Frequency and Maternal Outcome Following Placental Abruption

Nabila Khan, Samina Jadoon, Naseem Akhtar

ABSTRACT

Background: Placental abruption is one of the leading causes of antepartum hemorrhage in third trimester. It is associated with significant maternal and fetal morbidity and mortality.
Objective: To determine the maternal morbidity and mortality following placental abruption.
Material And Methods: A descriptive retrospective study was conducted at Gynae B Unit, Mardan Medical Complex, Mardan and duration of study was from January2015 to March 2017. Maternal complications like disseminated intravascular coagulation, Hypovolemic shock, postpartum hemorrhage, renal failure, respiratory distress syndrome, hysterectomy and in hospital death were taken into account.
Results: The results of our study revealed that most of the women were in age group of (25 -35)with mean age at 31.35.Two third of them belonged to poor socioeconomic status. 80% of patients had no previous antenatal record. Incidence was higher in multigravidas and hypertensive women.98% presented with vaginal bleeding and 54% were in labor. Most of them 65% delivered vaginally and 35% underwent C-section.Major maternal complications occurred in 52% cases. The most common maternal complication was anemia in 87(87%) of cases.23(23%) patients had primary postpartum hemorrhage and the cause of hemorrhage was uterine atony in 17(17%) cases and abnormal clotting profile in 6(6%) cases. Hypovolemic shock was present in 9(9%).Disseminated intravascular coagulation was seen in 6(6%),Renal failure requiring hemodialysis in 3(3%), hysterectomy for controlling life-threateningpostpartum hemorrhage in 10(10%) while maternal death occurred in 1(1%) patient.
Conclusion: In conclusion placental abruption is a serious and unpredictable Obstetric condition compromising maternal health and wellbeing. Early diagnosis, prompt delivery of fetus with appropriate multidisciplinary management and early intervention can limit maternal complications and mortality. However it was found that cesarean section increased maternal morbidity by increasing risk of obstetrical hysterectomy at C-section as compared to women delivered vaginally.
***Key Words**: Placental abruption, maternal morbidity, maternal mortality, Antepartum Hemorrhage.*

This article may be cited as: Khan N, Jadoon S, Akhtar N
Frequency and Maternal Outcome Following Placental Abruption JSMC 2018.8;2:156-160.

INTRODUCTION:

Placental abruption is the premature separation of a normally situated placenta before delivery and it is one of the leading cause of massive obstetrical hemorrhage and maternal death in the latter half of pregnancy[1,2]. Incidence varies from 0.49% to 1.8% with recurrence rate of 4-8%.Exact etiology is not known but multiple risk factors are advanced maternal age, grand multiparity, pregnancy induced hypertension, thrombophilias, malpresentations and polyhydromnios[3,4,5].It may coexist with Placenta Previa in 10% of cases.

Placental abruption is associated with significant maternal and perinatal morbidity and mortality. Major maternal complications include postpartum hemorrhage, hemorrhagic shock, disseminated intravascular coagulation, renal failure, acute respiratory distress syndrome, anemia, covelair uterus, hysterectomy. Placental abruption is associated with maternal death rate of upto 3.9%[6].Major fetal complications include, intrauterine growth restriction, anemia, low birth weight, congenital anomalies. Fetal mortality rate ranges from 4-67%[7].

It classically present with vaginal bleeding in 70-80%, abdominal pain and tenderness. Placental abruption occurs due to rupture of uterine spiral artery with bleeding into decidua which leads to separation of placenta and compromising blood supply to the fetus. Placental abruption may be concealed or revealed[8].Diagnosis is mainly clinical as retro placental clot is seen in 2-25% of cases on ultrasound[9,10]. Placental abruption is classified into three stages by Shers classification:

Stage I is a mild with unexplained vaginal bleeding and a retrospective diagnosis of a small heamatoma postpartum.
Stage II is the intermediate form with a hypertonic uterus and a live baby.
Stage III is the severe form with an intrauterine death, subdivided into IIIA without coagulopathy and stage IIIB with coagulopathy.

