INTRODUCTION

Thrombocytopenia is the second most common haematological disorder after anaemia worldwide [1,2], affecting 7-10% of all pregnancies [3]. The prevalence is slightly higher at 15.3% in the sub-Saharan Africa [4]. The condition is responsible for up to 10% cases of postpartum hemorrhage in the developing countries with maternal mortality of 5.26% [1]. In Uganda, one of the commonest haematological pathology for pregnant women admitted in intensive care unit is undiagnosed thrombocytopenia [5]. At KIUTH, whereas haematological studies such as complete blood count are routine for all pregnant women attending their first antenatal care, there is no follow up on these studies except for haemoglobin levels especially during the last trimester, labour and delivery. Consequently, we are not able to diagnose thrombocytopenia in pregnancy until complications ensue. This study aimed to identify the severity patterns and determinants of thrombocytopenia among women delivering at KIUTH so as to guide us on future interventions.

MATERIALS AND METHODS

This was a cross-sectional study conducted over a period of three months of May 2019 to August 2019. The study was conducted in the maternity unit of Obstetrics and Gynecology department of KIUTH located in Ishaka-Bushenyi district, in south-western Uganda about 370 kilometers from the center of Kampala city. This unit has a bed capacity of 85 and conducts approximately 200 deliveries per month. Sample size was determined using Keish and Leslie formula (1965), using an

Abstract

We established the severity patterns and determinants of thrombocytopenia among women delivering at Kampala International University Teaching Hospital (KIUTH), to guide us on future interventions. This was a three months cross-sectional study conducted in the months of May 2019 to August 2019 at KIUTH. A total of 386 participants were consecutively enrolled. Interviewer administered questionnaires and laboratory result forms were used to collect data. Binary logistic regression was conducted to identify the determinants of thrombocytopenia. All data analyses were conducted using STATA version 14.2. Majority of the women had mild thrombocytopenia 34 (55.7%), followed by moderate thrombocytopenia 23 (37.7%), and then severe thrombocytopenia 4 (6.6%). The determinants of thrombocytopenia at this hospital were hypertension in pregnancy (aOR: 18.9, 95% CI: 8.8-43.13, p<0.001), HIV positive status (aOR: 21.2 95% CI: 5.15-87.56, p< 0.001), young age (aOR: 4.3, 95% CI: 1.17–15.94, p=0.028) and anaemia in pregnancy (aOR: 4.48, 95% CI: 1.3-15.5, p=0.018). Majority of the women who deliver at KIUTH have mild-to-moderate thrombocytopenia. Early recognition and treatment of the above determinants could go a long way towards preventing thrombocytopenia at this facility.
estimated prevalence of 50% at 95% confidence interval and a maximum accepted error of 5% giving a minimum sample size of 386. This study was conducted in accordance with the Declaration of Helsinki. Voluntary recruitment of all the study participants was done. Informed consent from the participants was obtained after fully explaining the details of the study in both the local languages (Runyankore), and the national official language (English), for those who did not understand the local language, or who were comfortable using English. An informed consent document both in Runyankore and English approved by the research ethics committee of Kampala International University was signed by every participant, the investigator and a witness. Participants were not forced to enroll if they did not want to. The participant was free to withdraw from the study at any time she wished, without coercion or compromise of care that she was entitled to. Questionnaires and laboratory request forms were used to collect the data. The data was collected on social demographic characteristic as well as the obstetric and medical determinant factors of thrombocytopenia. All the collected data were entered into Microsoft excel version 2010 and then imported into STATA version 14.2. These were summarized as means, medians, standard deviations and interquartile range (for continuous variables). Proportions, percentages and frequencies were used for categorical variables. Both bivariate and multivariate logistic regression analysis was carried out. The variables in the final multivariate model were significant when \( p < 0.05 \). The measure of association was reported as odds ratios with corresponding 95% confidence interval and \( p \)-value. All statistical analyses were carried out in STATA version 14.2.

**RESULTS**

Of the 386 mothers enrolled in the study, 61 (15.8%), had thrombocytopenia. Of these, 34 (55.7%), had mild thrombocytopenia, 23 (37.7%), had moderate thrombocytopenia and 4 (6.6%), had severe thrombocytopenia. This is shown in Table 1. Bivariate analysis for the determinant factors of thrombocytopenia among women delivering at KIUTH showed that lower age of 17 years and below, pregnant women with hypertension, women with history of bleeding easily, prior history of multiple blood transfusions, history of any chronic disease, HIV positive status and women with haemoglobin level below 11g/dl were significantly associated with thrombocytopenia in pregnancy. This is shown in Table 2. On multivariate analysis, the odds of having thrombocytopenia was 4.3 times higher among mothers aged below 17 years as compared to those aged 25-35 years (aOR: 4.3, 95% CI: 1.17-15.94, \( p = 0.028 \)). The odds of having thrombocytopenia was 18.9 times higher among women diagnosed with hypertension in pregnancy compared to those that did not have hypertension in pregnancy (aOR: 18.9, 95% CI: 8.18-43.13, \( p < 0.001 \)). The odds of having thrombocytopenia was 4.48 higher among women with haemoglobin below 11g/dl compared to those who had haemoglobin above 11g/dl (aOR: 4.48, 95% CI: 1.3-15.5, \( p = 0.010 \)). This is shown in Table 3.

**DISCUSSION**

Majority of our study participants had mild thrombocytopenia (55.7%), followed by moderate thrombocytopenia (37.7%), and then severe thrombocytopenia (6.6%). This was similar to studies done in India [1], Ghana [4], and Ethiopia [6], which showed a high frequency of mild thrombocytopenia followed by moderate thrombocytopenia and the minimum frequency with severe thrombocytopenia. The odd of having thrombocytopenia was higher in women of young age. The fact that majority of the low aged women are primigravida who are more susceptible...
Table 3: Multivariate analysis for determinant factors of thrombocytopenia among women delivering at KIUTH.

<table>
<thead>
<tr>
<th>Variable</th>
<th>aOR(95% CI)</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age category</td>
<td></td>
<td></td>
</tr>
<tr>
<td>15-17</td>
<td>4.3 (1.17 - 15.94)</td>
<td>0.028</td>
</tr>
<tr>
<td>18-24</td>
<td>2.9 (1.19 - 7.31)</td>
<td>0.020</td>
</tr>
<tr>
<td>25-34</td>
<td>1.0</td>
<td></td>
</tr>
<tr>
<td>35-49</td>
<td>2.1 (0.84 – 5.45)</td>
<td>0.110</td>
</tr>
<tr>
<td>Hypertension in pregnancy</td>
<td>18.9 (8.18 – 43.13)</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>HIV positive</td>
<td>21.24 (5.15 – 87.56)</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>HB &lt;11g/dl</td>
<td>4.48 (1.3 – 15.5)</td>
<td>0.018</td>
</tr>
</tbody>
</table>

CONCLUSION

Hypertension in pregnancy, HIV positive status, being young and anaemia in pregnancy were the major factors associated with thrombocytopenia in women delivering at KIUTH.

ACKNOWLEDGEMENT

We acknowledge and appreciate all the participants who consented to participate in the study.

ETHICAL APPROVAL

This study was approved by the Research Ethics Committee of Kampala International University.

REFERENCES


