

# A study on maternal and perinatal outcome of abruptio placentae in a tertiary centre

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## ABSTRACT

**Objective:** The study was aimed to find out the incidence, obstetric risk factors, and various complications of abruptio placentae and to analyze the maternal and perinatal outcome of the same. **Materials and Methods:** It was a hospital based observational study for a period of one year carried out from 1<sup>st</sup> June 2012 to 31<sup>st</sup> May 2013. Study population included all pregnancy cases of gestational age of 28 weeks onwards having sign and symptoms of abruptio placentae. **Results:** Out of 15111 deliveries there were 70 cases of abruptio placentae. The incidence of abruptio placentae was found to be 0.46%. Associated risk factors were anaemia (51.4%), gestational hypertension (37.1%), previous caesarean section (28.6%), polyhydramnios, oligohydramnios etc. Vaginal delivery and caesarean section rates were 58.57% and 41.43% respectively. Eighty percent (80%) babies required NICU and 40% had early neonatal death. **Conclusion:** Maternal and fetal complications can be minimized provided patients report in time, so that prompt, judicious and definite measures can be undertaken expeditiously and correct treatment instituted.

**Keywords:** Abruptio placentae, retroplacental clot, anaemia.

Abruptio placentae is a catastrophic obstetrical situation. The term abruption placenta is a Latin word, meaning rending as under of the placenta. The term accidental haemorrhage is also used to describe it as this event takes place without any expectation. The incidence of abruption placentae varies from 0.5% to 1.0% worldwide<sup>1</sup>. In India, it ranges from 2.5% to 3.8%<sup>2</sup>. Important risk factors of abruptio placentae include hypertensive diseases, multiparity, previous history of abruptio placentae, scarred uterus, hyperhomocysteinemia, abdominal trauma, smoking and drug abuse etc. Although several risk factors are known, the exact cause of placental abruption often remains

unexplained. Vaginal bleeding with painful uterine contractions during second half of pregnancy is a classical symptom of placental abruption.<sup>3</sup> The uterus is generally hard and tender on palpation. Signs and symptoms of shock may be present in severe cases. Abruptio placentae is essentially a clinical diagnosis determined by the above features and is confirmed by finding of retroplacental clots after delivery.<sup>4</sup> Placental abruption is associated with poor maternal and fetal outcome. In spite of increasing awareness about placental abruption, it still largely remains unpredictable and hence unpreventable.

This study was undertaken to find out the incidence, associated risk factors, perinatal and maternal outcome in

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tertiary centre catering to the rural population in this part of the country. It was anticipated that the results of this study will help in the understanding of this obstetric problem and will enable us in making better management plans.

### Materials and Methods

Study population included those women who presented with signs and symptoms of abruptio placentae above 28 weeks of pregnancy onwards between the months of June, 2012 to May, 2013 in Gauhati Medical College and Hospital, Guwahati, Assam. Retrospectively cases with pathological evidence of placental abruption detected after delivery were also included. Maternal outcome was recorded in terms of mode of delivery, mode of induction in if any, abruption delivery interval, grade of abruption placentae, postpartum complications, requirement of blood and blood products. Perinatal outcome included weight and sex of baby, live or stillborn, APGAR score at 1 and 5 minutes, NICU admission, cause of NICU admission and perinatal mortality. The observations are tabulated and analyzed in number and percentage.

### Results

Out of 15, 111 deliveries, 436 (2.88%) cases had antepartum haemorrhage and of them, 360 cases had placenta praevia (82.94%), 70 cases had abruptio

**Table 1: Showing associated risk factors**

Risk Factors	No (%)
Anaemia	36(51.42)
Hypertensive disorders	26 (37.14)
Previous h/o abortion	21 (30.0)
Previous LSCS	20 (28.6)
Oligohydramnios	6 (8.6)
Tobacco chewing	5 (7.14)
Previous h/o abruptio placenta	3 (4.2)
PROM	2 (2.85)
Uterine Fibroid	2 (2.85)
Placenta praevia	2 (2.85)
Hypothyroidism	2 (2.85)
Polyhydramnios	1 (1.4)
Trauma	1 (1.4)

placentae (16.05%) and 6 cases (1.38%) were due to other causes. Incidence of abruptio placentae was 1 in every 215 deliveries. Maximum 48 (68.57 %) cases were between age group 21 – 30 years.

