ejpmr, 2025, 12(3), 477-483

SJIF Impact Factor 7.065

EUROPEAN JOURNAL OF PHARMACEUTICAL AND MEDICAL RESEARCH

www.ejpmr.com

Review Article

ISSN 2394-3211

EJPMR

PREVALENCE, TYPES AND PATTERN OF PRESENTATION OF ANTEPARTUM HAEMORRHAGE AT USMANU DANFODIYO UNIVERSITY TEACHING HOSPITAL SOKOTO: A FIVE-YEAR REVIEW

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Article Received on 24/01/2025 **Article Revised on 14/02/2025** **Article Accepted on 04/03/2025**

ABSTRACT

Introduction: Antepartum haemorrhage (APH) a major obstetric emergency contributing greatly to maternal and fetal morbidity and mortality especially in the developing world. It is defined as bleeding from the genital tract after the age of viability and before delivery of the baby. The aim of the study was to determine the prevalence, types, pattern of presentation and the fetomaternal outcome of pregnancies complicated by APH at Usmanu Danfodiyo University Teaching Hospital, Sokoto. **Methodology:** A 5-year retrospective review of all pregnancies complicated by antepartum haemorrhage at UDUTH was conducted. The case files were traced and relevant information were obtained. Data was analysed using SPSS version 21. Level of significance was set at $p < 0.05$. **Results:** A total of 378 cases of antepartum haemorrhage were recorded out of the 14689 cases admitted for delivery during the study period. Among the cases, 360 folders were analyzed giving a retrieval rate of 95.2%. Prevalence of APH was 2.6%. The mean gestational age at presentation was 28.2 ± 2 weeks and the most common causes of APH were abruptio placenta, placenta previa, local causes and haemorrhage of undetermined origin constituting 52.5%, 45.5%, 1.4% and 0.6%. There was a significant association between APH and maternal age, booking status, parity, and socioeconomic status. APH was highest among 20-34-year age group. There were 255 live births and 94 stillbirths. The cesarean section rate was 61.4%. Major complications were intrauterine fetal deaths in 26.9%, postpartum hemorrhage in 30.8% of cases, and anemia 63.1%. The case fatality rate was 3% (9 maternal deaths). **Conclusion:** In our environment, APH was very common. It has a high rate of fetal and maternal morbidity and mortality.

KEYWORDS: Antepartum Hemorrhage, UDUTH, Sokoto.

INTRODUCTION

Antepartum hemorrhage (APH) is a major cause of maternal and perinatal morbidity and mortality even in modern day obstetrics and is one of the most frequent emergencies in obstetrics.[1,2,3] It is defined as bleeding from or in to the genital tract prior to delivery of the baby anytime from 20 weeks gestation, in some developed countries or 24 weeks gestation, in others or 28 weeks in countries with low resource settings thus lacking adequate neonatal support facilities.[4,5,6]

APH complicates 0.5–5% of pregnancies which varies with sociodemographic variables.[1,2,7]

The prevalence of APH varies from one country to another and also from facility to facility. The overall prevalence in a study from Qatar was found to be 15.3%.[8] In Nigeria, the prevalence of APH was found to be 3.5% in Lagos,[9] 1.5% in Osun[10] and 1.2% in Kano.[1]

The causes of APH can be grouped into obstetric; which include bloody show, placenta praevia, abruption placenta, vasa praevia, uterine rupture, disseminated intravascular coagulation and non-obstetric; which include cervicitis, cervical cancer, cervical polyps, cervical eversion, vaginitis, vaginal laceration causes.[4,11] Of these, APH is caused majorly by placenta praevia and abruptio placenta and occasionally some local causes however, the incidence of APH is much more than the combined incidence of the above causes.[4] The rest cases are largely of unknown origin also called 'unexplained APH'.[6]

In a comparison of maternal risk factors, research reports concluded that abruption is more likely to be related to conditions occurring during pregnancy i.e. preeclampsia, abdominal trauma, intrauterine infections, prelabor rupture of membranes, polyhydramnios, elevated maternal serum alpha‑fetoprotein, smoking, and substance abuse) and placenta previa related to conditions existing prior to the pregnancy (uterine scar, manual removal of placenta, curettage, advanced maternal age, multiparity, and previous placenta previa).[1,12]

Some of the maternal complications of APH include hypovolemic shock, disseminated intravascular coagulation, and acute renal failure.[13] It also includes higher rates of cesarean sections as high as 83.3% for placenta previa, peripartum hysterectomies (2.1%), and postoperative anemia (7.3%) in a study from Sokoto, Nigeria. The maternal mortality rate was 1% in both studies.[13,14]

Fetal complications are premature delivery, low birth weight, birth asphyxia, and intrauterine fetal death.[2]

The study is aimed at determining the prevalence, types, pattern of presentation and the fetomaternal outcome of pregnancies complicated by APH in Usmanu Danfodiyo University Teaching Hospital, Sokoto.

