

ECLAMPSIA: A REVIEW OF SOCIO-DEMOGRAPHIC CHARACTERISTICS AND PREGNANCY OUTCOME IN A NEW TERTIARY INSTITUTION IN NORTH EASTERN NIGERIA

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ABSTRACT

Background: Eclampsia still remains a fatal complication of pregnancy and one of the leading obstetrics emergencies in our sub region.

Objectives: To determine the socio- demographic characteristics, pattern, and maternal and fetal outcome associated with eclampsia in our environment.

Methods: Retrospective reviews of cases of eclampsia managed over two year period (January 2006 to December 2007) at Federal Medical Centre Nguru. Information's pertaining to their socio-demography and pregnancy outcome were obtained for analysis and interpretation.

Results: A total of 2,398 deliveries were recorded out of which 92 were cases of eclampsia giving a Prevalence of 38.4/1000 deliveries. Age group 20-29 were the most affected (58.3%), while the Hausa's were the predominant ethnic group. Majority 65.3% were primigravidae, 68.1% did not have antenatal care and 9.8% did not have formal education. Spontaneous vaginal delivery occurred among 61.1%. Fifteen maternal deaths were recorded giving a case fatality rate of 16.3%. Diazepam was the anticonvulsant used in all the patients. Postpartum eclampsia is the commonest type of eclampsia observed.

Conclusion: Prevalence of eclampsia remained high with high case fatality and very high perinatal mortality (PMR) though, it's preventable. Community sensitisation, ensuring availability and accessibility to skilled antenatal care and delivery will contribute toward minimising the calamities of this disease.

Key word: *Eclampsia, Sociodemographic characteristics, Maternal Outcome, Fetal Outcome.*

INTRODUCTION

Failure to achieve a reduction in the high maternal mortality ratio in Sub-Saharan Africa has been of serious concern not only to the people and its governments but also to other relevant agencies and stake holder's world wide. Worrysome to the Obstetrician is the contribution from preventable cause like eclampsia.

Eclampsia is the occurrence of fit or coma in a patient with signs and symptoms of pre-eclampsia in the absence of underlying neurological disease.¹ It is a serious complication of pregnancy associated with high maternal and perinatal morbidity and mortality.^{2,3} While other parts of the world are celebrating tremendous reduction in incidences of eclampsia and in some, reporting of zero mortality,⁴ the north eastern sub region will for now continue quoting double digits for our incidences and mortalities. Incidences have been quoted from as low as 0.29/1000⁴ deliveries in Qatar to as high as 19.6/1000⁵ in Uyo, Nigeria. Maternal death express as maternal mortality ratio as high as 6,800/100,000 deliveries have been reported.⁵ There is no doubt that these alarming reports are reflection of standard of healthcare system of a given society.^{7, 8} This study intended to review the cases of eclampsia managed at Federal Medical Centre Nguru over the two year period to determine the socio demographic characteristics and pregnancy outcome of the patients.

MATERIALS AND METHODS

This was a retrospective review of cases of eclampsia that were managed between January 2006 to December 2007 in the Federal Medical Centre Nguru. The case notes of the patients were retrieved from the medical records department and only case notes whose records contained the relevant information's were used for the analysis. Information pertaining to age, parity, educational status, tribe, booking status, gestational age, cervical dilatation on presentation and type of eclampsia were extracted from the case notes. Also, information on the mode of delivery, anticonvulsant used and recurrence of the convulsion, and the fetal and maternal outcome were obtained.

The data was analysed using SPSS version 11 (SPSS, Chicago, IL, USA) and Chi square was used for test of significance association between categorical variable with $p < 0.05$ considered as statistically significant.

