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Full Length Research Paper

Ante-partum haemorrhage and pregnancy outcome in LAUTECH Teaching Hospital, southwestern Nigeria

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Obstetric haemorrhage has been the leading cause of maternal death in Nigeria and Sub-Saharan Africa. Prevention, early detection and prompt management can not be overemphasized. Prompt detection and appropriate treatment of Antepartum haemorrhage would reduce significantly morbidity and mortality associated with obstetric haemorrhage. The aim of this study is to compare the pregnancy outcome of mothers treated for Ante-partum haemorrhage (APH) with those who did not receive any treatment. This is a case-control study of women who had treatment for APH compared with those who had none. Women with APH had significant maternal and neonatal complications. These include maternal anaemia, blood transfusion, prolonged hospital stay and caesarean deliveries while neonatal complications were birth asphyxia, admission to neonatal intensive care unit and perinatal death. Women with APH constituted a major obstetric challenge and concerted efforts must be made by the practicing obstetrician in this environment to identify those at risk in order to plan adequately.

Keywords: Ante-partum haemorrhage, placenta praevia and abruption.

INTRODUCTION

Ante-partum haemorrhage is bleeding from genital tract after 20 weeks of gestation until delivery in Industrialized countries (Amitava et al., 2010) and 28 weeks in countries with low resource settings lacking adequate neonatal facilities and one of the major contributors to obstetric emergencies in our health facilities (Lamina and Oladapo, 2011). The main causes of ante-partum haemorrhage are placenta praevia (31%) and abruptio placenta (22%). The other causes (47%) include marginal sinus bleeding 60%, heavy show 20%, vasa praevia 0.5%, cervicitis 8%, genital trauma 5%, varicosities 2%, tumours 0.5%, infections 0.5%, coagulation defects 0.5% (Chan and To, 1999). Despite an exhaustive search to determine the aetiology of the bleeding in these women, the reason for the bleeding will remain unknown in 2% to 3% of these women (Chan and To, 1999). Antepartum haemorrhage contributes significantly to maternal and neonatal morbidity and mortality in sub-Saharan Africa.

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Adverse effects of ante-partum haemorrhage of unknown origin includes an increased risk of spontaneous preterm labour, labour induction, caesarean delivery, congenital anomalies, fetal loss rate, and an overall increased perinatal mortality rate (Chan and To, 1999; Karin et al., 1998; Leung et al., 2001; Mokuolu et al., 2001; Olusanya and Solanke, 2011). In this environment, most of the studies were based on either early vaginal bleeding or major causes of antepartum haemorrhage (Obed and Adewole, 1997; Ikechebelu and Onwusulu, 2007) , however the main objective of this study is to group all the causes of antepartum haemorrhage as cases and comparing them with age matched control group.

MATERIALS AND METHOD

The study was carried out at Ladoke Akintola University of Technology Teaching Hospital, Osogbo, between January 1, 2005 to December 31, 2008. It was a retrospective case-control study. Information's were obtained from delivery records on sociodemographic cha-

Table 1. Socio-demographic characteristics

Variable	Number	Percentage
Age(years)		
≤ 24	17	15.0
25 – 29	45	39.8
30 – 34	29	25.7
≥35	22	19.5
Tribe		
Yoruba	110	97.3
Ibo	3	2.7
Marital Status		
Married	111	98.2
Single	2	1.8
Parity		
Nullipara	28	24.8
Para 1 – 4	81	71.7
Para ≥ 5	4	3.5
Booking Status		
Booked	56	49.6
Unbooked	57	50.4
Previous Abortion		
Nill	67	59.3
Had Abortions	46	40.7
Mode of delivery		
Spontaneous Vaginal Delivery	53	46.9
Caesarean Section	60	53.1

racteristics of women presenting at gestational age of 28 weeks and above with antepartum haemorrhage and corresponding age-matched group. Others include causes of bleeding, maternal and neonatal complications. Categorical variables were summarized using numbers and percentages while mean and standard deviation for normally distributed continuous variables and Mann-Whitney U test for skewed variables. Measure of association was carried out using student-t test and chi-square where appropriate. Binary logistic regression was done to assess the risk factors to Ante-partum Haemorrhage. Level of significance was put at less than 5%.

RESULTS

There were 2,358 deliveries in the study period. The study was age-matched, 36 cases were retrieved for analysis and 77 in the control group. There was no mean age and parity difference between the cases and control; 30.5±6.8 years, 29.2±5.2years $p > 0.05$ and 1.9±1.4, 1.5±1.3 $p > 0.05$.

Majority of the parturients, 45 (39.8%) were in age between 25 and 29 years and were mostly Yoruba ethnic tribe, 110 (97.3%) (Table 1). They were mainly Para 1 – 4, 81(71.7%), 56 (49.6%) were booked and most of them 60 (53.1%) had caesarean deliveries.