METHODOLOGY

Study Area

Sokoto, the capital city of Sokoto State lies in the North Western region of Nigeria with a surface area of 26,648.48 square kilometres. Usmanu Danfodiyo University Teaching Hospital (UDUTH) Sokoto, Nigeria is a tertiary institution and a teaching Hospital for Usmanu Danfodiyo University, Sokoto. The Hospital is among the second generation teaching hospitals in the country. It was established on 2nd May, 1980 and became operational on 1st November, 1982. The Hospital has a 500 bed capacity. It serves Sokoto State and neighbouring Kebbi and Zamfara States as well as Niger Republic.

Study design

This was a retrospective study that was conducted at UDUTH, Sokoto. over five years (between 1st January 2016 and 31st December 2020). The list of cases of antepartum haemorrhage during the study period was obtained from medical record office and case files were retrieved. The total number of deliveries during the study period was also obtained. The case files were traced and relevant information on socio-demographic characteristics, booking status, parity, gestational age, nature of bleeding, quantity of blood loss, symptoms, risk factors, type of APH, complications, mode of delivery and fetal and maternal outcome were obtained.

Study population

All pregnant women both booked and unbooked who presented to UDUTH during the study period with bleeding per vaginum at 28 gestational weeks or more were included in the study and were categorized into according to definite diagnosis reached after history, examination and investigation results were collated.

Data analysis

The information obtained was analysed using SPSS version 21. Chi square was used to test for any significant association between categorical variables. The level of significance was set at $p < 0.05$.

RESULTS

A total of 378 patients were diagnosed with APH during the study period and a total of 14,689 deliveries were similarly recorded during the same period giving an institutional prevalence of APH of 2.6%. Three hundred and sixty folders were retrieved and analyzed, giving a retrieval rate of 95.2%.

Table 1 shows the clinical presentation and risk factors of antepartum haemorrhage. Majority of the patients presented with abdominal pain 169 (57.9%), moderate blood loss 135 (39.4%) with perception of fetal movement 234 (74.8%) without any symptom of complications such as dizziness, blurring of vision, palpitations and syncope. About 220 (61.8%) of the patients did not have early warning bleeds. However, some patients presented with symptoms of complications such as dizziness 152 (42.5%), blurring of vision 93 (26.3%), palpitations 93 (26.4%) and syncope 70 (26.3%). Among the risk factors identified, multiparity accounted for 182 (50.6%), while hypertensive disorders 95 (26.4%), no identifiable risk factor 92 (25.6%), advanced maternal age 54 (15.0%), previous evacuation 51 (14.2%) and previous surgery 19 (5.3%) respectively.

The major types of antepartum haemorrhage were abruptio placentae in 188 (52.5%) cases, and placenta previa in 163 (45.5%) cases, while local causes accounted for 5 (1.4%) and haemorrhage of undetermined origin accounted for 2 (0.6%). This is shown in figure 1.

Table 1: Clinical presentation and risk factors of antepartum haemorrhage.

Variable		Frequency	Percentage (%)
Abdominal pain	Yes	169	57.9
	No	123	42.1
Fetal movement	Present	234	74.8
	Absent	79	25.2
	Total	313	100.0

Dizziness	Yes	152	42.5
	No	206	57.5
Blurring of vision	Yes	93	26.3
	No	261	73.7
Palpitations	Yes	93	26.4
	No	259	73.6
Syncope	Yes	70	26.3
	No	196	73.7
Risk factors	Previous surgery	19	5.3
	Previous D & C	2	0.6
	Previous evacuation	51	14.2
	Advanced maternal age	54	15.0
	Multiple gestation	6	1.7
	Trauma to the abdomen	0	0.0
	Hypertensive disorder	95	26.4
	Previous history	0	0.0
	Multiparity	182	50.6
	No identifiable risk factor	92	25.6
	Others	8	2.2