Incidence of abruptio placentae was found to be significantly higher with increasing parity. It was

**Table 2: Showing grading of cases according to Page's classification**

Grade	No (%)
Grade 0	13(18.57)
Grade 1	23(32.85)
Grade 2	29(41.42)
Grade 3	5(7.14)

observed that 27.14% cases were primigravida and 72.85 cases were multigravida. Most of the cases were preterm delivery. Majority of cases (n=47) were found in less than 36 completed weeks of pregnancy. Mean gestational age was 34.27 weeks. Overall 58.57 % were delivered vaginally and 41.43 % were delivered by LSCS. Table 1 show various risk factors associated with abruptio placentae. Anaemia has the highest association followed by hypertensive

**Table 3: Showing modality of termination**

Modality of termination of pregnancy	No of Cases	SVD	LSCS
With ARM	21	15	6
induction/ ARM + Oxytocin	26	24	2
augmentation PG	2	0	2
Total	49	39	10
With no induction/augmentation		2	-
LSCS (No trial of Vaginal delivery)		-	19
Total		41	29

disorders, previous history of abortion, LSCS and abruption, PROM. Table 2 shows maximum cases were of grade 2 (41.42%) followed by grade 1 (32.8%). Above table 3 shows induction was given to 49 patients. ARM (artificial rupture of membrane) with oxytocin was given to highest number of patients (53.06 %). Out of which, 24 had vaginal delivery and 2 had caesarean section. PPH (postpartum haemorrhage) was observed in 15.71% cases. Shock at admission was present in 2.9 % cases, Couvelaire uterus incidence was 5.71%. Two patients had coagulation failure, 7.1 % cases had wound infection and 2.9% had puerperal sepsis. PPH was the most common complication observed. In grade 0 abruptio placentae, out of 13 patients, 8

patients were given total 20 units of whole blood and 4 units FFP (fresh frozen plasma). In grade 1, out of 23

**Table 4: Showing fetal outcome and mode of delivery**

Fetal outcome	Mode of delivery		Total
	Vaginal delivery	Cesarean section	
Live born	5(32.25%)	26(67.74%)	31(44.3%)
Still birth	36 (89.74%)	3(10.25%)	39(55.7%)
Total	41 (58.6%)	29(41.4%)	70(100%)

cases, 10 patients received 18 units whole blood and 5 units FFP. In grade 2, out of 29 cases, 9 patients required 19 units whole blood and 6 units FFP. In grade 3, though number is only 5, all received blood products (8 units whole blood, 4 units FFP and 4 units platelets). The table 4 shows that the incidence of caesarean section is significantly higher in cases of abruptio placentae with live baby while the incidence of vaginal delivery is higher when the baby is stillborn. Majority 55.7% cases had still births and only 44.3% had live births.

The mean birth weight in our study was 1.8 Kg. Perinatal mortality and morbidity were more in low birth weight group which was found to be strongly associated

**Table 5: Showing neonatal complications**

Complications	No (%)
Birth asphyxia	9(29.1)
Hyperbilirubinemia	8(25.8)
Neonatal sepsis	8(25.8)
Respiratory distress syndrome	1(3.2)
Need for ventilator	10(32.3)

with abruptio placentae. APGAR score was between 5 – 10 in 24.28% live births. Out of 31 live births, there were 10 neonatal deaths. There were 64.28% preterm and 35.7% term deliveries. It is observed that complications seen in neonatal period were due to prematurity. There were 64.28 % (n =45) preterm and 35.7% (n=25) term deliveries. Birth asphyxia, hyperbilirubinemia and neonatal sepsis were commonest complications (Table 5).

## Discussion

Abruptio placentae is a major cause of maternal and perinatal morbidity and mortality. In developing world, increased frequency of the condition remains a cause of medical concern. Incidence observed in present study is

comparable with those of Mukherjee Jaydev et al<sup>5</sup>, Ananth et al<sup>4</sup>, Minna Tikkanen et al<sup>3</sup> and Martin Prochazka et al<sup>6</sup>. We observed significant association of abruptio placentae with age group 21-30 years, which was also finding of various studies like Poddar et al<sup>7</sup>, Gopalkishna et al<sup>8</sup> and Mukherjee et al<sup>5</sup>.

In our study, maximum incidence of abruptio placentae was seen to be before 36 weeks of gestation which is in keeping with other studies like Khosla et al<sup>9</sup>, Tabinda Rana et al<sup>10</sup> etc. Hypertension was associated with placental abruptio in 37.14% cases in our study which is similar to studies of T N Abdella<sup>11</sup> and Mukherjee et al<sup>5</sup>. Anaemia was also observed to have significant association in our study, but it was very difficult to comment its relationship as a causative factor for abruptio, because majority of cases were unregistered and prior haemoglobin levels were not known. Thakur et al<sup>12</sup> (2001) reported 2.09% cases of abruptio with moderate anaemia and 5.26% case of abruptio with severe anaemia. In the present study, 58.57% patients delivered vaginally and 41.42 % patients underwent LSCS which is similar to studies of Nazil Hossain et al<sup>13</sup> and Tabinda Rana et al<sup>10</sup>. Because of better modality of intrapartum fetal monitoring, fetal distress is diagnosed early and operative intervention is taken. Seven percent cases were transfused whole blood or packed cell. Vaidya and Gopalkrishna<sup>8</sup> stated that in their study massive blood transfusion was required in 8% cases and total 52% were given transfusion. Palaniappan<sup>14</sup> studied caesarean section in abruptio and found that all patients with LSCS needed blood transfusion. In our study also, 51% of patients with LSCS received blood transfusion.

