OUTCOME OF PREGNANCIES COMPLICATED BY ABRUPTIO PLACENTAE IN KANO, NIGERIA: A 5 YEAR REVIEW

Attah Raphael A, Muhammad Zakari, Aisha Abdulrahman

Department of Obstetrics and Gynaecology, Bayero University/Aminu Kano Teaching Hospital, Kano.

ABSTRACT

Background: *Abruptio Placentae is the commonest cause of bleeding per vaginam in the third trimester of pregnancy. It remains a major cause of perinatal morbidity and mortality globally, though of most serious concern in the developing world. As most known causes of abruptio placentae are either preventable or treatable, an increased frequency of the condition remains a source of concern to obstetricians in the developing world.*

Objectives: *To determine the incidence and the feto-maternal outcome of pregnancies complicated by abruptio placentae in Aminu Kano Teaching Hospital, Kano.*

Study design: *Retrospective study of pregnancies complicated by abruptio placentae at Aminu Kano Teaching Hospital, Kano, Nigeria between 1st January 2010 and 31st December 2014.*

Results: *A total of 152 cases of abruptio placentae were recorded out of 18,220 cases admitted for delivery during the study period, giving a rate 0.83%. Major complications were intra uterine fetal deaths in 52.0%, fetal distress in 36.5%, postpartum haemorrhage in 24.3% of cases, and anaemia necessitating blood transfusion in 61.5%. No maternal mortality occurred due to abruptio placentae during the study period.*

Conclusion: *There is a high incidence of abruptio placentae in our setting. The most frequent foetal outcome was intrauterine foetal death, while postpartum haemorrhage, increased blood transfusion due to severe anaemia and disseminated intravascular coagulopathy, were the major maternal complications.*

Corresponding Author: Dr. Attah Raphael Avidime
Department of Obstetrics and Gynaecology
Bayero University/Aminu Kano Teaching Hospital, Kano.
E-mail: attahraph@yahoo.com

Key Words: *Abruptio placentae, Feto-maternal outcome, complication Kano-nigeria*

INTRODUCTION

Abruptio placentae is a word derived from Latin which means rending asunder of the placenta, and can also be called placental abruption[1]. Abruptio placentae is defined as the premature separation of a normally situated placenta before the delivery of the foetus[1-4]. By this definition, it refers to separation of a normally situated placenta after the 28th week of pregnancy in Nigeria and most developing countries but 20th -24th week of pregnancy in the USA[5].

Abruptio placentae remains a major cause of massive obstetric hemorrhage.[6] It contributes significantly to perinatal morbidity and mortality and it is the commonest cause of intrapartum fetal death[7]. It is also a significant cause of maternal mortality despite advances in obstetric care because of late presentation at health care facilities, the need for multiple transfusion which may not be readily available, and complications such as renal failure[8]. A high proportion of children that survived abruptio placentae are found to have neurological deficit within the first year of life[1].

The incidence of abruptio placentae varies according to locality and obstetric factors prevailing in that society. The world average is about 1%[7]. In the USA, incidence is 1%[9], 4.4% in some parts of Asia [8], 0.44% in Enugu[10], 1% in UCH[11], 0.31% in Port Harcourt and 1.45% in Jos[12], and 3.6% in Niamey in Niger[13].

The primary etiology of abruptio placentae remains unknown but there are several conditions associated with it. Hypertension in

pregnancy, either pregnancy induced or chronic hypertension, is the most consistent predisposing factor[4].44% of women with abruptio have hypertension and 50% of those severe enough to cause intra-partum death are associated with maternal hypertension[4]. Maternal trauma severe enough to cause injury is implicated to be a cause in 35% of abruption[4]. Other associated conditions are age (less than 20 or greater than 35 year)[9], high parity, rapid decompression of the uterus, polyhydramnious, multiple pregnancy, maternal cigarette/cocaine smoking[15] low socio-economic status, race (more common in African), short cord, and supine hypotension syndrome[1-4]. Other possible associations are abnormalities of the uterine blood vessels, uterine fibroids and unexplained increase in the maternal alpha-feto protein serum level[4].

The diagnosis is mainly clinical based on the history and examination findings. The diagnosis could be aided by ultrasonography which reveals retro placental clot if it is long standing even though the absence of a retro placental clot does not exclude abruptio placentae[4].