RESULTS

During the period under review a total of 2,398 deliveries were recorded out of which 92 were cases of eclampsia giving a prevalence of 38.4/1000 deliveries. Only 72 case notes with complete relevant information's were retrieved for analysis giving a retrieval rate of 78.3%. The mean age was 20.6 and the median age was 20.0. Age group 20-29 were the majority with 42(58.3%), while teenagers and those in age group above 30 made up for 27(37.5%) and

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TABLE 1: Socio demographic characteristics of Patients who had eclampsia

Age group	Frequency	Percentage
<20	27	37.5
20-29	42	58.3
Above 30	3	4.2
Ethnicity		
Hausa	34	47.2
Manga	22	30.6
Fulani	9	12.5
Bade	6	8.3
Others	1	1.4
Educational status (literate/illiterate)		
Yes	3	4.2
No	69	95.8
Booking status		
Yes	23	31.9
No	49	68.1
Parity		
0	47	65.3
1-4	15	20.8
5 & above	10	13.9

3(4.2%) respectively. The predominant ethnic group affected were the Hausa with 34(47.2%), followed by Manga (Kanuri) 22(30.6%), while Fulani and Bade each had 9(12.5%) and 6(8.3%) respectively as shown on table 1.

Sixty nine (95.8%) of the patients had no formal education. Only 23(31.9%) patients had antenatal care, while the remaining 49 (68.1%) had not had antenatal care.

Majority of the patients 47(65.3) were primigravidae. Preterm deliveries occurred in 22.2% of the cases and 22(30.6%) presents in active phase of labour. Forty four (61.1%) cases had spontaneous vaginal delivery, while 11(15.3%) of the deliveries were assisted with vacuum or forceps but caesarean section was offered to 13(18.1%) patients. Four of the patients died undelivered. It was also found that 32(44.4%) were on admission for an average period of 7 days, while 27(37.5%) of the cases stayed for periods ranging from few hours to 4 days.

Fifteen maternal deaths were recorded giving a case fatality rate of 16.3% and 35.7% of the total maternal death (42) over the study period and maternal mortality ratio of 625.5/100,000 deliveries, while the perinatal mortality rate was 308.82/1000 deliveries. Diazepam was the anticonvulsant used to abort convulsion in all the patients and recurrence of convulsions were observed in 21(29.2%) of the cases.

The commonest form of eclampsia was postpartum eclampsia 27(37.5%) followed by intrapartum eclampsia in 24(33.3%) and antepartum 21(29.2%).

Table 2 illustrates the analysis of maternal outcome against the socio demographic variables and other determinants. Age and ethnic difference do not show significant effect on maternal outcome. Similarly the booking status of the patients did not in any way influence maternal outcome, as the maternal death between those that

TABLE 2: Maternal outcome of the study population

Age group	Alive	Percentage	Death	Percentage
<20	20	(74.1)	7	(25.9)
20-29	35	(83.3)	7	(16.7)
30+	2	(66.7)	1	(33.3)
$\chi^2=1.151$		P= .562		
Ethnic group				
Hausa	27	(79.4)	7	(20.6)
Manga	17	(77.3)	5	(22.7)
Fulani	8	(88.8)	1	(11.2)
Bade	4	(66.7)	2	(33.3)
Others	1	(100)	0	(0)
$\chi^2=1.396$		P= .845		
Educational status				
Yes	0	(0)	3	(100)
No	57	(82.6)	12	(17.4)
$\chi^2=11.896$		P= .001		
Booking status				
Yes	18	(78.3)	5	(21.7)
No	39	(79.6)	10	(20.4)
$\chi^2=0.017$		P= .897		
Gestational age				
Preterm	14	(87.5)	2	(12.5)
Term	16	(57.1)	12	(42.9)
Postpartum	27	(96.4)	1	(3.6)
$\chi^2=13.967$		P= .001		
Parity				
1 st	37	(78.7)	10	(21.3)
2-4	11	(73.3)	4	(26.7)
5 & above	9	(90)	1	(10)
$\chi^2=1.027$		P= .599		
Mode of delivery				
SVD	43	(97.7)	1	(2.3)
C/S	8	(61.5)	5	(38.5)
Assisted	6	(54.5)	5	(45.5)
$\chi^2=30.883$		P= .000		
Duration of stay				
Few hrs-4 days	14	(51.9)	13	(48.1)
5-9 days	30	(93.8)	2	(6.2)
10+ days	13	(100)	0	(0)
$\chi^2=19.761$		P= .000		
Recurrence of convulsion				
Yes	13	(61.9)	8	(38.1)
No	44	(86.3)	7	(13.7)
$\chi^2=5.356$		P= .021		
Type of eclampsia				
Ante partum	15	(62.5)	9	(37.5)
Intrapartum	16	(76.2)	5	(23.8)
Postpartum	26	(96.3)	1	(3.7)
$\chi^2=8.958$		P= .011		