1. Department of Gynae/Obs. Bacha Khan Medical College Mardan KP

Correspondence: Dr.Nabila Khan.
Assistant Professor,
Bacha Khan Medical College, Mardan.
Cell No: 03454277080
Email Address: dr.nabilakn@gmail.com

Received: March 24th 2018, Accepted August 02nd 2018

There is no treatment to stop or reattach the placenta. Management depends upon maternal and fetal condition, amount of bleeding and gestational age at presentation. Both maternal morbidity and mortality can be reduced by reducing the interval between decision and delivery. Recurrent placental abruption. Appropriate multi disciplinary management can limit maternal morbidity and mortality but perinatal mortality which occurs in utero remains high.

Due to increase in the number of patients presenting with placental abruption and increasing maternal complications following placental abruption in our unit. Aim of the study will be to determine the frequency of placental abruption and associated maternal morbidity and mortality. The data will be used to know the common complications resulting from placental abruption in our patients and to what extent we can anticipate and treat these complications to reduce maternal morbidity and mortality.

MATERIAL AND METHODS :

A descriptive retrospective study was carried out at Gynae and Obstetric Unit at Mardan Medical Complex, Mardan from 1st January 2015 to 30th July 2017.Study was carried out in 100 cases of confirmed placental abruption. On clinical and ultrasound findings patients were selected from casualty and outpatient department. After fulfilling inclusion and exclusion criteria patients were included in the study after informed consent. Patients were assessed by taking detail history, stress will be on gestational age, abdominal pain and vaginal bleeding. Abdominal examination for fundal height, lie presentation, abdominal tenderness and fetal heart was done. Per speculum vaginal examination to exclude any local causes of vaginal bleeding and pelvic examination for bishop scoring after excluding placenta previa. Obstetrical ultrasound for retro placental clots and fetal viability and presentation was done. Routine and specific investigations like Full blood count, renal function test, liver function test, Serum Electrolytes, Coagulation Profiles were done .Relevant data was entered on Performa.

Main outcome measures will be maternal complications like Anemia, Postpartumhemorrh age, Shock, Renal Failure, Respiratory distress syndrome, DIC, Hysterectomy, and maternal death following placental abruption. Study variables like age, gestational age, presenting symptoms, ultrasound findings, maternal complications and maternal death will be analyzed for descriptive statistics. Frequencies were determined for presenting symptoms, ultrasound findings and maternal complications. MEAN $\pm$standard deviation was calculated for age, gestational age. Data analysis was done using SPSS 20.0

RESULTS:

Total number of deliveries during the study period were 14060.Total number of APH cases were 206.Consecutive 100 cases of placental abruption were included in the study. Incidence of placental abruption was 0.7. The clinical demographic features with frequency and percentages are shown in Table 1. The mean age at presentation was 31 years. The incidence was more common in multiparous patients 55(55%) as compared to primi and grand multiparus .80(80%) of patients were unbooked on admission and belonged to poor socioeconomic status 66(66%).The maternal clinical characteristics are shown in table No. 2.

Most of patients presented after 36 weeks of gestation 59(59%). The mean hemoglobin level at presentation was 8.7mg/dl. The presenting complaint was vaginal bleeding in 98(98%) and abdominal pain in 58(58%) 9(9%) patients presented in shock. At arrival 54(54%) patients were in labour[10]. 10% patients were hypertensive. Ultrasound evidence of placental abruption was present in 65(65%) cases. 54 (54%) patients were already in labor and mode of delivery was vaginal route in 65 (65%) cases while Cesarean section was done in 35 (35%)and main indication was profuse vaginal bleeding with poor bishop score. Frequency and percentages of maternal outcome are shown in table no. 3.

The most common maternal complication was anemia seen in 87(87%) of cases and in 63(63%)of these patients had moderate anemia.23(23%) patients had primary postpartum hemorrhage and the cause of hemorrhage was uterine atony in 17(17%) cases and abnormal clotting profile in 6(6%) cases. Hypovolumic shock was present in 9(9%).Disseminated intravascular coagulation was seen in 6(6%) ,Renal failure requiring hemodialysis in 3(3%),hysterectomy for controlling life-threatening postpartum hemorrhage in 10(10%) while maternal death occurred in 1(1%) patient and the cause of death was renal failure.

