the low threshold of performing a cesarean section for patients in labor.

The most common complications of eclampsia identified in this study were HELLP syndrome 39/250 (15.6%), Liver impairment 26/250 (10.6%), postpartum hemorrhage 24/250 (9.6%), disseminated intravascular coagulopathy 19/250 (7.6%) and renal impairment 18/250 (7.2%). There were two cases of intracranial hemorrhage. Four cases of sepsis were identified; all of them occurred in cases delivered by cesarean section. The high incidence of hepatic complications in the study population highlights the importance of studying the antenatal liver abnormalities in the pregnant population and its impact on pregnancy outcome . There were four cases of maternal mortalities in the study population: two cases due to massive intracranial hemorrhage, one case

due to HELLP syndrome and one case due to intractable postpartum hemorrhage. The case fatality rate was 1.6%, which is lower than the rates quoted in Nigeria (6.5%) and Tanzania (11%) but higher than the rates quoted in UK and Sweden (0%) [8, 9, 10, 11, 14, 15, 19].

Magnesium sulfate therapy was administered in all patients as per hospital guidelines that reflect availability and orientation with its role in preventing further seizures. In addition, we do not have sufficient data about whether the proper dose was given or not. The infusion pump sometime is not available

, so, we depend on clinical monitoring by the nursing staff. We have a high workload at the hospital and relatively insufficient nursing staff, so improper dosing or early discontinuation of treatment is likely.

In addition, to the delay in the use of MgSO₄ and improper control of BP. Therefore, aggressive interventions to improve care are warranted.

There were 7 cases of stillbirth; 5 ante-natal and 2 intrapartum deaths and 24 cases of early neonatal deaths giving a perinatal mortality rate (PNMR) of 11.9% which is a higher rate as compared with that quoted from studies in Europe and Gulf countries [8, 9, 10, 11]. Studies assessing PNMR in preeclampsia and eclampsia in Latin America identified a rate of 3.26% [18]. Studies in African countries identified varying rates from 11.39% in Algeria to 22.11% in DRC [18]. PNMR from eclampsia only was 30% in Tanzania [14]. In Asian countries with low or middle income, the PNMR in pre-eclampsia and eclampsia varies from 1.3% in Vietnam to 15.76 in Nepal [18]. Most of the perinatal deaths in the current study were in premature babies. The inadequate treatment of preterm neonates and insufficient NICU are the major contributing factors to these death

Conclusions:

In our setting, eclampsia remains a major risk to maternal and neonatal lives. The young age and primigravida are risk factors in our study. PNMR was high and mainly attributed to prematurity. Health policies need to be implemented to provide better ante-natal care with more orientation about the importance of early detection of cases with high blood pressure during pregnancy to avoid the development of complications. Better Education and training of health workers is mandatory to improve the care of critical cases. and improving neonatal services can reduce the rate of neonatal complications. Further studies are needed to assess the influence of mode of delivery on maternal and neonatal outcome in cases with severe pre-eclampsia and eclampsia.

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