Antepartum Haemorrhage at the Delta State University Teaching Hospital, Oghara: A 3 year review

Okoacha Innocent[1], Okhionkpamwonyi Osamudia[1], Okonta I. Patrick[2]

[1] Department of Obstetrics and Gynaecology, Delta State University Teaching Hospital, PMB 07, Oghara, Delta State, Nigeria.

[2]Department of Obstetrics and Gynaecology, Delta State University, Abraka/ Delta State University Teaching Hospital, Oghara

Correspondence to:
Dr Okoacha Innocent,
Email: innochi4life@gmail.com

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Abstract

Background: *Antepartum haemorrhage and remains one of the dreaded complications in obstetrics due to its adverse maternal and perinatal outcome. Prompt detection and appropriate treatment of antepartum haemorrhage would however reduce significantly morbidity and mortality associated with it. This study was conceptualized to document the incidence, clinical risk factors, aetiology, and the fetomaternal outcomes of pregnancies complicated by antepartum haemorrhage in Delta State University Teaching Hospital, Oghara.*

Methods: *This was a three year retrospective descriptive study of 57 women managed for antepartum haemorrhage at the Delta State University Teaching Hospital, between January 2011 and December 2013. The data was analyzed using statistical package for the Social Sciences (SPSS) version 19.*

Results: *The incidence of antepartum haemorrhage was 6.02%, of which placenta praevia and abruptio placenta were 3.27% and 2.11% respectively. Placenta praevia was the commonest (54.4%) cause of antepartum haemorrhage. The mean gestational age at delivery was 34.9 ± 3.3 weeks. Caesarean section rate was 80.7% and the commonest fetal outcome was prematurity. Statistically significant association was found between antepartum haemorrhage and previous caesarean section, low birth weight, and birth asphyxia. There was statistically significant association between abruptio placenta and hypovolaemic shock, and more women with placenta praevia had malpresentation.*

Conclusion: *Antepartum haemorrhage has a high incidence in this study with placenta praevia as the commonest cause. Antepartum haemorrhage remains a major cause of poor fetomaternal outcome. Concerted efforts must be made to identify those at risk as well as early referral to higher health care centres for appropriate care.*

KEYWORDS: antepartum haemorrhage, placenta praevia, abruptio placenta, DELSUTH

Introduction

Children are the joy of every home in Africa hence it is the desire of every woman to engage in the life giving act of procreation. However, this joy could be truncated by complications during pregnancy and delivery which may lead to maternal and perinatal morbidity or mortality. Antepartum haemorrhage is a type of obstetric haemorrhage and it is a grave obstetrical emergency as well as a leading cause of maternal and perinatal mortality and morbidity.[1]

APH is defined as bleeding from the genital tract between the age of viability and the onset of labour.[2,3] Its incidence in Nigeria ranges between 2 and 6%.[4,5]

APH can be caused by placenta praevia, abruptio placentae, and incidental causes; which include rare occurrences like vasa praevia, marginal sinus bleeding, heavy show, cervicitis, genital trauma, varicosities, tumours, infections, and coagulation defects.[5,6] Placenta praevia and abruptio placenta are the major causes of APH, however, the exact cause of haemorrhage in some cases may be undetermined.[5]

The causes of placenta praevia are frequently unclear and the low site of implantation of the placenta may represent an accident of nature. None-the-less, there are associated risk factors which include maternal age above 35, multiparity, multiple pregnancies, placenta accrete, previous uterine damage which may result from previous caesarean sections, dilatation and curettage for retained products of conception.[7]

The causes of abruptio placentae are largely unknown. However, some associations have been documented. These include maternal hypertension/preeclampsia, abdominal trauma, fibroids, high parity, sudden uterine decompression, external cephalic version, previous abruptio placentae, multiple gestation, use of cocaine, advanced maternal age and poor placentation (the sick placenta), folic acid deficiency and chorioamnionitis.[8] The materno-fetal complications in patients with antepartum haemorrhage are malpresentation, premature labour, hypovolemic shock, disseminated intravascular coagulopathy, postpartum haemorrhage, acute renal failure, sepsis, prematurity, low birth weight, intrauterine death, congenital malformation and birth asphyxia.[9,10] Maternal complication also includes higher rates of caesarean sections which maybe as high as 83.3% for placenta praevia, peripartum hysterectomies (2.1%), and postoperative anemia (7.3%).[11]

