Eclampsia: A Review on Risk Factors, Management and Outcome

Emmanuel Ifeanyi Obeagu¹, Stella Malot², Getrude Uzoma Obeagu³ and Carine Byukusenge⁴

¹Department of Medical Laboratory Science, Kampala International University, Uganda.
²Department of Community Health and Epidemiology, School of Public Health, Kenyatta University, Kenya.
³School of Nursing Science, Kampala International University, Uganda.
⁴Department of Biomedical Laboratory Science, College of Medicine and Health Science, University of Rwanda, Rwanda

ABSTRACT

Eclampsia is when a person with preeclampsia develops seizures (convulsions) during pregnancy. Eclampsia remains a major cause of maternal mortality, particularly in teenage pregnancies. The prevalence of eclampsia globally is reported to be 0.3% but data from individual countries suggest that prevalence and mortality risk vary depending on region and socio-economic status. Family history of Hypertension, preeclampsia, low serum quantity of Calcium and Magnesium, are also risk factors.

Keywords: Eclampsia: a review on risk factors, management and outcome

INTRODUCTION

Eclampsia is seizures that occur in pregnant people with preeclampsia. Symptoms of eclampsia are high blood pressure, headaches, blurry vision and convulsions. It is rare but serious condition that occurs in the second half of pregnancy [1-3]. This condition occurs as complication of preeclampsia which is a disorder of pregnancy in which a person who’s pregnant has high blood pressure and protein in their urine. Eclampsia is when a person with preeclampsia develops seizures (convulsions) during pregnancy. Seizures are episodes of shaking, confusion and disorientation caused by abnormal brain activity. Eclampsia typically occurs after the 20th week of pregnancy. It’s rare and affects less than 3% of people with preeclampsia. Eclampsia can cause complications during pregnancy and requires emergency medical care [4].

PREVALENCE OF ECLAMPSIA

The prevalence of eclampsia globally is reported to be 0.3% (Abalos E, and al., 2014). This is based on secondary analysis of a World Health Organization (WHO) multi-country survey that included 875 cases of eclampsia, collected over a short duration from only secondary or tertiary hospitals [9]. Data from individual countries suggest that prevalence and mortality risk vary depending on region and socio-economic status. In the cohort that took place in 10 low- and middle-resource geographical regions of 536,233 deliveries there were 2,692 cases of eclampsia over 20 months. This gives an incidence of eclampsia of 0.5% [10].

BIOLOGICAL DETERMINANTS

AGE OF THE PATIENT

This is an Open Access article distributed under the terms of the Creative Commons Attribution License (http://creativecommons.org/licenses/by/4.0), which permits unrestricted use, distribution, and reproduction in any medium, provided the original work is properly cited.
respondents out of the 5,609 deliveries were diagnosed with pre-eclampsia, 27.7% of the pre-eclampsia cases were within the age group of 18-24 years old, 25.3% of them were within 25-29 years old, 26.1% were within the age group of 30-34 years old, whereas 4% of them were over 40 years old \[11\].

**OBSTETRIC STATUS**

There is a higher risk of pre-eclampsia and eclampsia among women who had abortion and delivered by cesarean section in the previous delivery \[12\]. Referring to gestational age at admission, the odds of having pre-eclampsia increased among women who had preterm gestation and pre-conception smoking exposure \[13\]. Nulliparous women when compared with multiparous (two to five) women were associated with an increased risk of developing eclampsia \[13\]. While the grand multiparous (6 to 14) when compared to the multi parous were at a lower risk of getting eclampsia. Cases that delivered male babies compared to those who delivered female babies were at an increased risk of developing eclampsia \[13\].

**SERUM CALCIUM AND MAGNESIUM**

The average serum calcium value was 4.47 ± 0.23 mEq/L in healthy pregnant women compared to 3.80 ± 0.71 mEq/L in patients (pre-eclamptic and eclamptic) \(P < 0.001\). Mean magnesium level was 1.56 ± 0.15 mg/dL in the control group compared to 1.20 ± 0.41 mg/dL in the case group \(P < 0.001\). The average serum calcium value was 3.70 ± 0.56 mEq/l in pre-eclamptic pregnant women compared to 3.20 ± 0.41 mEq/l for eclamptic; that of seric magnesium was 1.25 ± 0.36 mg/dl in pre-eclamptic pregnant women compared to 1.15 ± 0.46 eclamptic women \(P < 0.001\). There is a very significant difference of the values obtained in these 3 subgroups: the values obtained decreased going from healthy pregnant groups to pre-eclamptics and eclamptics \[13\].

**MORTALITY**

Eclampsia has a high case fatality rate, which varies among regions of the world, presumably as a function of the access to and quality of health care. Although eclampsia is associated with an increased risk of maternal death in developed countries (0%-1.8%), the mortality rate is as high as 15% in developing countries \[16\].

The condition is relatively rare in developed countries because of the wider availability and utilization of modern obstetric care services. The incidence in the UK is about 2.7 per 10,000 deliveries, and an incidence of 1 in 3,704 was reported from Nova Scotia, Canada. The reported incidence in developing countries varies widely from about 1 in 12 to 1 in 1,700 deliveries \[16\].

**CONCLUSION**

Eclampsia is seizures that occur in pregnant people with preeclampsia. Symptoms of eclampsia are high blood pressure, headaches, blurry vision and convulsions. The prevalence of eclampsia globally is reported to be 0.8%, but data from individual countries suggest that prevalence and mortality risk vary depending on region and socio-economic status. Family history of Hypertension, preeclampsia, low serum Calcium and Magnesium, are also risk factors.

**REFERENCES**


Obeagu et al

This is an Open Access article distributed under the terms of the Creative Commons Attribution License (http://creativecommons.org/licenses/by/4.0/), which permits unrestricted use, distribution, and reproduction in any medium, provided the original work is properly cited.
11. Adwoa N, Kunfah JA, Al., Prevalence and demographic distribution associated with pre-eclampsia among pregnant women at a local Teaching Hospital in Ghana. 2022. https://doi.org/10.1101/2022.05.18.22275250

12. J. Wandawba et Al., Risk factors for severe pre-eclampsia and eclampsia in Mulago hospital, Kampala, 2010 East African Medical Journal Vol. 87 No. 10 October 2010


