

PATTERN OF OCCURRENCE OF SEVERE PREECLAMPSIA AMONG PREGNANT WOMEN IN SOUTH-WEST NIGERIA.

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Abstract

Background: Preeclampsia is a pregnancy-associated multi-organ disorder caused by altered trophoblastic invasion and endothelial cell dysfunction. It is one of the major direct causes of maternal mortality and otherwise is associated with significant maternal morbidity and perinatal morbidity and mortality, especially in developing countries. It complicates 5 – 10% of pregnancies worldwide and can be antepartum, intrapartum or post-partum.

Objectives: To determine the pattern of occurrence of severe pre-eclampsia at patient presentation in a south-West Nigeria hospital.

Materials and Methods: This study was carried out at the obstetrics and gynaecology department of the Obafemi Awolowo University Teaching Hospital, Ile-Ife. It was a cross-sectional descriptive study of 116 consecutive patients that presented with severe pre-eclampsia to the labour ward of the hospital between March 2015 and September 2015. History was obtained from eligible patients and documented on a proforma. Data were analysed using statistical software (SPSS for windows® version 22, SPSS Inc.; Chicago, USA).

Results: Most (69.8%) of the patients that developed severe pre-eclampsia were less than 30 years old, majority were booked (51.7%), and were primigravida (46.6%). Severe pre-eclampsia occurred most (37.1%) from 37 to 38 weeks gestational ages and intrapartum (48.3%). Antepartum pre-eclampsia followed at 37%, while the least experienced was post-partum (14.7%). In addition to elevated blood pressure, majority (55.1%) of the patients presented with proteinuria of 4++++ and headache alone (72.8%).

Conclusion: Intrapartum pre-eclampsia is a more common phenomenon among the patients and proteinuria of 4++++ and headache alone were the most common features of disease severity.

Keywords: Preeclampsia, Perinatal morbidity/mortality, maternal morbidity/mortality, Intrapartum, Antepartum, Post-partum.

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INTRODUCTION

Preeclampsia is a pregnancy-associated multi-organ disorder caused by altered trophoblastic invasion and endothelial cell dysfunction¹. It is associated with maternal and perinatal morbidity and mortality especially in developing countries². Preeclampsia is a pregnancy-specific disease characterised by hypertension and proteinuria

arising after the 20th week of gestation in a previously normotensive and non proteinuric woman³. It complicates 5 – 10% of pregnancies worldwide⁴, and can be antepartum, intrapartum or post-partum.

The aetiology of pre-eclampsia is unknown, however there are proposed theories which centre

on defective placental implantation and the level of trophoblastic invasion.

The risk factors for pre-eclampsia may be high risk or moderate risk factors. High risk factors include hypertensive disease during a previous pregnancy, chronic kidney disease, autoimmune disease such as systemic lupus erythematosus or antiphospholipid syndrome, type 1 or type 2 diabetes mellitus, or chronic hypertension⁵. Moderate risk factors include first pregnancy, age 40 years or older, pregnancy interval of more than 10 years, body mass index of 35 kg/m² or more at first visit, multiple pregnancy and family history of pre-eclampsia⁵.

Other risk factors for pre-eclampsia include black race, assisted reproductive technology, change of spouse, history of pre-eclampsia in the mother, and spouse being product of a pregnancy complicated by pre-eclampsia^{6,7}. Preeclampsia is essentially a disease of the primigravida and it is more common in the age group of <20 and >35 years. It can be present in the multipara in the presence of change of spouse, long inter-pregnancy interval, multiple pregnancies, molar pregnancy, chronic hypertension and chronic renal disease.

Preeclampsia is classified as mild or severe. In mild preeclampsia, diastolic blood pressure is <110 mmHg; and/or systolic blood pressure is <160 mmHg, there is significant proteinuria with the absence of symptoms and signs. In severe preeclampsia, diastolic blood pressure of ≥ 110 mmHg, systolic blood pressure of ≥ 160 mmHg and/or marked proteinuria ensues. The presence of symptoms, signs and biochemical changes can also classify preeclampsia as severe. These include headaches, persistent visual disturbances, vomiting, epigastric pain, cyanosis, pulmonary oedema, oliguria, impaired liver function or hepatocellular damage, haemolysis, thrombocytopenia, oligohydramnios and foetal growth restriction³. The principles of management of severe pre-eclampsia are prevention of fits, control of blood pressure and to expedite delivery by the most judicious route while investigating to exclude and treat possible complications.

World Health Organisation estimates that

preeclampsia is seven times higher in developing countries than in developed countries¹. This study was carried out to determine the pattern of occurrence of severe pre-eclampsia at patient presentation in a south-West Nigeria hospital.

MATERIALS AND METHODS

This study was carried out at the Obstetrics and Gynaecology department of the Obafemi Awolowo University Teaching Hospital, Ile-Ife. It was a descriptive cross-sectional study. The study population consisted of 116 consecutive patients that presented with severe pre-eclampsia to the labour ward of the hospital between March 2015 and September 2015. Women who were eligible were counselled, and after obtaining an informed consent, they were enrolled in the study.

For the purpose of this study, severe pre-eclampsia was diagnosed when diastolic blood pressure of ≥ 110 mmHg and systolic blood pressure of ≥ 160 mmHg in the presence of proteinuria of at least 1+ on dipstick. It was also diagnosed when the diastolic blood pressure was >90 mmHg but <110 mmHg; and/or systolic blood pressure was >140 mmHg but <160 mmHg with any of proteinuria of 5g/24 hours or $\geq 3+$ in dipstick urinalysis.