Retro placental hematoma may be recognized in 2-25% of all abruptions. This recognition depends on the degree of hematoma and on the operator's skill level[16].Ultrasonography may also be helpful in excluding the close differential of placenta praevia. MRI is diagnostically effective and can accurately depict placental abruption. Its use can be considered where ultrasonography findings in the presence of late pregnancy bleeding are negative, but positive diagnosis of abruption would change patient management[17]

There are no laboratory makers useful in the diagnosis of abruptio placentae even through some investigators have described the use of thrombomodulin and CA-125 antigen[1]. CA-125 antigen is reported to have a sensitivity of 70% and specificity of 94% in the diagnosis of abruptio placentae[18].

Postpartum hemorrhage is a recognised sequel of abruptio placentae[4, 8].It can occur due to poor contractility or the Couvelaire uterus or DIC. This can be prevented by active management of labour and continued oxytocin infusion after delivery of the fetus and placenta. Other complications that could occur include consumptive coagulopathy, acute renal failure, increased operative delivery and their sequelae and in some case maternal deaths[3]. Fetal sequelae include intra-uterine death, neurological sequelae[4] in those that survive and severe anemia. Abruptio placenta is a major cause of maternal and perinatal morbidity and mortality[20].

The study in Niger found the commonest maternal complication to be anemia occurring in 76.3%, with transfusion rate of 68.7% and maternal mortality of 5.1%. There was a high still birth rate of 71.3% and 23.8% of the babies were born premature[13].

Another study found complication rates of 16.6% for postpartum hemorrhage, 6.3% for renal failure, 4.2% for DIC, and 8.3% of the women died following abruptio placentae during the study period. The study also found that 52.1% of the babies were born premature, 58.3% were born alive and 41.6% were still born[21].

Abruptio placentae can re occur in subsequent pregnancy. A recurrence rate of 4-12% has been reported[9]. Some preventive measures include treatment of maternal hypertension in pregnancy; prevention of maternal trauma/domestic violence and prevention of smoking and substance abuse by pregnant women.

This study was therefore meant to determine the incidence and feto-maternal outcome of pregnancies complicated by abruption placentae in Aminu Kano Teaching Hospital, Kano.

OBJECTIVES

The objective of this study is to determine the incidence and feto-maternal outcome of pregnancies complicated by abruptio placentae in Aminu kano Teaching Hospital, Kano

MATERIALS AND METHODS

This is a retrospective study carried out in the department of Obstetrics and Gynecology of Aminu Kano Teaching Hospital, Kano. Labour ward record was used to extract file

number of patients who had abruptio placentae and their case notes were retrieved from the medical records department of the hospital. The case records and antenatal data of all the women with abruptio placentae delivered at Aminu Kano Teaching Hospital, Kano, from January 2010 to December 2014 were retrieved and analyzed with respect to their age, parity, gestational age at presentation, occupation, booking status, risk factors, presenting complaints, Packed Cell Volume and blood pressure at presentation, mode of delivery and the fetal and maternal complications.

TABLE 1: SOCIODEMOGRAPHIC CHARACTERISTICS OF PATIENTS

Characteristics	**Number**	**%**
a) Age distribution		
20-24	16	10.8
25-29	24	16.2
30-34	38	25.7
35-39	57	38.5
40-44	13	8.8
Total	**148**	**100**
Mean age= 32.8 years ± 5.5 years		
b) Parity distribution		
0-2	42	28.4
3-4	60	40.5
=5	46	31.1
Total	**148**	**100**
Mean parity= 3.6 ± 2.0		
c) Booking Status		
Booking Status	Booking Status	Booking Status
Unbooked	102	68.9
Total	**148**	**100**
d) Occupation	**Number**	**%**
Housewife	69	46.6
Trader	33	22.3
Civil Servant	24	16.2
Student	12	8.1
Others*	10	6.8
Total	**148**	**100**

*tailor, farmer, baker, typist

RESULTS

A total of 152 patients were diagnosed with abruption during the study period out of a total of 18,220 deliveries giving a prevalence of 0.83%. 148 folders were retrieved, giving a retrieval rate of 97.4%, and these are the folders that were analysed.