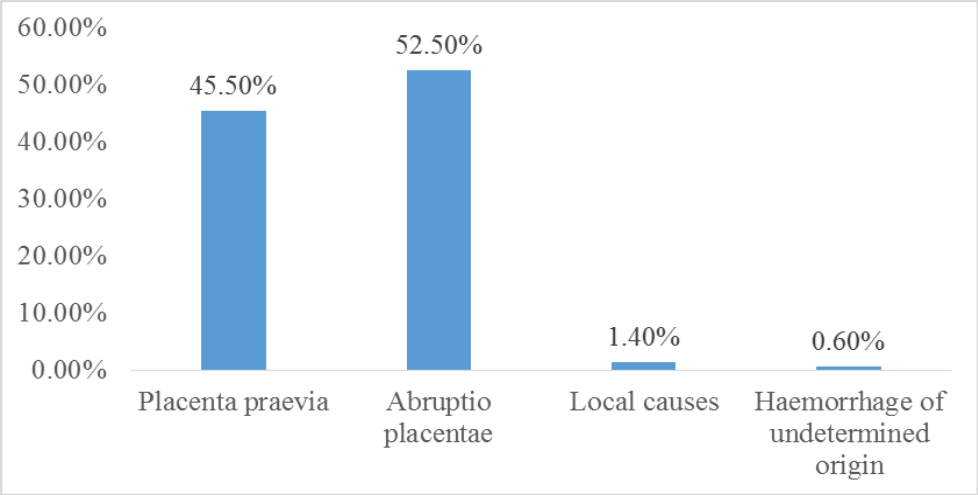

Figure 1: Types of antepartum haemorrhage among the cases.

Table 2 shows the comparison of sociodemographic characteristics of the patients and their relative occurrence among patients with different types of antepartum haemorrhage.

APH occurred more in the 20–34-year age group accounting for 76.9% and the higher parity mothers accounting 73.6%. Significantly, antepartum haemorrhage are seen among the unbooked patients (0.046) when compared with the booked with 214 out of 358 developing antepartum haemorrhage. There was also statistically significant occurrence of antepartum haemorrhage among unemployed (0.003) patients. However, there was no statistically significant association between religion (0.073) and tribe (0.053) and occurrence of antepartum haemorrhage.

Table 2: Association of Socio-Demographic Factors between Different types of Antepartum Haemorrhage.

Variables	Abruptio placentae (%)	Placenta previa (%)	Local causes	Haemorrhage of undetermined origin	χ^2 and p value
Age					
<20	6(60.0)	2(20.0)	2(20.0)	0(0.0)	29.132, **<0.001**
20-34	125(45.1)	147(53.1)	3(1.1)	2(0.7)	
>35	32(45.1)	39(54.9)	0(0.0)	0(0.0)	
Occupation					
Unemployed	130(42.2)	173(56.2)	3(1.0)	2(0.6)	14.103, **0.003**
Employed	33(66.0)	15(30.0)	2(4.0)	0(0.0)	
Tribe					

Hausa	129(44.6)	155(53.6)	3(1.0)	2(0.7)	16.747, 0.053
Igbo	20(66.7)	8(26.7)	2(6.7)	0(0.0)	
Yoruba	4(50.0)	4(50.0)	0(0.0)	0(0.0)	
Others	10(32.3)	21(67.7)	0(0.0)	0(0.0)	
Religion					
Islam	135(43.7)	169(54.7)	3(1.0)	2(0.6)	6.969, 0.073
Christian	28(57.1)	19(38.8)	2(4.1)	0(0.0)	
Education					
Formal education	113(50)	110(48.7)	3(1.3)	0(0.0)	7.857, **0.049**
Non formal education	50(37.9)	78(59.1)	2(1.5)	2(1.5)	
Parity					
0	50(53.8)	39(41.9)	4(4.3)	0(0.0)	14.789, **0.022**
1-4	70(42.9)	90(55.2)	1(0.6)	2(1.2)	
>5	43(42.2)	59(57.8)	0(0.0)	0(0.0)	
Booking status					
Booked	61(41.8)	83(57.8)	0(0.00)	0(0.00)	7.991, **0.046**
Unbooked	102(48.1)	105(49.5)	5(2.4)	2(0.6)	

P<0.005.

