Research Article
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Survey of Preeclampsia/Eclampsia in relation to maternal mortality at a tertiary hospital in Gambia

Abstract

Obstetrics haemorrhage was the leading cause of maternal death for over 3 decades but since 2020s we have observed that preeclampsia/eclampsia cases are increasing. This survey aims to reveal the magnitude of preeclampsia in relation to maternal mortality in our setting.

Methodology: A retrospective study was conducted at the Edward Francis Small Teaching Hospital from January to December 2022. Maternal annual audit report was used to extract specific data which was entered into a computer database and analysed with descriptive statistics.

Results: Total maternities from Jan to Dec 2022 was 2893 deliveries. Total number of recorded Preeclampsia/Eclampsia was 427. The prevalence was 427/2893 (14.8%).

There were 54 pregnancy related deaths, Preeclampsia/Eclampsia was 24 (44%); Haemorrhage 12 (22.2%); Sepsis 7 (12.9%). All Preeclampsia/Eclampsia related deaths were referred.

Conclusion: The menace of preeclampsia/Eclampsia is overwhelming and has maintained the leading cause of maternal mortality in Gambia. Hence measures to predict this condition is highly needed.

Keywords: pre-eclampsia, obstetrics haemorrhage, maternal mortality, pregnancy

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Introduction

In the literature, hypertensive disorder in pregnancy, complicates 2–8% of pregnancies.[1] Pre-eclampsia is a major cause of maternal and perinatal mortality and morbidity worldwide causing 15% of all direct maternal deaths in the UK and a fivefold increase in perinatal mortality with iatrogenic prematurity being the main culprit.[2] The World Health Organization estimates that, worldwide, approximately 70 000 women die from pre-eclampsia each year.[3] The Confidential Enquiry into Stillbirths and Deaths in Infancy (CESDI) report cites one in six stillbirths as occurring in pregnancies complicated by maternal hypertension.[3]

In our setting, hypertensive disorders of pregnancy is the most common predisposing factor of abruption.[4] A study conducted in 2014 showed that 59% of abruptions were associated with hypertensive disorders in pregnancy predominantly preeclampsia/eclampsia.[5] The relationship of PE and Abruption in our practice is so strong as the prevalence of PE is increasing the Abruption rate is high. The study conducted in our practice shows abruption prevalence rate of 2.4% which was exceedingly high when compared with other regions of the world.[6–8]

In sub-Saharan Africa haemorrhage has always been reported as the leading cause of maternal mortality and perhaps preeclampsia eclampsia in the second position. However, the prevalence of PE/E is raising in the subregion but the rate of raise in the Gambia may be many folds higher which may be the reason of persistent recent upsurge of deaths and obstetrics morbidities associated with preeclampsia and eclampsia seen in our practice.

In the Gambia Obstetrics haemorrhage was the leading cause of maternal death for over 3 decades but since 2020s we are observing possible change of trend as the prevalence of preeclampsia/eclampsia seems to be high in the teaching hospital as the only referral tertiary centre in the country. In the teaching hospital we have observed many referrals of very early onset of severe preeclampsia/eclampsia with severe morbidity and mortality to mother and baby. In view of these speculations we decided to collect data for a survey of this condition among pregnant mothers at the teaching hospital.

Methodology

A retrospective study was conducted at the Edward Francis Small Teaching Hospital from January to December 2022. Maternal annual audit report was used to extract specific data which was entered into a computer database and analysed with descriptive statistics.

Data collection procedure

The maternal death folders for the period under review were secured from the records office after ethical clearance. In each folder primary cause of death was used as the main cause of death. The secondary cause of deaths is looked at critically if haemorrhage is the primary clinical presentation even though abruption is there and perhaps hypertension it was counted as haemorrhage. We do know that abruption may not cause perinatal mortality but maternal mortality must be due to haemorrhage.

Inclusion and exclusion criteria

Death from other reasons such as gynaecology cancers were not counted. All other deaths within 42 days post-delivery directly or indirectly were counted.

Ethical consideration

The hospital records office at the department granted access to maternity records and annual maternal mortality audit report. The patient recognizable information was not shared.

Results

Total maternities from Jan to December 2022 was 2893 deliveries. Total number of recorded Preeclampsia/Eclampsia was 427. The prevalence was 427/2893 (14.8%) (Figure 1).