The mean birth weight is found to be 1.8 Kg. In a study by Nath et al<sup>15</sup>, among abruptio cases, 60.3% were low birth weight in comparison with 11.2% of controls. In the present study there was a high incidence of intrauterine fetal death (55.76%). This could be because of late admission, late referral and prolonged interval between abruptio to delivery time. Vaidya and Gopalkrishna et al<sup>8</sup> and Majumdar et al<sup>16</sup> found comparable results to our study. Nine (29.1%) babies had birth asphyxia, 25.8% had hyperbilirubinemia and 25.8% babies also had septicemia, 3.2% had respiratory distress syndrome. Majumdar et al<sup>16</sup> (2001) have also shown Respiratory distress (11%), hyaline membrane disease

(14%), pulmonary haemorrhage, meconium aspiration, jaundice, septicemia as causes of neonatal morbidity in patients with abruptio placentae.

### **Conclusion**

Abruptio placentae is a catastrophic obstetrical situation. Prevalance of this condition is high in our institution, though very few data has been published so far. The findings on placental abruption noted in our study have clinical and public health implications. Established risk factors for placental abruption like hypertension, anaemia etc are potentially preventable. Maternal and fetal complications can be minimized provided patients report in time, so that prompt, judicious and definite measures can be undertaken expeditiously and correct treatment instituted. There is need for women's emancipation and improvement in medical and health care facilities at affordable rate and within reach of rural population.

**Conflict of interest:** None. **Disclaimer:** Nil.

### **References**

1. Ananth CV, Oyelese Y, Prasad V, Getahun D, Smulian JC. Evidence of placental abruption as a chronic process: associations with vaginal bleeding early in pregnancy and placental lesions. *Eur J Obstet Gynecol Reprod Biol.* 2006; 128: 15 - 21.
2. Saftlas AF, Olson DR, Atrash HK, Rochat R, Rowley D. National trends in the incidence of abruptio placentae 1979-1987. *Obstet Gynecol.* 1991; 78: 1081 - 86.
3. Tikkanen M, Nuutila M, Hiilesmaa V, Paavonen J, Ylikorkala O. Prepregnancy risk factors for placental abruption. *Acta Obstetrica Et Gynecologica Scandinavica.* 2006; 85(1): 40-4.
4. Yeo L, Ananth CV, Vintzileos AM. Placental abruption. In: Sciarra J, editor. *Gynecology and Obstetrics.* Hagerstown, MD: Lippincott, Williams & Wilkins; 2003.
5. Mukherjee J, Saha SK, Ganguli RP, Sanghamita M, Ghosh RS. A 5 year review of severe abruptio placentae. *J Obstet Gynecol Ind.* 2003; 53(2): 149 - 52.
6. Prochazka M. Selected Pregnancy Variables in Women with Placental Abruption. *Biomed Pap Med.* 2006; 150 (2): 271-73.
7. Poddar PL. Outcome in accidental haemorrhage. *J Obstet Gynecol Ind.* 1961; 1: 386.
8. Vaidya PR, Gopalkrishna. Abruptio placentae (A study of 105 cases). *J Obstet Gynecol Ind.* 1984; 39(2): 225 – 27.
9. Khosla A, Dahiya V, Sangwan K, Rathor S. Perinatal outcome in antepartum haemorrhage (A five year study). *J Obstet Gynaecol Ind.* Feb 1969; 39(1): 71-3.
10. Muhammad S, Tabinda R. Fetomaternal outcome in pregnancies complicated with placental abruption. *Pak J Med Health Sci.* 2011; 5(1):140-3.
11. Abdella TN, Sibai BM, Anderson GD. Perinatal outcome in abruption placentae. *Obstet Gynecol.* 1984; 63: 365.
12. Awasti A, Thakur R, Dave A, Goyal V. Maternal and perinatal outcome in cases of moderate severe anaemia. *J Obstet Gynecol Ind.* 2001; 51(6): 62-5.
13. Hossain N, Khan N, Sultana SS, Khan N. Abruptio placenta and adverse pregnancy outcome. *J Pak Med Assoc.* 2010 Jun; 60(6): 443-6.
14. Palanippa B, Dharani S, Syed M F. Caesarean section in accidental haemorrhage. *J Obstet Gynecol Ind.* 1984; 34(3): 77-82.
15. Nath CA, Ananth CV, DeMarco C, Vintzileos AM, New Jersey Placental Abruption study investigations. Low birth weight in relation to placental abruption and maternal thrombophilia status. *Am J Obstet Gynaecol.* 2008; 198: 293.
16. Arora R, Devi U, Majumdar K. Perinatal morbidity and mortality in antepartum haemorrhage. *J Obstet Gynecol Ind.* 2001; 51(3):102-4.

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