

FREQUENCY, MATERNAL AND FETAL OUTCOME OF ABRUPTIO PLACENTA IN A RURAL MEDICAL COLLEGE HOSPITAL, MIRPURKHAS SINDH

Qamarunisa¹, Habibullah Memon², Muhammad Ali³

ABSTRACT

Objective: To determine the frequency, maternal and fetal outcome of abruptio placentae in a rural medical college hospital, Mirpurkhas Sindh, Pakistan.

Methodology: This is an observational prospective study conducted at obstetric and gynaecology department of Muhammad Medical College Hospital during one year from 1st June 2007 to 31st May 2008. All patients with diagnosis of abruptio placenta and gestational age of >24 weeks were included in the study. Data were collected on questionnaire after informed consent and results were analyzed by calculating percentages.

Results: Total number of women delivered in ward during study period was 2132. Abruptio placentae was seen in 84(3.9%) patients. Majority of women n=43 (51.1%) were in the age group of 25-30 years. Incidence was higher in multi-parous, being 73 (86.9%). A total of 59(70%) women were anemic. Pregnancy induced hypertension was seen in six (7%), diabetes in five (6%) and multiple pregnancy in four (5%). No risk factor was present in 10(12%) women. As regards mode of delivery, 62(74%) women delivered spontaneously vaginally and 21(25%) underwent caesarean section. One patient died undelivered cause being severely anemic, shock and disseminated intravascular coagulation (DIC). Major maternal complication seen was hypovolumic shock in 21(25%), followed by postpartum hemorrhage in 11(13%), altered coagulation profile in six(7%) and renal failure in two (2.3%) of patients. 52(62%) women delivered alive babies while 32(38%) were stillborn. Out of 52 alive born, two died within first week of birth due to prematurity. Overall perinatal mortality was 40.4%.

Conclusion: Abruptio placenta is associated with high rate of maternal and fetal morbidity and mortality and to reduce this, the risk factors associated with abruptio placenta must be evaluated before and during pregnancy.

KEY WORDS: Abruptio placenta, Perinatal mortality, Shock, DIC, Postpartum haemorrhage.

Pak J Med Sci July - September 2010 Vol. 26 No. 3 663-666

How to cite this article:

Qamarunisa, Memon H, Ali M. Frequency, maternal and fetal outcome of abruptio placenta in a rural Medical College Hospital, Mirpurkhas Sindh. Pak J Med Sci 2010;26(3):663-666

1. Dr. Qamarunisa,
Assistant Prof, Dept. of Obstetrics and Gynaecology.
 2. Dr. Habibullah Memon,
Senior Lecturer & Consultant Pathologist,
Dept of Pathology.
 3. Dr. Muhammad Ali, Postgraduate Student.
- 1-3: Muhammad Medical College,
Mirpurkhas, Pakistan.

Correspondence:
Dr. Qamarunisa,
E-mail: drhabib_memon@yahoo.com

* Received for Publication: October 14, 2009

* Accepted: April 29, 2010

INTRODUCTION

Placental abruption is the premature separation of a normally situated placenta from the uterine wall before delivery. The cause of abruptio placenta is unknown but a hypothesis suggests placental or vascular abnormalities due to failure of secondary invasion of trophoblastic villi. Abnormal placentation, vascular malformations and increased fragility of vessels predispose to haematoma formation resulting in

abruptio placenta.^{1,2} Abruptio placenta occurs in 0.8 – 1.0% of all pregnancies³⁻⁵ and 1.2% in twin pregnancies world wide.⁶ Placental abruption has also been associated with preterm labor.⁷ The incidence of abruption peaks at 24 to 26 weeks of gestation.⁸

Risk factors associated with placental abruption comprise previous abruption (strongest risk factor), mechanical factors (i.e. trauma), chronic hypertension, gestational hypertension, cigarette smoking, cocaine use, preterm premature rupture of fetal membranes (PPROM), multiparity, multiple gestations, advanced maternal age, inherited thrombophilias, and polyhydramnios.⁹⁻¹³

