

Improving The Clinical Outcome In Cases Of Eclampsia: The Experience At Lagos State University Teaching Hospital, Ikeja

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Abstract

Eclampsia continues to be a major cause of maternal and perinatal mortality in developing countries. There is a need for continued in depth studies into its characteristics and patterns in order to improve the clinical outcome.

This study sought to determine the patterns and characteristics of the disease with a view to making recommendations towards improving outcome.

The case records of patients managed for eclampsia at LASUTH, between 1999 and 2003 were analysed. Data on sociodemographic characteristics as well as clinical management and outcome was extracted.

The incidence of eclampsia was 1.66% of all the deliveries. 88.9% of the eclamptics were unbooked patients. 65.4% were primigravidae and 75.7% below 30 years of age. 53.7% delivered by caesarian section while 40% had instrumental vaginal delivery. Complications included acute renal failure, aspiration pneumonitis and abruptio placentae.

Maternal mortality was 6.7%.

The incidence of eclampsia remains unacceptably high. The institution of vigilant antenatal care to detect risk factors and prompt treatment of cases of pre-eclampsia will ameliorate the disease burden.

INTRODUCTION

Eclampsia is defined as seizure activity or coma unrelated to other cerebral conditions in an obstetrical patient with preeclampsia¹. It is one of the leading causes of maternal and perinatal mortality as well as morbidity throughout the world^{2,3}. Eclamptic seizures occur in the second half of pregnancy and occurrence up to 10 days after delivery had been documented⁴. While the incidence has been decreasing and its outcome improving in the developed countries¹, where special management protocols have been employed^{1,2}, its incidence is still high in developing countries such as Nigeria³. Pre-eclampsia is a multisystem disease and despite extensive research, no definitive etiology has been identified¹.

The Department of Obstetrics and Gynaecology of the Lagos State University Teaching Hospital, Ikeja has one of the largest maternity units in the south western part of Nigeria and is the referral centre of choice for all the primary and secondary government health facilities as well as a wide array of private hospitals.

This study was undertaken to determine the incidence of eclampsia, identify the predisposing socio-demographic factors, demonstrate clinical profiles and analyse modes of management and resulting maternal and fetal outcome at the Lagos State University Teaching Hospital. This was with a view to making recommendations towards reducing the incidence and improving the clinical outcome.

PATIENTS AND METHODS

All the patients managed for eclampsia at the Obstetrics and Gynaecology department of the Lagos State University Teaching Hospital, Ikeja, Lagos, Nigeria between the 1st of January 1999 and 31st December 2003 were reviewed. Specially designed forms which captured the required clinical information were used. Such information included age, parity, booking status, gestational age at presentation, time of onset of fits (antenatal, intrapartum, postpartum) blood pressure at the time of fits or arrival at the hospital, the climatic season at the time of presentation, treatment modality employed, mode of delivery as well as the fetal and maternal outcome.

The diagnosis of eclampsia was based on the occurrence of generalized tonic-clonic convulsions during pregnancy, labour or within seven days of delivery after excluding a previous history of epilepsy or other convulsive disorders.

Booked patients were those who registered at the hospital for antenatal care and delivery. Rainy season was considered to be from April to October while dry season was taken from November to March.

The χ^2 test was used to determine levels of statistical significance where appropriate.

RESULTS

There were 13,875 deliveries during the 5-year study period. A total of 214 patients were diagnosed with eclampsia giving an overall incidence of 1.66%.

Of the 12,875 deliveries, 4155 were primigravidas amongst which 89 (2.14%) developed eclampsia compared to 47 out of 8720 (0.53%) patients who were multigravidae. ($p < 0.01$). One hundred and twenty six patients (92.6%) had singleton pregnancies.

Table I shows the age distribution of the eclamptic patients. The age range was from 16 to 50 years. The mean age was 23.8 years and 76.4% of the patients were below 30 years old.

Figure 1

Table 1: Age Distribution Of Eclamptic Patients

Age(years)	Number of patients	Percentage (%)
<20	24	17.6
21 -30	80	58.8
31-40	29	31.4
41-50	3	2.2
TOTAL	136	100

The parity distribution is illustrated in Table II. Most of the patients (65.4%) were primiparas.

Figure 2

Table 2: Parity Distribution Of Eclamptics

PARITY	NO OF PATIENTS	PERCENTAGE (%)
0	89	65.4
1	18	13.2
2	12	8.8
3	10	7.4
4	5	3.7
>5	2	1.5
TOTAL	136	100

121 (88.9%) of the patients were unbooked while only 11.1% was booked.

Regarding the onset of fits relative to delivery, 50 patients (36.8%) had fits in the ante partum period while 62(45%) and 24 (17.6%) had intrapartum and post-partum eclampsia respectively (Table III).

Figure 3

Table 3: Classification By Onset Of Fits

Period	Number of patients	Percentage(%)
ANTEPARTUM	50	36.8
INTRAPARTUM	62	45.6
POSTPARTUM	2	17.6
TOTAL	136	100

The majority of the patients had fitted several times before arrival at the hospital and only 70 (32.7%) of the patients arrived in the hospital within six hours of onset of convulsions.