Table 1 shows the Sociodemographic characteristics of the patients who had abruptio placentae. The age range was 21-44years and the mean age was 32.8years ± 5.5years. Most of these women, 38.5%, were in the age group 35-39years, while, 8.8% were aged 40years or more. The proportion with low parity was high, with 68.9% being para 4 or less and 31.1% being grandmultiparous. The mean parity was 3.6 ± 2.0. 68.9% of the patients were unbooked, while 31.1% were booked. 46.6% were housewives, 22.3% were traders, 16.2% were civil servants, 8.1% were students in tertiary institutions, and 6.8% had other occupations such as seamstress and farmers. The mean gestational age at presentation was 35.3 weeks ± 2.0. Most of the patients, 64.9%, presented at gestational age between 33-37weeks. Only 1 (0.7%) was post term.

The main presenting complaint was vaginal bleeding which occurred in 82.4% of the patients. 76.4% complained of abdominal pain, while 25% complained of dizziness and 12.2% had absent fetal movement.

Table 2 shows the risk factors identified. 51.0% were hypertensive, 42.3% were older than 35 years, and 16.2% were grandmultiparous. 14.8% had previous history of abruptio placentae identified as the predisposing factor. In 2.0% it occurred following sudden decompression of the uterus by sudden uncontrolled liquor

TABLE 2: RISKS IDENTIFIED

Factor	Number	%
Hypertension	77	52.0
Age =35years	70	42.3
Grandmultiparity	24	16.2
Previous abruptio placentae	22	14.8
Sudden liquor drainage	3	2.0
Trauma	2	1.4
Unclear	38	25.7

TABLE 3: MODE OF DELIVERY

Mode	Number	%
Vaginal	62	41.9
Caesarean section	86	58.1
Total	**148**	**100**

TABLE 4: FETAL OUTCOME

5' APGAR	Vaginal delivery		Caesarean section		Chi-square	p-value
score	Number	%	Number	%		
0 (IUFD)	59	95.2	18	20.9	24.58	0.001
1-3	0	0.0	3	3.5	2.13	0.144
4-6	2	3.2	29	33.7	14.01	0.001
7-10	1	1.6	36	41.9	20.24	0.001
Total	**62**	**100**	**86**	**100**		

drainage. Another 1.4% had abdominal trauma identified as a predisposing factor. There was no clear predisposing factor in 25.7%, while some of the patients had multiple predisposing factors identified. 3.4% had systolic blood pressure less than 90mmHg, and 48.6% had systolic blood pressure of 140mmHg or more. The Diastolic blood pressure was less than 60mmHg in 3.4% of patients and 110mmHg or more in 25.7%. 5 patients who were known to be hypertensive were found to have systolic blood pressure of less than 140mmHg following the vaginal bleeding. 5.4% had severe anemia with PCV of 21% or less, and 31.7% had PCV of 30% or more. All of the women reviewed had normal clotting time ranging between 3-10minutes. 72 patients had urinalysis done at presentation using dipstick, 9 (12.5%) had significant proteinuria of 3+++ (>300mg/dl), 6 (8.3%) had 2++ (100mg/dl), 2 (2.8%) proteinuria of 1+ (30mg/dl), while the remaining 55 (76.4%) had negative protein results.

Table 3 shows the modes of delivery. The mode of delivery was vaginal in 41.9% and 58.1% had caesarean section.

Table 4 shows the fetal outcome. 95.2% of the babies born via the vaginal route were still born and only 4.8% were born alive, out of which only 1 (1.6%) had a 5 minute APGAR score of 8. Of the babies delivered by Caesarean section, 20.9% died at birth, and 41.9% had 5minute APGAR scores of 7-10. Babies delivered by caesarean section had a better outcome than those delivered by vaginal route with statistical significant difference (P=0,001).The maternal complications noted were postpartum hemorrhage in 24.3%, and anemia severe enough to necessitate blood transfusion. 61.5% had need for blood transfusion. 1 (1.1%) had 5 units of blood transfused, while 8 (8.8%) had 4 units of blood transfused. 21 (23.1%) had to be transfused with 3 units of blood while the remaining 61 (67.0%) had 1 or 2 units of blood transfused. There was no maternal death; renal failure or disseminated intravascular coagulopathy in this study. The hospital stay of the women was longer than those that did not have abruption with an average stay of 72 hours for those that had a vaginal delivery and 9 days for those who had abdominal deliveries.