Differences in risk of placental abruption based on ethnicity have also been reported.¹⁴ In one study, second trimester bleeding, vertex presentation and placenta praevia were also found to be risk factors for an abruptio placenta.¹⁵ Maternal age and parity have been linked to abruptio placenta. But recent studies suggest increase in abruptio placenta with increase in parity only up to the age of 30 years. The highest link was seen in parity of three and age below 20 years after adjusting for confounding factors.¹ Multiple pregnancies have an increased risk of abruptio placenta attributed to placental under perfusion.⁶

It is a major cause of third trimester haemorrhage and perinatal death. The high maternal morbidity and mortality is due to severe haemorrhage that follows this complication. The fetal morbidity and mortality is due to reduced placental surface area for oxygenation.⁷ To reduce maternal mortality as well as morbidity, correct antenatal follow up, early diagnosis and prompt evacuation of the uterus are required.¹⁶

The common signs and symptoms of abruption are vaginal bleeding, uterine and abdominal pain and tenderness, abnormal uterine contractions, premature labour, maternal hemodynamic instability, fetal distress and fetal death.^{17,18} The fetal complication rate is very high and include prematurity, hypoxia, growth restriction, anemia and high mortality.^{17,19} Owing to the independent association found

between placental abruption and perinatal mortality, the conditions predisposing it should be carefully evaluated in order to reduce the occurrence of placental abruption.⁵

METHODOLOGY

This was an observational prospective study conducted at obstetric and gynaecology department of Muhammad Medical College Hospital during one year from 1st June 2007 to 31st May 2008. All patients with diagnosis of abruptio placenta and gestational age of >24 weeks were included in the study. Data were collected on questionnaire after informed consent. The data included detailed history including age, gravida, parity, gestational age details of physical examination, results of investigations, mode of delivery, out come of fetus and maternal morbidity and mortality. The diagnosis of placental abruption was made on clinical ground in the presence of uterine pain, vaginal bleeding, uterine tenderness and hyper tonic uterus.

After history and complete physical examination, investigations were performed which included complete blood picture, blood grouping, coagulation profile, renal function test, liver function tests, screening for hepatic virology, urinalysis and ultrasound. Diagnosis was confirmed on the presence of retroplacental clot, which was used to estimate the amount of bleeding and severity of abruption. Patients were managed according to the fetal and maternal conditions. All information was gathered on Performa. Results were analyzed by calculating percentages.

RESULTS

Total number of deliveries from 1st June 2007 till 31st May 2008 was 2132 at our unit. Total number of patients with ante-partum haemorrhage was 125 (5.86%), out of them 84 (3.9%) were having abruptio placenta, and 41 (1.92%) were diagnosed with placenta praevia. All the patients were un-booked. Majority of women n=43 (51.1%) were in the age group of 25-30 years. 39 (46.4%) women were more than

30 years of age and only two (2.3%) patients were less than 25 years (Table-I). Incidence was higher in multi-parous, being 73 (86.9%), while 11 (13%) patients were primi-gravida.

Mainly the abruption was seen in women with term pregnancy i.e. 51(60.7%) and 33(39.2%) were before term. Out of these 84 women with abruption, 35(41.6%) had mild, 28(33.3%) had moderate and 21(25%) were having severe abruption (Table-II).

A total of 59(70%) women were anemic. The cut off value of hemoglobin for the diagnosis of anemia was 10.5 g/dl. Pregnancy induced hypertention was seen in six (7%), diabetes in five (6%), multiple pregnancy in four (5%), while 10(12%) women were those in whom no risk factor was present (Table-II). Severe anemia with hemoglobin level of less than 7gm/dl was present in 22(37.3%) out of 59 anemic women, nine (15%) were moderately anemic with hemoglobin level of 7-10gm/dl, while 28(47.5%) were mildly anemic having hemoglobin levels of 10-10.9gm/dl.

Regarding mode of delivery, 62(74%) women delivered spontaneously vaginally and 21(25%) underwent caesarean section. One patient died undelivered cause being severe anemia, shock and DIC. Major maternal complication seen was shock in 21(25%), followed by postpartum hemorrhage in 11(13%), altered coagulation profile in six (7%) and renal failure in two (2.3%) of patients. Fifty two (62%) women delivered alive babies while 32(38%) were stillborn. Out of these 52 alive born babies two died in early neonatal period due to prematurity. Overall perinatal mortality was 40.4%.

