Feto-maternal outcome of ICU and non-ICU admitted eclampsia at LAUTECH Teaching Hospital: A 10-year review

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ABSTRACT
Introduction: Eclampsia has been one of the major causes of maternal mortality worldwide and its impacts are more felt in sub-Saharan Africa, including Nigeria. There is an urgent need to reduce its adverse effects on maternal health. The aim of this study is to reappraise our management protocol, identify gaps, and suggest ways of improvement.

Methods and Materials: It is retrospective 10-year study of cases of eclampsia and assessing feto-maternal outcomes.

Statistical Analysis: Categorical variables were summarized using frequency while continuous variables were summarized using mean and standard deviation. Measures of association were carried out using student t-test, F-test for continuous variables, and Chi-square test for categorical variables where appropriate. P value set at 0.05%.

Results: 130 cases were identified. A comparative analysis was done on cases admitted to ICU and those managed without admission to ICU. Feto-maternal adverse effects were found more in cases admitted to ICU and were majorly unbooked cases.

Conclusion: Despite ICU care, which should improve feto-maternal outcomes, the case in this study was opposite, suggesting suboptimal antenatal care, inefficient referral system, poor infrastructure, and inadequate manpower in our health sector. Sensitization will impact positively to reduce the burden of the disease.

Key words: Eclampsia; feto-maternal; ICU; non-ICU; outcome.

Introduction
Eclampsia has been a major threat to maternal survival in Nigeria and it is one of the major causes of maternal mortality.[1-3]

The incidence of eclampsia varies from one part of the world to another. There is a low incidence in western countries where there is excellent antenatal care,[4,5] whereas, in developing countries like Nigeria with poor antenatal care in the rural areas, the incidence remains high.[4-6] The principle of the management of this condition includes abating ongoing convulsion and preventing further convulsion, control of hypertension, fluid and electrolyte management, and delivery of the fetus through the most expedite route.[7-10]

The roles of ICU in the management of this condition cannot be overemphasized.[11-14]

The aim of this retrospective study was to assess the feto-maternal outcome of eclamptic women, reappraise our management protocol, identify gaps, and suggest ways of improvement.

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Materials and Method

This study was carried out in Ladoke Akintola University of Technology Teaching Hospital, Osogbo. It was a retrospective study from January 1, 2005, to December 31, 2014. Medical records were examined and sociodemographic and other information was obtained. Data were fed into SPSS version 21. Categorical variables were summarized using numbers and percentages while the mean and standard deviation were for continuous variables. Measures of association were carried using student t-test, F-test for continuous variables, and Chi-square test for categorical variables where appropriate. P value was set at 0.5%. Ethical approval was obtained from the departmental research and ethics committee on the 26th September, 2016.

Results

A total of 130 eclamptic women were managed under the year of review.

The majority of women 71 (69.9%) were within the age range of 20–24 years and 7 (6.8%) in less than 19 years, while majority were married 95 (92.2%) and 8 (78%) were single. Seventy-three (70.9%) were primipara while 30 (20.9%) were multipara. Eighty (77.7%) were unbooked, 28 (22.3%) were booked. The majority, 70 (68%), delivered at gestation age ≥37 weeks while 33 (32%) delivered at gestational age <37 weeks. Eighty-two (79.6%) of them were delivered by emergency cesarean section and 21 (20.4%) had spontaneous vaginal delivery (SVD).

The maternal outcome shows 87 (84.5%) were alive, while 16 maternal deaths account for case-specific maternal mortality due to eclampsia of 15.5%. Majority, 86 (83.5%), had antepartum eclampsia, followed by 12 (11.7%) who had intrapartum eclampsia, and 5 (49%) had postpartum eclampsia. The fetal outcome shows 54 (52.4%) were admitted to special care baby unit (SCBU) while 49 (476%) needed no admission. Eighty-eight (85.4) of the babies delivered were alive, while 15 of them died accounting for case-specific perinatal mortality of 4.6% due to eclampsia.

Majority of the women 54(81.8%) who were admitted to ICU were unbooked patients compared to 12(18.2%) who were booked patients, though not statistically significant, P value 0.22. The mean age of ICU-admitted was 26.54 ± 5.8 years while for non-ICU admitted it was 27.8 ± 3.50 years with P value 0.217, not statistically significant. The mean gestational age of ICU admitted was 37.14 ± 3.03 weeks while non-ICU admitted in 38.04 ± 1.78 weeks with P value of 0.001, statistically significant Table 1.