had ANC and those that did not were 21.7% and 20.4% respectively. The only 3 patients who had formal education all died, compared to 17.4% among those who had never attained any formal education. There were no differences between maternal death among primigravidae (21.3%) and Multiparas (26.7%) ($\chi^2=1.027$, P value = 0.599.) Those who had spontaneous vaginal delivery had significantly fewer deaths (2.3%) compared to those who were delivered

TABLE 3: Fetal outcome of the study population

	Alive	(%)	Stillbirth	(%)	undelivered	(%)
Age group						
<20	15	(55.6)	9	33.3)	3	(11.1)
20-29	31	(73.8)	10	(23.8)	1	(2.4)
30+	1	(33.3)	2	(66.6)	0	(0)
$\chi^2=5.777$	P=0.218					
Ethnic group						
Hausa	18	(52.9)	14	(41.2)	2	(5.9)
Manga	17	(77.3)	3	(13.6)	2	(9.1)
Fulani	6	(66.7)	3	(33.3)	0	(0)
Bade	5	(83.3)	1	(16.7)	0	(0)
Others	1	(50)	1	(50)	0	(0)
$\chi^2=7.322$	P=0.502					
Educational status						
Ye	3	(100)	0	(0)	0	(0)
No	44	(63.8)	21	(30.4)	4	(5.8)
$\chi^2=1.665$	P=0.435					
Booking status						
Yes	18	(78.3)	4	(17.4)	1	(4.3)
No	29	(59.2)	17	(34.7)	3	(6.1)
$\chi^2=2.568$	P=0.277					
Parity						
1st delivery	30	(63.8)	13	(27.7)	4	(8.5)
2-4	10	(66.7)	5	(33.3)	0	(0)
5 & above	7	(70)	3	(30)	0	(0)
$\chi^2=2.310$	P=0.679					
Gestational age						
Preterm	11	(68.8)	5	(31.2)	0	(0)
Term	17	(60.7)	7	(25)	4	(14.3)
$\chi^2=6.709$	P=0.152					
Mode of delivery						
SVD	29	(65.9)	15	(34.1)	0	(0)
.C/S	12	(92.3)	1	(7.7)	0	(0)
Assisted	6	(54.5)	5	(45.5)	0	(0)
$\chi^2=76.851$	P=0.000					
Recurrence of convulsion						
Yes	10	(47.7)	8	(38.1)	3	(14.2)
No	37	(72.5)	13	(25.5)	1	(2.0)
$\chi^2=6.294$	P=0.043					
Type of eclampsia						
Antepartum	14	(58.3)	6	(25)	4	(16.7)
Intrapartum	15	(71.4)	6	(28.6)	0	(0)
Postpartum	18	(66.7)	9	(33.3)	0	(0)
$\chi^2=8.613$	P=0.072					
Maternal outcome						
Alive	41	(71.9)	16	(28.1)	0	(0)
Death	6	(40)	5	(33.3)	4	(26.7)
$\chi^2=17.167$	P=0.000					

through caesarean section (38.5%) and assisted vaginal delivery 45.5% ($\chi^2 = 30.883$, P value = 0.000). Unexpectedly duration of hospital stay was observed to have an inverse relationship to maternal death with those who were admitted for than four days having less mortality 6.2% as against 48.1% for those who were on admissions for few hours to 4 days.