Table-I: Age, parity and gestational age of the patients.

<25 years old	2(2.3%)
25-30 years old	43(51.1%)
>30 years old	39(46.4%)
Primigravidas	11(13%)
Multigravidas	73(86.9%)
Gestational age< 37 weeks	33(39.2%)
37 weeks or more	51(60.7%)

DISCUSSION

Abruptio placenta remains a major cause of perinatal morbidity and mortality globally, though of most serious concern in the developing world. The incidence of abruptio placenta in this study is comparable with a study conducted by Mussarat Jabeen and Fouzia Gul at Peshawar.²⁰ Increased incidence was seen in patients belonging to rural areas and multipara with advancing age. This same observation is also evident from other studies.^{15,20-22} Majority of patients were anemic. These observations are also seen in other Pakistani studies.^{20,21} This high frequency of anemia could be due to pre-existing nutritional deficiency anemia being very common in our setup and then superimposed by abruption. An association with diabetes and hypertention was observed in this study, which is also evident from other studies.²²⁻²⁵ Many other studies highlights the association of PIH, anemia and diabetes with the occurrence of placental abruption.^{20,26}

Sharief and Manther in their study compared 50 hypertensive and 104 normotensive cases of abruption and concluded that there was an increased incidence of abruption in hypertensive females.²⁷ Delivery outcome of our study shows that majority of women delivered vaginally, caesarean section being only performed in cases where fetus was alive or there was very severe abruption. Same observations were also seen in other studies making vaginal route, the common route of delivery in cases of abruption.^{16,20,21} Regarding maternal complications shock was the most common, followed by PPH, altered coagulation profile and renal

Table-II: Severity of Abruption and Risk Factors.

Mild abruption	35 (41.6%)	25%
Moderate abruption	28 (33.3%)	33.3%
Severe abruption	21 (25%)	41.6%
Anemia	59 (70%)	70%
PIH	6 (7%)	7%
Diabetes	5 (6%)	6%
Multiple pregnancy	4 (4.7%)	4.7%
No risk factor	10 (12%)	12%

failure. These findings were compared with a study done by Pitaphorm A et al, where, in 103 cases of abruption, shock was the leading complication seen in 19.4% and disseminated intravascular coagulation in 5.8%.²⁸

Fetal mortality observed is high, mainly the intrauterine death, the reason seems to be abruption itself, its risk factors as well as the prematurity. This high mortality is comparable with other studies.^{27,29}

CONCLUSION

Abruptio placenta is associated with high rate of maternal and fetal morbidity and mortality, Because of this association found between placental abruption and maternal and fetal morbidity and mortality, the conditions predisposing it should be carefully evaluated in order to reduce the occurrence of placental abruption.