Maternal mortality due to antepartum haemorrhage has significantly decreased in developed countries due to better obstetrical care. However, this is not so for developing countries. In Nigeria, maternal and perinatal mortality is still very high due to associated problems like anaemia, difficulties in transportation in emergent cases and limited medical facilities. Findings of a study in the University of Benin Teaching Hospital (UBTH) suggest that APH contributed 2.4% to maternal

mortality in the institution.[12]

Obstetric haemorrhage has been the leading cause of maternal death in Nigeria and Sub-Saharan Africa. Despite having only 2% of the world's population, Nigeria contributes 10% of the world's maternal deaths[13] and obstetric haemorrhage is responsible for 25-60% of maternal deaths. It is the commonest single preventable cause of maternal mortality. Half of the cases are due to antepartum haemorrhage which continues to be one of the most common complications of pregnancy.[14] Therefore prevention, early detection and prompt management of APH cannot be overemphasized.

This study was conducted to document the pattern, and outcome of management of this condition at the Delta State University Teaching Hospital, Oghara. This is the first study of APH at the centre and findings from this study would serve as a baseline for subsequent reviews and also form the basis for making recommendations to improve on the management outcome for APH at the centre.

Materials and Methods

This was a three year retrospective descriptive study which was conducted between January 2011 and December 2013 at the Department of Obstetrics and Gynaecology of Delta State University Teaching Hospital, Oghara. Delta State University Teaching Hospital is located in Oghara town of Delta state which is located in the Niger-Delta region of Nigeria. The department has seven Consultant Obstetrician and Gynaecologist and 24 resident doctors at various stages of postgraduate training.

The names and hospital numbers of pregnant women with diagnosis of APH were obtained from the labour ward register and their case notes retrieved from the medical records department. A dataproforma was used to obtain information from the case files which included the sociodemographic parameters of the patient, obstetric risk profiles, risk factors of APH, cause of APH, blood transfusion, mode of delivery, maternal complication, fetal complication, fetal outcome, and duration of hospital stay. Data was analyzed using the Statistical Package for Social Sciences (SPSS PC+)software. Results were presented in proportions and percentages and test of statistical significance was done using chi-square test or Fisher Exact correction where applicable.

Ethical approval for this study was obtained from the hospital's Health Research Ethics Committee.

Results

There were a total of 947 deliveries during the study duration. Antepartum haemorrhage constituted 57 cases of the total deliveries, out of which 31 were placenta praevia, 20 were abruptio placenta and 6 resulted from unknown causes. The incidence of APH in this study was 6.02% with placenta praevia and abruptio placenta having an incidence of 3.27% and 2.11% respectively.

Table 1: Sociodemographic Characteristics of Study Population (N= 57)

Variables	Frequency	(%)
Age(years)		
< 20	2	(3.5)
20 - 24	6	(10.5)
25 - 29	22	(38.6)
30 - 34	14	(24.6)

Variables	Frequency	(%)
> 35	13	(22.8)
Gestational age (weeks)		
28 - 32	16	(28.1)
33 - 37	27	(47.4)
>37	14	(24.6)
Occupational **S**tatus		
Employed	21	(36.8)
Unemployed	36	(63.2)
Parity		
1	2	(3.5)
2 - 4	43	(75.4)
> 5	12	(21.1)
Marital Status		
Married	47	(82.5)
Single	8	(14.0)
Separated	2	(3.5)
Level of Education		
None	2	(3.5)
Primary	13	(22.8)
Secondary	30	(52.6)
Tertiary	12	(21.1)
Booking Status		
Booked	22	(38.6)
Unbooked	35	(61.4)
Total	57	(100.0)

As shown above in table 1, majority (38.6%) of parturients were in the age group 25 – 29 years and most of them (63.2%) unemployed. Also a large proportion of them (75.4%) were multipara (Parity of 2 - 4), mostly married (82.5%) with secondary level of education (52.6%) and presented largely as unbooked cases. About forty seven percent (47.4%) of them presented between 33 – 37 weeks of gestational age with the mean gestational age being 34.9 ± 3.3 weeks at delivery.