Major cause of Antepartum Haemorrhage (APH) was placenta praevia 20(55.6%), abruption placentae were 12 (33.3%) and 3 (8.4%) were of unknown cause (Table 2). Eight (7.1%) of the women had postpartum haemorrhage, 14 (12.4%) were transfused. Twenty eight (24.8%) babies were admitted to intensive care baby unit while 13 (11.5%) had early neonatal death.

Pre-delivery packed cell volume was significantly lower in cases than the control group; (27.7±5.0 Vs 30.9±5.2; $p < 0.01$) (Table 3). More women 9(25.0%) in cases were transfused than those in the control group 5(6.5%); Fisher's Exact < 0.05.

Higher proportion of women in the cases had caesarean deliveries compared to the control group (63.9% Vs 39.0%, $p < 0.05$). Duration of post delivery hospital stay was significantly higher among the cases than the control (72.4 Vs 49.8; $p < 0.001$).

Mean apgar score both at 1 minute and 5 minutes were significantly higher in the control group compared to the cases (4.9 Vs 6.2, $p < 0.001$; 7.0 Vs 8.8 $p < 0.01$ respectively). However, incidence of birth asphyxia was only significantly higher at 5 minutes among the cases compared to the control (38.9% Vs 8.3% $p < 0.01$).

The mean birth weight was significantly lower in the

Table 2. Comparative analysis between cases and control

Variable	Cases N = 36	Control N = 77	Test Statistic	df	P Value
AGE(YEARS)	30.5±6.8	29.2±5.2	t = 1.12		> 0.05
PARITY	1.9±1.4	1.5±1.3	t = 1.43		> 0.05
Pre-delivery PCV	27.7±5.0	30.9±5.3	t = 3.06		< 0.01
Post-delivery PCV	27.5±5.7	29.5±5.4	t = 1.83		> 0.05
Booking Status					
Booked	12(33.3%)	44(57.1%)			
Unbooked	24(66.7%)	33(42.9%)	$\chi^2 = 5.56$	1	< 0.05
Blood Transfusion					
Yes	9(25.0%)	5(6.5%)			
No	27(75.03%)	72(93.5%)	Fisher's Exact		< 0.05
Mode of Delivery					
Caesarean Section	23(63.9%)	30(39.0%)			
SVD	13(36.1%)	47(61.0%)	$\chi^2 = 6.12$	1	< 0.05
Hospital Stay (days)	72.4	49.8	M-W U		< 0.01
Neonatal Status					
Apgar Score at 1 minute	4.9±2.7	6.2±1.7	t = 4.04		< 0.001
Apgar Score at 5minutes	7.0±3.4	8.8±1.5	t = 3.90		< 0.01
Apgar Score at 1min					
Apgar Score ≤ 6	22(61.1%)	30(41.7%)			
Apgar Score ≥ 7	14(38.9%)	42(58.3%)	$\chi^2 = 3.64$	1	> 0.05
Apgar Score at 5mins					
Apgar Score ≤ 6	14(38.9%)	6(8.3%)			
Apgar Score ≥ 7	32(61.1%)	66(91.7%)	$\chi^2 = 14.85$	1	< 0.001
Birth weight(kg)	2.6±0.7	3.2±1.4	t = 2.16		< 0.05
Baby's birth weight					
< 2.5kg	9(25.0%)	9(12.3%)			
≥ 2.5kg	27(75.0%)	64(87.7%)	$\chi^2 = 2.81$	1	> 0.05
Admission to NICU					
Yes	12(33.3%)	16(20.8%)			
No	24(66.7%)	21(79.2%)	$\chi^2 = 2.07$	1	> 0.05
Alive	28(78.8%)	72(93.5%)			
Dead	8(22.2%)	5(6.5%)	Fisher's Exact		< 0.05

t = Student-t test
M-W U = Mann-Whitney U test
df = degree of freedom
PCV = packed cell volume
NICU = Neonatal intensive care unit
SVD = Spontaneous Vertex Delivery

cases than the control (2.6kg Vs 3.2kg $p < 0.05$) but there no significant difference in the incidence of low birth weight ($p > 0.05$).

Perinatal mortality was significantly higher among the cases compared to the control group (22.2% Vs 6.5% Fisher's Exact < 0.005).

After adjusting for age, previous abortions, parity and packed cell volume at presentation, unbooked paturients were significantly more likely to present with antepartum haemorrhage (OR=2.443, 95% CL 1.030 – 5.794).