Among the risk factors identified, multiparity accounted for 182 (50.6%), while hypertensive disorders 95 (26.4%), no identifiable risk factor 92 (25.6%), advanced maternal age 54 (15.0%), previous evacuation 51 (14.2%) and previous surgery 19 (5.3%) respectively. As much as 111 (30.8%) of the women had PPH, 38 (10.6%) had anaemia, 5 (1.4%) suffered AKI and 5 (1.4%) had sepsis. 45.3% of the fetuses were delivered prematurely and 22.8% had birth asphyxia.

Table 3: Risk factors, maternal and fetal complications of APH.

Risk factors	**Yes F(%)**	**No F(%)**
Previous surgery	19(5.3)	341(94.7)
Previous D & C	2(0.6)	358(99.4)
Previous evacuation	51(14.2)	309(85.8)
Advanced maternal age	54(15.0)	306(85.0)
Multiple gestation	6(1.7)	354(98.3)
Trauma to the abdomen	0(0.0)	360(100.0)
Hypertensive disorder	95(26.4)	365(73.6)
Previous history	0(0.0)	360(100.)
Multiparity	182(50.6)	178(49.4)
No identifiable risk factor	92(25.6)	278(74.4)
Others	8(2.2)	352(97.8)
Maternal Complications		
PPH	111(30.8)	249(69.2)
AKI	5(1.4)	355(98.6)
Sepsis	5(1.4)	5(98.6)
Anaemia	38(10.6)	322(89.4)
Fetal Complications		
Premature delivery	163(45.3)	197(54.7)
Birth asphyxia	82(22.8)	278(77.2)

Table 4 shows the association of fetomaternal outcome between different types of APH.

The mean gestational age at presentation was 28.2 ±SD 2.0 weeks. Most, 57.1%, of the patients presented preterm between gestational ages of 28 and <37 weeks which was significantly lower for abruptio placentae (P = 0.208); 94 out of 163 of those delivering at 28–<37 had placenta praevia, while 62 out of 123 of those delivering at 37 weeks and beyond had abruptio placentae. The fetal outcome and birth weight were generally better in placenta previa group compared to those that had abruptio placenta. More than half; 61.4% of the patients were delivered via cesarean section; however, significantly more patients with abruptio placentae (P < 0.001) had cesarean section compared to those with placenta praevia. Anemia severe enough to necessitate blood transfusion occurred in 63.1% of the patient with APH. There were nine maternal deaths six due to abruptio placentae and three due to placenta praevia giving a case‑specific fatality rate of 3%.

Table 4: Maternal and fetal outcome vs APH category.

Variables	Abruptio placentae (%)	Placenta previa (%)	Local causes	Haemorrhage of undetermined origin	χ^2 and p
Fetal outcome					
Alive	105(41.2)	144(56.5)	4(1.6)	2(0.8)	61.516, **<0.001**
Stillbirth	83(88.3)	11(11.7)	0(0.0)	0(0.0)	
Birth Weight					
Low birth weight	133(44.0)	166(55.0)	1(0.3)	2(0.7)	23.882, **0.001**
Normal	19(51.4)	15(40.5)	3(8.1)	0(0.0)	
Macrosomic	4(100)	0(0.0)	0(0.0)	0(0.0)	
Gestational age at delivery					
28 - <33	15(35.7)	27(64.3)	0(0.0)	0(0.0)	5.886, 0.208
33 - <37	54(44.6)	67(55.4)	0(0.0)	0(0.0)	
≥37	62(50.4)	59(48.0)	0(0.0)	2(1.6)	
Mode of delivery					
Caesarean section	118(53.4)	101(45.7)	2(0.9)	0(0.0)	22.407, **<0.001**
Vaginal delivery	82(71.9)	30(26.3)	2(1.8)	0(0.0)	
Blood transfusion					
Yes	88(38.8)	137(60.4)	0(0.0)	2(0.9)	21.929, **<0.001**
No	73(57.9)	49(38.9)	4(3.2)	0(0.0)	
Maternal outcome					
Maternal mortality	6(60.0)	3(40.0)	0(0.0)	0(0.0)	8.620, 0.196
Complete recovery	153(45.8)	177(53.0)	2(0.6)	2(0.6)	
Discharge against medical advice	6(42.9)	7(50.0)	1(7.1)	0(0.0)	