The majority of those delivered by cesarean section were admitted to ICU, 56 (84.8%) compared to those delivered by SVD, 10 (15.2%), though not statistically significant, P value 0.078. Mean number of days for ICU-admitted was 13.20 ± 3.60 days while for non-ICU admitted 8.49 ± 2.66 days which is statistically significant, P value = 0.000. The mean duration of baby’s admission to SCBU is 9.75 ± 7.06 days for ICU-admitted and 3.18 ± 1.23 days for non-ICU admitted which is statistically significant, P value being 0.004. Maternal deaths were more among those admitted to ICU, 15 (93.8%) compared to those that were not to ICU, 1 (6.3%) and statistically significant, P value 0.002. The majority of the babies admitted to SCBU admitted, 43 (65.2%) were born to mothers admitted to ICU compared to babies 11 (29.7%) whose mothers were not admitted to ICU, statistically significant, P value = 0.001. 29 preterm babies (43.9%) were delivered by eclamptic women admitted to ICU compared to 4 (10.8%) whose mothers were not admitted to ICU, statistically significant P Value 0.001. [Table 2].
Discussion

The majority of the eclamptic women, 91.3%, under the year of the review were under the age of 30 years, consistent with the findings in other studies carried out in the South-Western region of the country.\(^2,3\) In this study, it was observed that married women had higher incidence of eclampsia than unmarried women which supports a previous study done in the same center five years prior to the present study and similar to findings in the Northern part of the country.\(^2,6\)

This study also pointed out that most of the eclamptic women were unbooked, nullipara with a gestational age of 37 weeks and above had emergency cesarean section corroborating reports from other centers in the country.\(^2,3\) The higher proportion of nulliparity observed in this study is in support of findings across the country which is of epidemiological report associated with the disease condition.\(^7,8\) The majority of the eclamptic in this study was not registered for antenatal care in our health facility which is a tertiary health center. Most of them would have registered at primary health centers which serve as a gatekeeping function or even receiving care at mission homes and traditional birth attendants. The policy of ministry of health regarding antenatal care encourages women to receive such care in public primary or secondary health facilities while tertiary health centers like ours are expected to acts as referral centers for high-risk patients.\(^9,10\)

It, therefore, implies that young age, unbooked status, and nulliparity are more prone to eclampsia and efforts should be made at ensuring early booking, regular antenatal clinic attendance, and early referral by the attending physician. Also, with good, regular antenatal care, and early referral, efforts should be made for effective planning of delivery once term as majority had eclampsia after 37 weeks. This will eventually reduce the high rate of abdominal delivery as seen in this study.\(^5,6,11\)

Sixteen maternal deaths were recorded under the 10-year review giving a case fatality of 15.5% which is significantly lower than that found in Maiduguri 22.3%, but higher than in India 7.8%, Benin 10.7%, Gombe 11.6%, and Ekpoma 15.4%.\(^7,4\)

There were 15 perinatal deaths born to eclamptic which account for case fatality of 14.6%. This is a significant improvement in the previous study done 5 years prior to the present one with case fatality of 22.9%.\(^2,6\)

The hospital protocol stipulates that all eclamptic patients should be managed in ICU. Comparing ICU- and non-ICU-admitted eclamptic, it showed that non-ICU-admitted eclamptic had a shorter hospital stay both for the mother and the baby. Pregnant women not registered for antenatal care in our health facility have been associated with higher ICU admission, cesarean section rate, SCBU admission, and higher maternal mortality which is consistent with study done in the country and New Jersey.\(^12-14\) This implies that the quality of care a woman has during antenatal has a significant impact on the outcome of the pregnancy. The suboptimal care these women received outside has contributed significantly to complications recorded in this group of women.

Eclampsia has remained one of the major obstetric indications for ICU and unbooked status has been accountable for a greater percentage of feto-maternal complications. Therefore, all efforts should be made to increase the awareness of the importance of antenatal care and early case presentation so as to minimize complications. The need to improve the quality of care offered at ICU in terms of equipment and manpower will eventually reduce the rate of maternal mortality. Also, similar local studies can be conducted to revalidate findings in this study.

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Conflicts of interest

There are no conflicts of interest.

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