The clinical findings recorded at the time of the first fit or on arrival in the hospital are listed in Table IV showing that (89.7%) had diastolic blood pressure above 110mm Hg and all the patients had proteinuria.

Figure 4

Table 4: Clinical Findings In Eclamptics At Presentation

SIGN	NO OF PATIENTS	PERCENTAGE (%)
Oedema	91	66.9
Diastolic BP >110mm Hg	122	89.7
Diastolic BP < 100mm Hg	14	10.3
Coarse lung crepitations	33	47
Fever	42	30.9
Proteinuria	136	100

The anticonvulsant of choice in this study, Diazepam was used in 126 patients (92.6%) given by different protocols while lytic cocktail, a combination of Pethidine, Chlorpromazine and Promethazine was used in 10 (7.4%) of the patients. No patient was treated with Magnesium Sulphate.

Caesarean section was employed in 73 (53.7%) patients while 32 (23.5%) patients had spontaneous vaginal delivery as illustrated in Table V.

Figure 5

Table 5: Mode Of Delivery

Mode of delivery	No of patients	Percentage (%)
Caesarean section	73	53.7
Forceps delivery	13	9.6
Vacuum extraction	18	13.2
Spontaneous vaginal delivery	32	23.5
TOTAL	136	100

There were 25 maternal deaths, a case fatality rate of 18.3% and an overall maternal mortality rate attributable to eclampsia of 194.2 per 100,000 deliveries. Maternal complications included acute renal failure (14.7%), aspiration pneumonitis (9.6%) and cerebro-vascular accident (2.2%) . There were 38 perinatal deaths in this series.

Ninety eight (72.1%) of the patients presented during the rainy season while 27.9% presented during the dry season.

DISCUSSION

The incidence of eclampsia (1.66%) in this study is comparable to findings from other centres in the developing countries ^{3,4,5} and higher than figures from the developed countries where there is better compliance with antenatal clinic attendances and easier access to specialist care ^{1,2} . This is further demonstrated by the finding that 88.9% of the patients in this study were unbooked for antenatal care and 60% of those booked had defaulted from clinic attendance suggesting that adequate antenatal care facilitates early identification of risk factors and appropriate intervention to prevent progression to eclampsia.

The significant difference observed in the incidence of eclampsia amongst the very young and the primigravid compared to the multigravid is in keeping with the findings of other studies ^{1,3,4} .

Most of the patients (86.7%) were either from low socio-economic classes or of low educational status. This underscores the interplay between socio economic status, and uptake of available health resources.

The incidence of eclampsia has been reported to be influenced by seasonal variations and in spite of the evidence that arterial blood pressure is higher in cold weather possibly as a result of increased peripheral vasoconstriction ⁶ , there is as yet no consensus on this. This study found that 72.1% of the patients presented during the rainy season and is in agreement with findings from other centers in the same region ^{6,7,8} .

Intrapartum eclampsia accounted for the majority (82.4%) of the cases. This was the finding in some earlier works ^{1,3,4,8} . About 50% of maternal morbidity and over 60% of neonatal morbidity and mortality were associated with antepartum eclampsia in consonance with suggestions that it has a more severe outcome than both intrapartum and postpartum eclampsia ⁹ .

The need for vigilance and close monitoring of patients in the immediate post partum period especially those with features of pre-eclampsia is highlighted by the fact that 85% of first convulsions in the post-partum period occurred within 12 hours of delivery ⁹ .

The mainstay of treatment is the control of fits and the reduction of blood pressure but since only 51.4% of the patients in this study presented within 6 hours from the onset ,it is not possible to significantly influence the clinical outcome by early intervention.

Inspite of the well recognized superiority of magnesium sulphate in the control of eclamptic fits and improvement of feto-maternal outcome ^{1,3,10} , diazepam was the most frequently used anticonvulsant (92.6%) in this study as in most other centres in Nigeria ^{3,4,5} probably because it is cheaper and more readily available ^{7,8} . There is therefore a great need for advocacy amongst care givers to adopt best practice options.

Delivery should be by the most expeditious route ⁶ Vaginal delivery being more physiological is preferred if the cervix is favourable and there are no obstetric contraindications ¹¹ . However 53.7% of the patients in this study had caesarean sections due to unfavourable cervix.

The major complications found in this study, acute renal failure, aspiration pneumonia, puerperal sepsis are in agreement with findings of other studies ^{6,7,8} . Other complications found include abruptio placentae, cerebro-vascular accident, disseminated intravascular coagulopathy and transient blindness.

The maternal case fatality rate of 18.3% is unacceptably high when compared to results from developed countries ^{1,12} , but is comparable to figures from other centres in Nigeria ⁴ This perhaps can be attributed to the severity of the pathology on presentation since most of these patients were unbooked and presented rather late when complications had already set in. It could also be due to lack of appropriate intensive care facilities in these centres.

The perinatal mortality rate of 279/1000 births obtained in this study was significantly higher than the overall rate for the hospital during the period under review and resulted mostly from birth asphyxia, prematurity, and sepsis.

This study illustrates the burden of eclampsia as a public health concern and also identified non utilization of available antenatal care facilities as a major determinant of its prevalence. It also highlights the need to provide intensive care facilities as well as better perinatal care to improve both maternal and perinatal outcome.

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