Table 2: Obstetric risk profile of study participants(N= 57)

Variables	Frequency	**(%)**
Previous termination of pregnancy	18	(31.6)
Previous caesarean section	15	(26.3)
Tobacco usage	0	(0.0)
Hypertension/preeclampsia/eclampsia	10	(17.5)
Previous uterine surgery	12	(21.1)
Twin gestation	8	(14.0)
Previous spontaneous miscarriage	15	(26.3)
Pregnancy interval		
Nil	2	(3.5)

Variables	Frequency	(%)
1 - 12 months	18	(31.6)
13 - 24 months	35	(61.4)
25 - 36 months	2	(3.5)

Table 2 showed that history of previous termination of pregnancy (31.6%), previous CS (26.3%)and previous spontaneous miscarriage (26.3%) were relatively common among the parturient. Also, pregnancy interval between 13 – 24 months was commonest (61.4%) while only 3.5% were primipara and as such had no pregnancy interval. There was no tobacco usage among study population,

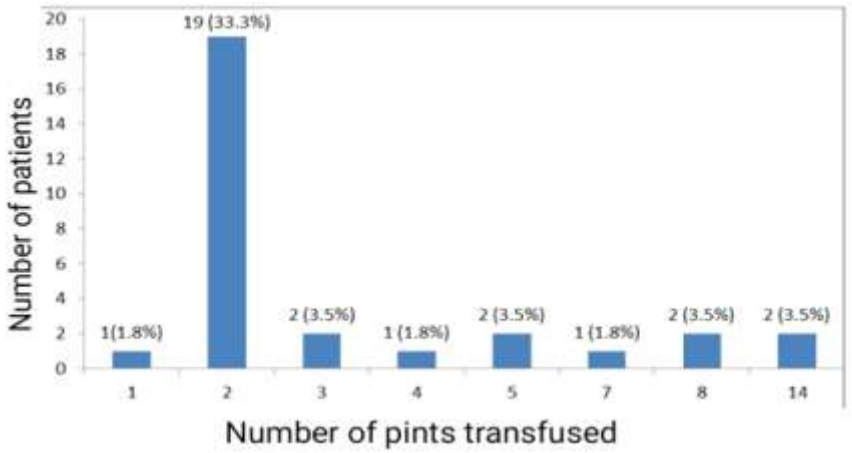

Figure 1: Frequency of blood transfusions among patients

Caesarean section rate among parturients in this study was 80.7%. Only 19.3% had spontaneous vaginal delivery. A total of 30 parturients (52.63%) were transfused with blood. Most of them (63.3%) were transfused with 2 units of blood while 2 patients (6.7%) received 14 units of blood each. The mean unit of blood transfused per patient was 3.6± 3.2. Twenty seven patients (47.37%) did not require blood transfusion (Figure1).

Table 3: Maternal and fetal complications of Antepartum haemorrhage (N=57)

Variables	Frequency	(%)
Maternal complications		
Malpresentation	16	(28.1)
Preterm labour	22	(38.6)
Postpartum haemorrhage	15	(26.3)
Sepsis	8	(14.0)
Shock	4	(7.0)
Retained placenta	2	(3.5)
Maternal death	4	(7.0)
Fetal Outcome of APH		
Preterm baby	43	(75.4)
Low birth weight	31	(54.4)
Intrauterine death	8	(14.0)

Variables	Frequency	(%)
Birth asphyxia	9	(15.8)
Neonatal status		
Alive	46	(80.7)
Dead	11	(19.3)
Apgar Score at 1 min		
<= 6	22	(38.6)
>= 7	24	(42.1)
Nil	11	(19.3)
Apgar Score at 5 min		
<= 6	9	(15.8)
>= 7	37	(64.9)
Nil	11	(19.3)
Birth weight		
< 2.5 kg	31	(54.4)
	26	(45.6)
Admission to NICU		
Yes	33	(57.9)
No	24	(42.1)

Preterm delivery (38.6%) was the commonest maternal complication and four (7%**)** maternal death was recorded during the study period. Prematurity (75.4%) was the commonest fetal complication and 54.4 % of the neonates had low birth weight. While 80.7% of neonates were delivered alive**,**15.8% of the neonates were asphyxiated. Fourteen (14.0%) percent of fetuses died in- utero. Also, there was 19.3% neonatal death during the study period.