Age, ethnicity, educational status, ANC attendance, parity and gestational age at presentation were not shown to significantly affect neonatal outcome as detailed in table 3. However caesarean section was significantly associated with fewer perinatal mortality compared to SVD and assisted vaginal delivery ($\chi^2 = 30.883$ P= .000). Similarly maternal death was observed to significantly affect perinatal outcome as the mothers who survive had better perinatal outcome than those who died with perinatal survival of 71.9% compared 40%. ($\chi^2 = 17.167$, P value = .000). In contrast to their adverse effect on maternal outcome, type of eclampsia and recurrence of convulsion had no strong effect on neonatal outcome ($\chi^2 = 8.61$, P= .072 and $\chi^2=6.294$, P= .043)

DISCUSSION

The prevalence of eclampsia of 38.4/1000 deliveries found in this study is higher than earlier reported in Nigeria^{5, 6, 9, 10} and the Middle East.⁴ The case fatality of 16.3% found was also higher than reported by previous studies from Gombe¹¹ and Benin¹² but similar to that of Ukpoma¹³ and Jos.⁶ Our MMR of 625.5/100000 deliveries was however lower than reported in Uyo.⁵ The perinatal mortality rate of 22.8% was similar to that from Ghana³, but slightly lower than reported from Gombe.¹¹ Young age less than 30 and nulliparity constituted the major group affected in line with other reports,^{5, 6, 13 - 15} but their statistical significance in determining maternal and perinatal mortality are not demonstrated in this study probably due to the few number of cases in these group compared to 20-29 age group and the multiparas.

The Hausa's and the Manga's were the ethnic group mostly affected, but is not surprising as they are the predominant tribes of the community. Earlier studies in Jos had collaborated this finding, in which the Hausa tribe were the most affected.⁶ As observed in previous studies^{13 - 16} unbooked (68.1%) and uneducated (95.8%) were the most vulnerable group. Educational status and access to ANC were found to have

no significant negative influence on maternal or perinatal mortality. Eclampsics that presented with term pregnancies were shown to have increased maternal mortality, but term presentation do not influence neonatal outcome. Those who had caesarean delivery were observed to have favourable neonatal survival than those who deliver vaginally, either

assisted or spontaneous. In contrast maternal mortality is strongly demonstrated to be higher among those delivered through caesarean section and operative vaginal delivery than those who experienced spontaneous birth. This can be explained by the additional procedure/anaesthesia related risk. The study also highlighted that most of the maternal deaths occurred among those whose admissions were 4 days or less (48.1%) compared to those who were admitted for > 4 days. This suggests that those who were severely ill die earlier than those that responded to initial resuscitation.

Diazepam was the only anticonvulsant used for all the eclamptics as by then is the most widely available drug and because of experience with its use as anticonvulsant among the obstetricians in the sub region over the years. This finding was collaborated by Shamma⁴ (2005), Ozumbia¹⁰ (1993), Ikechebelu¹⁶ (2002) and Ogunniyi¹⁷ (1999). Recurrence of convulsion as observed in 29.2% of the cases

which was higher than in other reports.^{4, 18, 19} This finding however had no significant effect on maternal or Fetal outcome in this study. Postpartum eclampsia was the most prevalent, similar to findings of an earlier reported,⁹ but contrast to reports from a sister tertiary hospital in the same geopolitical zone (Intrapartum),¹¹ however most other reports from Nigeria observed Antepartum eclampsia as the commonest form of eclampsia.^{6, 12, 13, 16, 18, 20}

CONCLUSION

Though preventable, the prevalence of eclampsia still remained high with accompanying high case fatality and perinatal mortality rate (PMR). Community sensitisation, ensuring availability and accessibility to skilled antenatal care and delivery are very important pre-requisite to achieve a reduction in the maternal and perinatal mortality.

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