DISCUSSION

The incidence of ante-partum haemorrhage was 1.5% which was slightly lower than those of developed settings 2-5% (Chan and To, 1999). The major cause of antepartum haemorrhage was found to be placenta praevia followed by abruption placenta and lastly by unknown causes in agreement with findings in other centres (Shih-Chen et al., 2003; Ikechebelu and Onwusulu, 2007). Extremes of iron status during preg-

Table 3. Logistic regression analysis on factors associated with antepartum haemorrhage

VARIABLE	β	S.E	WALD	P Value	OR	95% CI
Age	0.025	0.043	0.331	0.565	1.025	0.942 – 1.115
Booking Status						
Unbooked / Booked (ref)	0.893	0.441	4.112	0.043	2.443	1.030 – 5.794
Abortion						
Yes / No (ref)	0.336	0.425	0.623	0.430	1.399	0.608 – 3.220
Parity	0.102	0.184	0.310	0.578	1.108	0.773 – 1.589
Packed Cell Volume(PCV)						
< 30% / ≥ 30%(ref)	0.333	0.433	0.589	0.443	1.395	0.596 – 3.260

S.E = Standard error
OR = Odd Ratio
CI = Confidence interval

nancy adversely affect pregnancy outcomes (Ziaei et al., 2008). Several studies have shown a relationship between haemoglobin levels above 13.2g/dl and below 10.4g/dl to be associated with adverse pregnancy outcomes such as stillbirths, pregnancy induced hypertension, intrauterine growth restriction, low birth weight, preterm delivery, perinatal death (Ziaei et al., 2008; Mokuolu et al., 2010). This study has shown higher prevalence of anaemia among the parturients with antepartum haemorrhage which also resulted from significant blood loss and increase transfusion rate in consonant with other studies (Faponle and Makinde, 2007) thus putting more pressure on already depleted blood banks even though functional blood banks are not readily available in our environment.

Caesarean section is generally accepted as a safe alternative mode of delivery in developed countries by both patients and caregivers however there is strong aversion to the procedure by women in sub-Saharan Africa but ante-partum haemorrhage is one of major indications for caesarean section (Ojiyi et al., 2008; Swende, 2008). Even though safe it is not without important risks such as increased mean blood loss, febrile illness, thromboembolic disease , infection and a mortality risk of up to five times that of vaginal delivery (Griffiths, 2005; Ijaiya and Aboyeji, 2001). There are also fetal risks including lacerations and increased rate of respiratory disorders (Smith, 2004). There was significant higher proportion caesarean deliveries in the cases compared to the control which agrees with other studies (McCormack et al., 2008). Prolonged hospital admission increases cost and more psychological stress on the family especially the other siblings from prolonged absence of the mother. Our findings have shown significant prolonged hospital admission among the parturients with antepartum haemorrhage.

Neonatal asphyxia has been associated with neonatal morbidity and mortality. Mean Apgar score was significantly lower among the cases, with higher proportion of birth asphyxia which corroborates other studies (Caroline, 1998).

Birth weight is one of the determinants of neonatal survival, the mean birth weight was significantly lower among women with antepartum haemorrhage and also the incidence of low birth weight was higher, these are in support of other studies (McCormack et al., 2008; Olusanya and Ofovwe, 2010).

Ante-partum haemorrhage has been implicated as a major cause of perinatal death(Onyiriuka, 2009; Oladapo et al., 2007). Perinatal mortality was significantly higher among the cases which is agreement with other studies in developed setting (Magann et al., 2005).

Pregnancy outcome in our study among women with antepartum haemorrhage was associated with both maternal and neonatal complications. Management of this obstetric condition poses a serious challenge to the obstetrician and haemorrhage being a major cause of maternal mortality (Owolabi et al., 2008). Various treatment options have been suggested such cervical cerclage with other treatment methods for placenta praevia (Sinha and Kuruba, 2008) which was a major cause of antepartum haemorrhage in our study and immediate delivery is advocated for abruption due to insufficient man power and equipments for antepartum surveillance. There is need for continuous education and retraining of health care givers especially those involved in labour management on how to prevent ruptured uterus.

After adjusting for other factors such as age, previous abortion, parity, and packed cell volume at presentation, booking status at presentation remains the major predictor of antepartum haemorrhage. Parturients that were not booked in our health facility were significantly at higher risk of having antepartum haemorrhage supporting similar reports in our environment (Owolabi et al., 2008), thus there is need for proper networking among the referring health facilities and where possible to communicate with our health facility before patient's arrival to labour room. This will help in adequate prepara-

tion for proper management especially in poor resource setting like ours where response to emergency is quite lower compared to advanced setting.

CONCLUSION

Ante-partum haemorrhage was found to be associated with poor maternal and neonatal outcome in this study and the major predictor was booking status. There is need to improve on infrastructures such as functional blood banks, quality of care and referral system in our health facilities to be able to cope with increasing challenges of this obstetric haemorrhage.

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