Table 4: Relationship between Type of Antepartum haemorrhage and Maternal Complication (N = 57)

Variable	Categories	Abruptio Placental n=20	Placental Praevia n=31	Unknown n=6	AP versus PP OR; *p*-value
Blood transfusion	Yes	12 (60.0)	16 (51.6)	2 (33.3)	
	No	8 (40.0)	15 (48.4)	4 (66.7)	1.41; *p*:0.580
Mal-presentation	Yes	2 (10.0)	14 (45.2)	0 (0.0)	
	No	18 (90.0)	17 (54.8)	6 (100.0)	0.13; *p*:0.012*
Hospital Stay		5 (25.0)	9 (29.0)	4 (66.7)	
	> 5 days	15 (75.0)	22 (71.0)	2 (33.3)	0.81; *p*:1.000
Premature Labour	Yes	7 (35.0)	12 (38.7)	3 (50.0)	
	No	13 (65.0)	19 (61.3)	3 (50.0)	0.85; *p*:1.000
Post-Partum Haemorrhage	Yes	5 (25.0)	10 (32.3)	0 (0.0)	

Variable	Categories	Abruptio Placental n=20	Placental Praevia n=31	Unknown n=6	AP versus PP OR; *p*-value
	No	15 (75.0)	21 (67.7)	6 (100.0)	0.70; *p*:0.755
Sepsis	Yes	3 (15.0)	5 (16.1)	0 (0.0)	
	No	17 (85.0)	26 (83.8)	6 (100.0)	0.92; *p*:1.000
Shock	Yes	4 (20.0)	0 (0.0)	0 (0.0)	
	No	16 (80.0)	31 (100.0)	6 (100.0	17.18;***p*: 0.019***
Retained Placenta	Yes	2 (10.0)	0 (0.0)	0 (0.0)	
	No	0 (0.0)	31 (100.0)	6 (100.0)	N/A:
Maternal death	Yes	0 (0.0)	2 (6.5)	2 (33.3)	
	No	20 (100.0)	29 (93.5)	4 (66.7)	0.29; *p*:0.514

Abruptio placenta: AP; Placental Praevia: PP; UK: Unknown; OR; Odds ratio; N/A: not applicable; *:statistically significant

Further analysis of associations of maternal complications with the different causes of APH showed that abruption placenta is about 87% less likely to be associated with malpresentation than placenta praevia (OR=0.13; p-value=0.01). Also The likelihood of developing shock is about seventeen times more in those with abruption placenta than parturients with placenta praevia (*p*: 0.019; OR: 17.18)as shown in Table 4. Majority of the parturients 39 (68.4%) were hospitalized for > 5 days while 18 (31.6%) stayed in the hospital for less than 5 days with mean duration of hospital stay in days being 6.5± 2.4.

Table 5: Relationship between Type of APH and Fetal Complication(N=57)

Variables	Abruptio Placentae n=20 (%)	Placenta Praevia n=31 (%)	Unknown n= 6(%)	Chi^2	P-value	df
Preterm baby	16 (80.0)	23 (74.2)	4 (66.7)	0.500	0.779	2
Low birth weight	7 (35.0)	18 (58.1)	6 (100.0)	8.231	0.016	2
Intrauterine death	8 (40.0)	0 (0.0)	0 (0.0)	17.216	0.000	2
Birth asphyxia	8 (40.0)	1 (3.2)	0 (0.0)	13.622	0.001	2
Neonatal status				25.216	0.000	2
Alive	9 (45.0)	31 (100.0)	6 (100.0)			
Dead	11 (55.0)	0 (0.0)	0 (0.0)			
Apgar score (1 min)				4.280	0.118	2
≤ 6	7 (77.8)	12 (38.7)	3 (50.0)			
≥ 7	2 (22.2)	19 (61.3)	3 (50.0)			
Apgar score (5 min)				0.996	0.608	2
≤ 6	2 (22.2)	5 (16.1)	2(33.3)			
≥ 7	7 (77.8)	26 (83.9)	4 (66.7)			
Birth weight				2.629	0.269	2

Variables	Abruptio Placentae n=20 (%)	Placenta Praevia n=31 (%)	Unknown n=6(%)	Chi^2	P-value	df
< 2.5 Kg	8 (40.0)	19 (61.3)	4(66.7)			
≥ 2.5Kg	19 (61.3)	12 (38.7)	2 (33.3)			
Admission to NICU	8 (40.0)	21 (67.7)	4 (66.7)	4.050	0.132	2

Preterm delivery and admission into NICU was more among women with APH caused by placenta praevia. Also significant association (p=0.016) was shown in low birth weight, which was also more in patients with APH caused by placenta praevia,

Adverse fetal outcome of intrauterine death, birth asphyxia and early neonatal deaths were significantly worse with abruptio placenta than placenta praevia (p=0.000, p=0.001 and p=0.000 respectively).