A total of consecutive 116 women that presented with severe preeclampsia who met the inclusion criteria and gave consent were recruited for this study.

Two registrars and two nurses each from the labour and postnatal wards that were involved in this study underwent training on the research work. This enabled them to inform the researchers whenever a patient with severe preeclampsia arrived the labour ward or the postnatal ward. History was obtained from these patients, investigation result noted and documented on a proforma.

DATA ANALYSIS

Data were analysed using statistical software (SPSS for windows® version 20, SPSS Inc.; Chicago, USA) and results are presented in tables, frequencies and percentages.

RESULTS

Table 1 shows the distribution of patients' socio-demographic characteristics. Most (69.8%) of the patients were less than 30 years old, there were more (51.7%) booked than unbooked patients and

Table 1: Distribution of patients' socio-demographic characteristics

Characteristics	Frequency (%)
Age (in years)	
< 30	81 (69.8)
31 – 40	33 (28.5)
41 – 50	2 (1.7)
Total	116 (100)
Gestational age (in weeks)	
<36	10 (8.6)
36	11 (9.5)
37 – 38	43 (37.1)
39 – 40	40 (34.5)
>40	12 (10.3)
Total	116 (100)
Booking status	
Booked	60 (51.7)
Unbooked	56 (48.3)
Total	116 (100)
Gravidity	
1.00	54 (46.6)
2.00	22 (18.9)
3.00	11 (9.5)
≥4.00	29 (25)
Total	116 (100)

The most pronounced type of pre-eclampsia among the patients was intrapartum, followed by antepartum, while the least experienced was post-partum. Table 2 shows the frequency of occurrence of the types of pre-eclampsia.

Table 2: Types of pre-eclampsia

Types	Frequency (%)
Antepartum	43 (37)
Intrapartum	56 (48.3)
Post-partum	17 (14.7)
Total	116 (100)

Table 3: Features of severity of preeclampsia

Characteristics	Frequency (%)
Proteinuria dipstick	
2++	6 (5.2)
3+++	46 (39.7)
4++++	64 (55.1)
Total	116 (100)
Other signs of severe disease	
Headache alone	59 (72.8)
Dizziness alone	4 (5)
Blurred vision alone	3 (3.7)
Blurred vision & dizziness	1 (1.2)
Headache & dizziness	3 (3.7)
Headache & blurred vision	2 (2.5)
Headache & epigastric pain	4 (5)
Headache & vomiting	3 (3.7)
Headache & brisk reflexes	1 (1.2)
Headache & diplopia	1 (1.2)
Total	81 (100)

As shown in table 3, Proteinuria of 4++++ and headache alone were the most common features of disease severity among the patients. Other features of severity occurring with headache were also observed in some patients.

DISCUSSION

In this study, it was observed that majority of the patients (69.8%) were <30-year-old. This was higher than 31.3% observed at the Ladoke Akintola University of Technology Teaching Hospital, 42.4% at the University of Calabar Teaching Hospital, Calabar, and 50.6% in Enugu. An incidence of 38.4% was observed at the Liaquat University Hospital Hyderabad among patients less than 20 years of age⁹.

Preeclampsia occurred more (46.6%) in primigravid women. This is consistent with what is already known about preeclampsia as being more prevalent in the primigravid women. This value was close to 49.4% from the University of Nigeria Teaching Hospital Enugu, but lower than 81.4% from Birnin Kudu. The exact cause of preeclampsia remains unclear, however there are proposed theories. Immune maladaptation of primigravid women is responsible for the higher incidence of preeclampsia in this group of pregnant women. This maladaptation is not present in subsequent pregnancies. This results in the reducing incidence of preeclampsia in multiparous women. Maladaptation also explains the reason multiparous women develop preeclampsia when they become pregnant for a new consort¹¹.

The incidence of antepartum preeclampsia was 37% which was higher than the 16.6% reported by Raghuraman et al. Intrapartum pre-eclampsia was the most common form of presentation (48.3%). The incidence of post-partum pre-eclampsia in this study was 14.7% which was the lowest. It was lower than 55% reported by Yancey et al. Headache was the symptom of severity that occurred most at presentation in this study. It is usually one of the first symptoms that the patient experiences when the blood pressure is elevated. Headache also occurred with other symptoms of severity in this study.

CONCLUSION

In this study, preeclampsia was more among primigravid women and those less than 30-year-old. Intrapartum preeclampsia was higher than ante- and post-partum preeclampsia. Educating, encouraging and counselling women on the need to embrace

good health-seeking behaviour are key, because embracing good health-seeking behaviour would help make early diagnosis and manage preeclampsia as early as possible.

LIMITATION

This was a hospital-based study. The results may not reflect the findings in other tertiary institutions in Nigeria or the West African sub-region.

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CONFLITS OF INTERESTS

The authors declare that they have no competing interests.

AUTHORS' CONTRIBUTIONS

Author 1 designed the study, participated in data collection and performed the statistical analysis. Authors 2 and 3 approved the study with some revisions. Author 4 wrote the protocol, managed literature searches and wrote the first draft of the manuscript. Author 5 participated in drafting the manuscript. All authors read and approved the final manuscript.

CONSENT

Written informed consent was obtained from every patient that participated in this research.

ETHICAL APPROVAL

The research work was examined and approved by the hospital research and ethics committee.

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