DISCUSSION

Abruptio placentae is a significant cause of third trimester bleeding, it remains as an important cause of maternal morbidity and mortality and more significantly a cause of perinatal morbidity and mortality both in developing and developed parts of the world. The incidence of 0.83% found in this study is comparable to 1% found at UCH Ibadan[11], but lower than 4.4% found in Abbottabad Pakistan[8] and 3.6% found in Niger[13].It is however more than 0.44% found in Enugu, in the eastern part of Nigeria[10]. The high

incidence in this study compared to that found in Enugu may be a reflection of the higher population of Kano compared to Enugu. The study is also hospital based and most cases referred to our center are complicated cases.

The age of majority of these women was above 35 years; this is similar to findings by other authors[10, 13]. 31.1% of the women in this study were para 5 and above.This is similar to the finding by Ozumba BD in Enugu (33.3%)[10]and Nayama et al in Niger (38.2%)[13]. The effect of age and parity as seen in this study is in accordance with the international literature[22]. This means that an effective patient education program coupled with good family planning services can help in decreasing the incidence of abruption in our community.

Most of the patients (68.9%) in this study were unbooked. This is similar to the findings in a study in Pakistan[23]. This may be related to their socio-economic class as most of these women belonged to the low socio-economic class as revealed by their occupation. The main risk factors for abruptio placentae identified in this study were hypertension; age 30 years and above, grandmultiparity and previous history of abruptio placentae. This is similar to the findings of other studies[20,21]. A study in Uganda found that patients with chronic hypertension and previous Caesarean section were 56 and 10 times more likely to have abruptio placentae in future pregnancies respectively[23]. The recurrence rate was found to be 14.8% in this study which is in accordance with international literature[24]. It means that abruptio placenta is a high risk situation with a high recurrence rate. Most of the women presented with vaginal bleeding (82.4%). Similar observation was made by Tikkanen M, et al, in which vaginal bleeding was common presenting symptom in 70% of women[15].

Eighty six (58.1%) of the cases were delivered by Caesarean section while sixty two (41.9%) had vaginal delivery. The main indication for the operation was abruptio placentae with a live baby, but 4 patients (2.7%) had it on account of 2 previous caesarean sections, and delivered still born babies. The patients who were confirmed to have IUFD were allowed to have vaginal delivery in the absence of other indications for Caesarean section. The 3 patients who delivered live babies vaginally had vacuum delivery done.

The maternal complications observed from this study included postpartum hemorrhage and anemia. Postpartum hemorrhage was found in 24.3% of the women comparable to 22.2% found in Enugu[10] but more than 18.9% found in Abbottabad[8].

Anemia severe enough to warrant transfusion of more than 3 units of blood was found in 9.9%. Transfusion rate of 61.5% was found, similar to 68.7% found in Niger[13]. This is a high value when the risks of blood transfusion including the potential risks of viral transmission are considered. The value is lower than 91.4% found in Enugu[10]. Abruptio placentae is responsible for about 6% of maternal mortality[8] but there was no maternal death attributable to abruption during the study period, this may be due to the level of care offered at AKTH, the center being a tertiary institution with the presence of a functioning blood bank. The occurrence of such complications like renal failure and disseminated intravascular coagulation are possible causes of maternal death from abruptio placenta, but none of these complications were noted in this study.

CONCLUSION

Abruptio placentae have a high incidence in our environment. The perinatal outcome is generally poor with a high rate of intrauterine fetal death. Caesarean section was associated with better fetal outcome than vaginal delivery in abruption placentae with live baby, while maternal outcome is generally more favorable, Postpartum hemorrhage and anemia being the common maternal complications observed.