TABLE 1:DEMOGRAPHIC FEATURES
n=100

DEMOGRAPHIC FEATURE	FREQUENCY AND PERCENTAGES
AGE	
15 –25	17(17%)
26 –35	68(68%)
36 –45	15(15%)
PARITY	
Primiparus	9(9%)
Multiparous	55(55%)
Grandmultiparus	36(36%)
BOOKING STATUS	
Booked	10(10%)
Unbooked	90(90%)
SOCIOECONOMIC STATUS	
Poor	66(66%)
Satisfactory	34(34%)
GESTATIONAL AGE IN WEEKS	
28 – 35wks	41(41%)
36 – 40wks	59(59%)

TABLE 2: MATERNAL CLINICAL CHARACTERISTICS
n=100

CLINICAL CHARACTERISTIC	FREQUENCY AND PERCENTAGES
HEAMOGLOBIN	
10 -12 mg/dl	13(13%)
9.9 – 7.1mg/dl	63(63%)
4 – 7mg/dl	24(24%)
PRESENTATION	
Vaginal bleeding	98(98%)
Abdominal pain	42(42%)
Shock	9(9%)
ULTRASOUND FINDINGS	
Retro placentalhematoma present	65(65%)
HYPERTENTION	10(10%)
MODE OF DELIVERY	
Normal vaginal delivery	60(60%)
Vacuum delivery	4(4%)
Forceps delivery	1(1%)
C-section	35(35%)

TABLE3 : MATERNAL OUTCOME
n = 100

OUTCOME VARIABLES	FREQUENCY AND PERCENTAGES
Postpartum Hemorrhage	23(23%)
Disseminated intravascular coagulation	6(6%)
Renal Failure	3(3%)
Respiratory distress	0(0%)
Hysterectomy	10(10%)
Anemia	87(87%)
Maternal death	1(1%)

DISCUSSION:

Placental abruption is an Obstetrical emergency associated with considerable maternal morbidity and mortality. It is one of the main causes of major obstetrical heamorrahge. The frequency of placental abruption in our study is comparable to studies in American, European and East Asian population[4,5,9,11] but some local studies by Soma et.al, Bibi S etal and at Ayube Teaching hospital have shown a higher incidence of placental abruption[12,13].The lower incidence in our study may be due unrecorded small and revealed abruptions in hospital charts or recorded under different diagnosis.68% of patients in our study were in the age group 26-35 consistent with results of local studies but some studies have shown increased incidence in women with advanced age[4,14,15].Younger age group women were at risk due to marriages at younger age in our society.55(55%)women were multiparous in contrast to its typical association with grand multiparty in many local and international studies[16,17]

10% were hypertensive and results were consistent with study by Hunge TH et al However, local study at Aube and Theiba B showed higher incidence of abruption in hypertensive women .In a study by Leunen K and colleagues have shown 75% of women with hypertensive disorders presenting with abruption[19]. 87% of patients in our study were anemic however, it can't be concluded whether it was the result or squeale of abruption and results were consistent with local and other studies.70% of patients delivered vaginaly and results were consistent with other studies. C-section was done in 35% and main indication of c-section was poor bishop score with profuse vaginal bleeding while other studies have shown a C-section rate of 60%[20]. It was found that c-section increased maternal morbidity in terms of early decision of obstetrical hysterectomy for postpartum heamorhage at c-section and increased requirement for blood transfusion, icu care and hospital stay. However, it was not associated with increased maternal mortality.

Major maternal complications occurred in 52% of patients. The most common maternal complication was postpartum hemorrhage 23% and results were consistent with study by BoisrameT et.al and Pitaphraom A et.al and in a local study at Ayube medical college[21] while study at India has shown shock as major complication 24% followed by postpartum Hemorrhage13%[22]. Other complications in our study were Hemorrhagic shock, DIC, Renal Failure. Incidence of DIC was 10% in study by Boisrame et al and local studies. However. Incidence of renal failure in our study was 3% and DIC was 6% which was lower as compared to other local and international studies. Hysterectomy for controlling intractable postpartum Heammoraghe was 10%.9 hysterectomies at c-section while only one patient delivering vaginally underwent hysterectomy for controlling intractable postpartum heamorhage which was found higher as compared to other studies[23]. Maternal mortality was 1% in our studies which was low as compared to study by Bibi S5 cases, Ayube medical college 3 cases, Hossain N 2cases and Colmen et al 2 cases [24]. The cause of death was renal failure in our study while deranged coagulation and anemia was the main cause of death in other studies.