DISCUSSION

The prevalence of APH was 2.6% in this study which is comparable to 3.07%[15] reported by Zakia Sharafat but slightly higher than the incidence of 1.2% and 1.6% reported from Kano and Maiduguri respectively.[1,16] It is however lower than 5.4% documented in Pakistan[2] and 15.3% from Qatar[8] when compared to our result. The lower figure found in our study may be an underestimate of the actual figure as many patients with APH fail to reach the hospital in time or a multitude of cases may not report to the hospital at all. The low prevalence may also reflect the sociocultural and economic factors in the study environment that do not allow most women to seek medical attention unless in dire need.[17]

The leading cause of antepartum hemorrhage in this study was found to be abruptio placenta followed by placenta previa, local causes and haemorrhage of undetermined origin as opposed to findings in Southwestern Nigeria[18] in which placenta previa was found to be the leading cause.

The prevalence of APH in this study is higher in multipara (50.6%) when compared to patients with lower parity (49.4%). This agrees with reports of other studies.[1,19,20] Hence being a problem of multiparity, reduction in family size and contraception are highly recommended if the prevalence and associated morbidity and mortality are to be reduced.

Up to 77% of unbooked patients suffered APH in a study reported from Hyderabad.[2] Most of the patients (59.4%) who suffered APH in our study were similarly unbooked. This clearly shows the importance of antenatal care in the prevention and early detection of patients with risk factors for APH to reduce morbidity and mortality. Late presentation with complications as shown above was probably due to illiteracy, culture, and poverty which tends to prevent women from coming to the hospital except in life-threatening conditions.[21] The higher incidence of unbooked patients may also be related to their socioeconomic class as up to 85.5% of patients in our study were found to be unemployed. However, a study from Peru[22] found no association between placental abruption and socioeconomic status although the study was conducted among low socioeconomic women. On the other hand, a study conducted in the USA found that women on support were more likely to have placental abruption.[23] In general, the literature has noted an effect of sociodemographic characteristics on placental abruption but not on placenta previa.[24]

Pregnancy outcome among women with APH is associated with both maternal and neonatal complications, and APH has been implicated as a major cause of perinatal death, which is in agreement with other studies in developed settings.[10] This study confirmed the established finding that those with APH were more likely to have an adverse neonatal outcome,[10] such as low birth weight, low Apgar score, stillbirths, and preterm deliveries which were up to 83.8%, 22.7%, 26.1%, and 45.3%, respectively, in our study. In most cases, delivery was iatrogenic in maternal interest. The stillbirth rate was 26.1% in our study, while other studies have quoted a stillbirth rate of 50.2% and 22.2%[2,10] in cases of antepartum hemorrhage. This may likely be related to the rate at which timely intervention is instituted as hemorrhage exposed the fetuses to hypoxia

and ultimately death[2] and this again proves the importance of early and rigorous management of APH.

The maternal complications and/or outcome observed from this study included a cesarean section rate of 61.4%% which is similar to the cesarean section rate of 57.1% in Hyderabad[2], 53.1% in Oshogbo[10] and 53.5% in Kano[1] Postpartum hemorrhage was found in 30.8%% of the women, more than 7.1% found in Oshogbo,[10] 19% in Hyderabad[2] and 24.2% in Kano.[1] This may be related to the significant number of multiparous patients in our study. A transfusion rate of 63.1% was found to be slightly lower than 77.4% in Hyderabad.[2] Maternal mortalities in this study was due to abruptio placentae and placenta praevia and was found to be 3.0% which is comparable to 3% quoted by Sheikh and Khokhar,[2] it is higher than 2.0% reported in Kano[1] which was mainly due to abruptio placentae. The higher rate was attributed to late presentation of the patients and lack of prompt and availability of blood.

CONCLUSION

APH is an obstetric emergency with a high prevalence in our environment, and it is one of the most common causes of significant maternal and perinatal morbidity and mortality. Clinical care should therefore concentrate on prevention, early detection, and prompt management. Furthermore, pregnant women with APH should be considered high risk and timely management should be offered by a trained team and women at risk of APH should be encouraged to book for antenatal care and be delivered in centers equipped for blood transfusion and operative delivery services.

RECOMMENDATIONS

There is need to improve on infrastructures, such as functional blood banks, appropriate antenatal care and referral system in our health facilities to be able to cope with increasing challenges of this obstetric hemorrhage. Further studies on APH are also recommended.

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