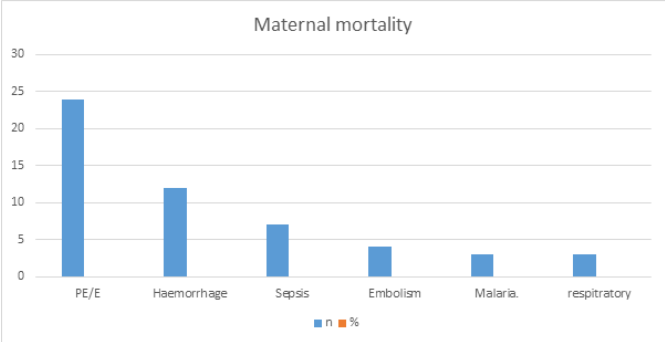

Figure 1 Causes of maternal mortality.

Discussion

The incidence of hypertensive disorder in pregnancy is 2–10% of pregnancies.[1,2] But in our study it was 14.8% maternities which was 2 to 3-fold higher. Preeclampsia/eclampsia related maternal death and prevalence are on the rise. The order of triad; Haemorrhage, Preeclampsia/Eclampsia and Sepsis for over 30 years as the leading causes of maternal deaths in the Gambia[4] has changed; with PE/E leading.

The prevalence of preeclampsia and eclampsia (PE/E) is high in our setting and consequences invariably may include increased feto-maternal complications such as perinatal and maternal morbidity and mortality; increased iatrogenic preterm delivery with problems associated with preterm low birth weight neonates, infants and adults life.[3]

The World Health Organization estimates that, worldwide, approximately 70 000 women die from pre-eclampsia each year. This study shows that incidence of PE/E is absolutely high which means many people who gets pregnant develop this problem and if maternal death occurs, the probability that it will be due PE/E is high. Therefore in this study we observed a switch of position.

The order of triad; Haemorrhage, Preeclampsia/Eclampsia and Sepsis for over 30 years as the leading causes of maternal deaths in the Gambia[4] has changed; with PE/E leading. The margin of lead is remarkably high.

The study shows that fifty four (54) pregnancy related deaths occurred. Twenty four 24 (44%) was due to PE/E. The remaining percentage that was shared among haemorrhage 12 (22.2%), sepsis and others, yet PE/E had an indirect role through abruption placenta. This study showed a 2-fold and 3-folds margin for Haemorrhage and Sepsis respectively.

In our setting, hypertensive disorders of pregnancy is the most common predisposing factor of abruption. A study conducted in 2014 showed that 59% of abruptions were associated with hypertensive disorders in pregnancy predominantly preeclampsia/eclampsia.[5] The relationship of PE/E and Abruption in our practice is so strong as the prevalence of PE/E is increasing the Abruption rate is high. The study conducted in our practice shows abruption prevalence rate of 2.4% which was exceedingly high when compared with other regions of the world.[6–8]

Iatrogenic prematurity and increased admission to neonatal intensive care unit (NICU) due to PE/E in our setting is not shown on the data presented but it can be imagined that is quiet high. The association of abruption with PE/E is unimaginable high in our practice. The deaths from haemorrhage due to abruption, majority of them were associated with PE/E (59%). Demand of Haemodialysis due to acute kidney injury is also a complication of PE/E that is common in our practice.

Study limitation

Hospital based retrospective study may have recall bias and may not be generalized for the entire Gambia population. However, our hospital is the only tertiary referral center in the country where preterm babies and intensive neonatal care is available. Therefore, complications of PE/E is almost always referred to our hospital.

Conclusion

The prevalence of preeclampsia/eclampsia was 14.8%. The death from preeclampsia and eclampsia is 2-fold and 3-fold higher than haemorrhage and sepsis respectively.

Recommendations:

1) Review of antenatal care services in the peripheral health centers and districts hospital were the referrals are coming and do more training and capacity building in the early recognition and referral of mothers who develop high blood pressure in pregnancy.

2) Develop a clinical user friendly preeclampsia predictive modality that will enable early referral of mothers who are suspected to develop hypertensive disorder in pregnancy.

3) Some designated centers in the nation in each region were such patients with suspected potential or those who have developed preeclampsia will be sent for a robust evidence based management.

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Conflicts of interest

There is no competing interests between the authors.

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