REFERENCE

- Hladky K, Yankowitz J. Placental abruption. *Obstet Gynecol Surv* 2002;57(5):299-305.
- Misra DP, Ananth CV. Risk factor profiles of placental abruption in first and second pregnancies: heterogeneous aetiologies. *J Clin Epidemiol* 1999;52(5):453-461.
- Rasmussen S, Irgens LM. The occurrence of placental abruption in Norway 1967-1991. *Acta Obstet Gynecol Scand* 1996;75(3):222-228.
- Ananth C V, Smulian JC. Incidence of placental abruption in relation to cigarette smoking and hypertensive disorders during pregnancy: A meta-analysis of observational studies. *Obstet Gynecol* 1999;93(4):622-628.
- Kyrklund-Blomberg NB, Gennser G. Placental abruption and perinatal death. *Paediatr Perinat Epidemiol* 2001;15(3):290-297.
- Ananth CV, Smulian JC. Placental abruption among singleton and twin births in the United States: Risk factor profiles. *Am J Epidemiol* 2001;153(8):771-778.
- Harris BA Jr, Gore H, Flowers CE Jr. Peripheral placental separation: A possible relationship to premature labour. *Obstet Gynecol* 1985;66(6):774-778.
- Rasmussen S, Irgens LM, Bergsjø P, Dalaker K. The occurrence of placental abruption in Norway 1967-1991. *Acta Obstet Gynecol Scand* 1996;75(3):222-228.
- Ananth CV, Oyelese Y, Yeo L, 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):91-198.
- Misra DP, Ananth CV. Risk factor profiles of placental abruption in first and second pregnancies: Heterogeneous etiologies. *J Clin Epidemiol* 1999;52(5):453-461.
- Prochazka M, Happach C, Marsal K, Dahlback B, Lindqvist PG. Factor V Leiden in pregnancies complicated by placental abruption. *BJOG* 2003;110(5):462-466.
- Mackenzie AP, Schatz F, Krikun G, Funai EF, Kadner S, Lockwood CJ. Mechanisms of abruption-induced premature rupture of the fetal membranes: Thrombin enhanced decidual matrix metalloproteinase-3 (stromelysin-1) expression. *Am J Obstet Gynecol* 2004;191(6):1996-2001.
- Nurk E, Tell GS, Refsum H, Ueland PM, Vollset SE. Associations between maternal methylenetetrahydrofolate reductase polymorphisms and adverse outcomes of pregnancy: The Hordaland Homocysteine Study. *Am J Med* 2004;117(1):26-31.
- Ananth CV, Oyelese Y, Yeo L, 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):191-198.
- Sheiner E, Shoham-Vardi I. Placental abruption in term pregnancies: Clinical significance and obstetric risk factors. *J Matern Fetal Neonatal Med* 2003;13(1):45-49.
- Thieba B, Lankoande J, Akotioinga M. Abruption placenta: Epidemiological, clinical and prognostic aspects with respect to a 177 case series. *Gynecol Obstet Fertil* 2003;31(5):429-433.
- Gaufberg SV. Abruption placentae.[online webpage] 2001 Mar[cited 2003 Jul 15]: Available from URL: http://www.emedicine.com/emerg/topic_12.htm.
- Shah S, Miller PR, Meredith JW, Chang MC. Elevated admission white cell count in pregnant trauma patients: An indicator of on going abruption. *Am Surg* 2002;68(7):644-647.
- Ananth CV, Berkowitz GS, Savitz DA, Lapinski RH. Placental abruption and adverse perinatal outcomes. *J Clin Epidemiol* 1999;52(5):453-461.
- Jabeen M, Gul F. Abruption placenta: Risk factors and perinatal outcome. *J Postgrad Med Inst* 2004;18(4):669-679.
- Sarwer I, Abbasi AN, Islam A. Abruption Placenta and its complications at Ayub Teaching Hospital Abbottabad. *J Ayub Med Coll Abbottabad* 2006;18(1):27-31.
- Toivonen S, Heinonen S, Anttila M. Reproductive risk factors. Doppler findings and outcome of affected births in placental abruption. *Am J Perinatol* 2002;19(8):451-460.
- Oyelese Y, Ananth CV. Placental abruption. *Obstet Gynecol* 2006;108(4):1005-1016.
- Dafallah SE, Babikir HE. Risk factors predisposing to abruption placentae. Maternal and fetal outcome. *Saudi Med J* 2004;25(9):1237-1240.
- Witlin AG, Sibai BM. Perinatal and maternal outcome following abruption placentae. *Hypertens Pregnancy* 2001;20(2):195-203.
- Liaquat NF, Shoab T, Shuja S. A study of abruption placentae. *J Surg Pakistan Mar* 2006;11(1):27-30.
- Sharief M, Manther AA. Abruption placentae. Perinatal outcome in normotensive and hypertensive patients in Basra, Iraq. [Serial online] 1998;emhj;4(2):319-23. Available from: URL: <http://www.emro.who.int/publications/EMHJ/0402/16.htm>.
- Pitaphorm A, Sukharoen N. pregnancy outcome in placental abruption. *J Med Assoc Thai* 2006;89(10):1572-8.
- Abbasi RM, Rizwan N, Mumtaz F. Feto maternal outcome among Abruption placentae cases at a University hospital of Sindh. *JLUMHS* 2008;7(2):106-109.