References:

1. Leveno K J, Bloom S L, Hauth J C, Gilstrap III L C, Wenstrom: Obstetrical Haemorrhage: In William's obstetrics.

22nd .McGAW-HILL. 2005: 810-819

2. Neilson JP: Antepartum haemorrhage. In Dewhurst Textbook of Obstetrics and Gynaecology for Postgraduates. Edmonds, D. K (Ed) Blackwell science.1999: 134-144
3. Adinma JIB. Aetiology and management of obstetrics haemorrhage. In contemporary obstetrics and gynaecology for developing countries. 1st ed. Okonofua F, Odunsi, K(Ed). WHARC.2003, 625-628
4. Kwawukume EY: Antepartum haemorrhage. In comprehensive obstetrics in the tropics. 1st edition. Kwawukume E.Y, Emuveyan E.E(Ed). Asante and Hittscher.2002: 145-150
5. Ananth CV, OyeleseY, Pradhan A, Vintzileos AM. Placental abruption in the United States 1979 through 2001: temporal trends and potential determinants. Am J Obstet Gynecol.2005; 192(1): 191-8
6. Agboola A. Antepartum haemorrhage. In: Agboola A (eds). Textbook of obstetrics and gynaecology for medical students. Lagos. Heinemann Education Books Plc. 2006: 340-347
7. Slava V. Emergent Management of Abruptio Placentae. Available at http://www.emedicine.com. Updated 2011
8. Sarwa I, Abbasi AN, Islam A: Abruptio Placentae and Its Complications at Ayub Teaching Hospital, Abbottabad. J Ayub Med Coll Abbottabad.2006; 18(1) 27-31
9. Shad HD: Abruptio Placentae. Available at http://www.emedicine.com. Updated 2011.
10. Ozumba BD: Abruptio Placentae at University Of Nigeria Teaching Hospital, Enugu, a 3 Year Study. Aust. N.Z.J Obstet Gynaecol: 1989, May, 29 (2):117-120
11. Obed JY, Adewole IF: Antepartum Haemorrhage. The Influence of First Trimester Uterine Bleeding. W A J M 1996, Jan-Mar: 15 (1) 61-63
12. Musa J, Sagay AS, Ekwempu CC, Ibrahim AS. Abruptio placentae. Analysis of 34 consecutive cases in Jos. Trop J Obstet Gynaecol. 2004;21(suppl 1)S18
13. Nayama M, Tamakloe-Azamesu D, Garba M. Abruptio Placentae. Management in a Reference Nigerien Maternity. Prospective Study of 118 Cases during One Year. Gynecol Obstet Fertil. 2007; 35(10): 975-81
14. Eskes TK. Clotting disorders and placental abruption: homocysteine - a new risk factor. Eur J Obstet Gynaecol Reprod Biol 2001; 95(2):206-12
15. Tikkanen M, Nuutila M, Hiilesmaa V, Paavonen J, Ylikorkala O. Clinical presentation and risk factors of placental abruption. Acta Obstet Gynecol Scand. 2006; 85(6):700-5
16 .Plunkett J, Borecki I, Morgan T, Stamilio D, Muglia LJ. Population-based estimate of sibling risk for preterm birth, preterm premature rupture of membranes, placental abruption and pre-eclampsia. BMC Genet. Jul 8 2008; 9:44
17. Masselli G, Brunelli R, Di Tola M, Anceschi M, Gualdi G. MR imaging in the evaluation of placental abruption: correlation with sonographic findings. Radiology. Apr 2011; 259(1): 222-30
18. Witt B R, Miles R, Wolf G C: CA 125 levels in Abruptio Placentae. Am J Obstet Gynaecol; 1991 164: 1225
19. Signore C, Mills JL, Qian C, Yu K, Lam C, Epstein FH, et al. Circulating angiogenic factors and placental abruption. Obstet Gynecol. Aug 2006; 108(2):338-44
20. Omigbodun A O: Commentary. Recent Trends in the Management of Anaemia in Pregnancy. TJOG:2004; 21(1):1-3
21. Razia MA, Naushaba R, Firdous M, Shaista F. Feto Maternal Outcome Among Abruptio Placentae Cases at a University Hospital of Sindh. J Liquat Uni Med Health Sci. 2008; 7(2): 106-9
22. Bibi S, Ghaffar S, Pir MA, Yousfani S.

Risk factors and clinical outcomeof placental abruption: a retrospective analysis.Pak Med Assoc. 2009; 59(10):672-4

23. Wandabwa J, Doyle P, Paul K, Wandabwa MA, Aziqa F. Risk Factors for Severe Abruptio in Mulago Hospital, Kampala, Uganda. Afr Health Sci. 2005; 5(4): 285-90
24. Hladky K, Yankowitz J, Hansen WF. Placental abruption. Obstet Gynecol Surv. 2002; 57(5):299-305