Discussion

Antepartum haemorrhage remains one of the dreaded complications in obstetrics due to its adverse maternal and perinatal outcomes. The incidence of APH in this study was 6.02% comprising of placenta praevia (3.27%), abruptio placenta (2.11%) and unknown causes (0.64%). The incidence of APH in this study is higher than incidences reported in other studies in Nigeria.[4,15] It is probable that our higher figures may be explained by the fact that this centre is a tertiary health facility in Delta State, and as such, receives referrals from all over the state and beyond. Again most of the normal uncomplicated deliveries take place in secondary health facilities where free maternal health services of the government are operational. Patients in our hospital pay from their pockets for received care. Some studies have recorded higher figures than ours - a study in Qatar puts the incidence of APH at 15.3%[16] which is higher than the incidence in this study while another study done by Halimi in Parkistan documented an incidence of placenta praevia of 4.2%.[17] The majority of parturient in this study were in the age bracket of 25 – 29 years. This is in agreement with previous studies[7,11,15] and corresponds to the peak reproductive age group.

Placenta praevia was the most common cause of APH in our study and this is in line with other published works.[15] Also our study showed that APH is commoner among multiparous and unbooked parturients. Similar findings were obtained by other researchers -Ciemenski in Chojnice, Northern Poland in 2005[18], Loto at Ile-Ife in 2008[19] and Eniola at Ile-Ife 2002.[7] It is postulated that the recurrent myometrial /endometrial damage due to repeated pregnancy is the explanatory factor.

In consonance with this theory of myometrial and endometrial damage, previous caesarean section and terminations of pregnancy are known risk factors for APH - placenta praevia. In our series majority of the patients had a history of either previous CS or termination of pregnancy.

Blood transfusions were done for 52.6% of parturients and this is quite high when compared to studies done by Adekanle in Southwestern Nigeria (12.4%).[15] Again this may be a reflection of our unique patient population who were unbooked and had lost a considerable amount of blood by the time they reached our hospital.

Our study corroborated some well documented associations of Abruptio placenta and placenta praevia. Our study showed less likelihood of malpresentation in parturients with abruptio placenta compared to those with placenta praevia, and this is in agreement with other published study which revealed that malpresenation is commoner in parturients with placenta praevia than those with abruptio placenta.[20]Expectedly in placenta praevia, the placenta occupies the lower uterine pole preventing the fetal head from occupying the lower uterine pole thereby leading to malpresentation or a very high head presentation. Shock was significantly associated with abruptio placenta in our study. This may have been explained by the large number of unbooked parturients in our study, who may have had concealed bleeding leading to late presentation in hospital. The significant association of Abruptio placenta with intrauterine fetal death, which is similar to finding by Adekanle et al[15], likely stems from the fact that there is usually more fetal bleeding in abruptio placenta, and the bleeding may be concealed and complicated with coagulopathy and more blood loss.

Pregnancy outcome among women with APH is associated with perinatal and neonatal complications, and our study showed significant association between prematurity, low birth weight, birth asphyxia and intra-uterine death with APH. Antepartum haemorrhage was noted as a principal cause of intrauterine death in this study, which is in agreement with the finding in a study conducted by Adekanle et al.[15] Similarly, our study revealed that APH was a major contributor to adverse neonatal outcome, such as birth asphyxia, low birth weight, and preterm deliveries, which is in consonance with the findings in previous studies[15,20=21].The finding of prematurity in this study may likely be related to prompt delivery of the patient to prevent further blood loss and associated maternal and perinatal complications. The intrauterine death and birth asphyxia observed in our study may be due to more fetal bleeding in abruptio placentae, which exposes the fetuses to hypoxia and ultimately death[1], and this further buttresses the relevance of prompt diagnosis and management of APH.

From our study, it can be concluded that APH is a dire obstetric emergency in our environment, and it is still a leading cause of significant maternal morbidity and perinatal morbidity and mortality. Emphasis should therefore be on prevention, early detection, and timely management.

Furthermore, pregnant women should be encouraged to book for antenatal care. Also, prompt referral services, adequately equipped maternity and neonatal intensive care unit, improvement in blood banking and laboratory services should be ensured to improve maternal and neonatal outcomes in patients with APH.

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