CONCLUSION:

In conclusion placental abruption is a serious and unpredictable Obstetric condition compromising maternal health and well being. Early diagnosis, prompt delivery of fetus with appropriate multidisciplinary management and early intervention can limit maternal complications and mortality. However, from our study it was found that ceseareen section increased the risk of maternal morbidity by increasing risk of obstetrical hysterectomy at c-section as compared to women who delivered vaginally.

Limitation of study do exist as the Incidence of Placental Abruption was low as data was collected from Mardan Medical Complex and unrecorded small and revealed abruptions in hospital charts or recorded under different diagnosis. Observer bias was present as patients were examined by doctors of different levels and cases of mild abruption may have been missed.

REFERENCES:

1. Olylese Y,AnathCV.PlacentalAbruption.Obstet Gynecol. 2006 ; 108 : 1005 -1016.
2. Papp Z. Massive obstetrical hemorrhage.JPerinat Med 2003 ;31:408-414.
3. Tikkanen M.PlacentalAbruption:Epidemiology,risk factors and consequences.ActaObstetGynecol Scand.2011;90:140-149.
4. BibiS,Ghaffars et al.Risk factors and Clinical outcome of Placental Abruption.A retrospective analysis.2009 oct.;59(10);672-4.

5. Sama Mukharjee Retrospective study of risk factors and maternal and fetal outcome in patients with abruption placentae.J Nat SciBiol Med.2014 Jul Dec,5(2):425-428.
6. Hossain N,Khan N Placental Abruption and adverse pregnancy outcome. J Pak Med Assoc.2010 Jun,60(6):443 -6.
7. Kryklund-Blomberg NB Placental Abruption and perinatal death.P eadiatrePerinat Epidemiol.2001: 15:290-7.
8. Mei Y Clinical Significance of Primary symptoms in women with Placental Abruption.2017 Jul.6: 1-4.
9. Anath CV,KinzlerWL.PlacentalAbruption.Clinical features and Diagnosis.In:Lockwood CJ ed.UpToDate.Philadelphia:Wolters Kluwer Health;2014.
10. M Kikutani, K ishharaetal.Value of Ultrasonography in diagnosis of Placental Abruption.2003;227-233.
11. Hung THsci,Heish CC The risk factors for placental abruption in Asian population. Reprod Sci 2007;14 59-65.9
12. Soma Mukharjee Retrospective study of risk factors and maternal and featal outcome in patients with placental abruption.J Nat SciBiol Med.2014;5(2):425-428
13. Irum Sarwar Placental abruption and its complications at Ayub Medical College.2006;18(1)
14. Luke B ,Brown MB.Elevated risks of pregnancy complications and adverse pregnancy outcomes with increasing maternalage.Hum Reprod.2007;22:1264-72
15. Jahromi BN,HusseiniZ.Pregnancy outcome at maternal age 40 and older.Taiwan.JObstet Gynecol.2008;47:318-21.
16. Anath CV,Lvery J Severe placental abruption .Clinical definition and associations with maternal complications.AmObstetGynecol 2016;214:272.e1-9
17. SheinierE,Shohan Varali Placental abruption in term pregnancies.Clinical significance and obstetric risk factors.JMaternFetal neonatal Med 2008
18. Theiba b,Lankanode J Abruptioplacentae. Epidemiological,clinical and prognostic aspect with respect to 177 case series.GynecolObstet Fertile.2003 May;31(5);429-33
19. Leunen K, Hall DR The profile and complications of women with placental abruption and intrauterine death.J Trop Pediatr.2003Aug;49(4):231-4
20. Boisrame T Abruptioplacentae.GynecolObstet Fertile.2014 Feb;42(2):78-83
21. Pitaphram A, Sukcharoen N Pregnancy outcome in placental abruption.J Med Assoc Thai.2006 Oct;89(10):1572-8
22. Nizam K,Jamal M A dreadful complications seen in patients with abruption placentae. Pak Armed Forces Med J,2004;54(10):84-7.
23. Shrivastava Materna l and Fetal outcomeamong AbruotioPlacenate cases at rural tertiary care hospital in Karnatika,India; A retrospective study.Int J Resh Med Sci.2014 Nov;2(4):1655-1658
24. Coleman J Maternal and Fetal prognosis in abruption placentae at Korle Bu Teaching Hospital Ghana. Afr J Reprod Health.2014