

Study Of Maternal And Perinatal Outcome In Patients With Abruption Placenta

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Abstract: Background: Abruption placenta is one of a serious obstetrics emergency. It is defined as partial or complete separation of normally implanted placenta after 28 weeks of gestation, prior to delivery of the fetus. Placental abruption complicates about 1% of pregnancies and is a leading cause of vaginal bleeding in the latter half of pregnancy.¹ AIMS: To study maternal outcome in patients with abruption placenta. To study perinatal out come in patients with abruption placenta. Material And Methods: A prospective observational study was carried out at tertiary hospital for 6 months from September 2019 to February 2020. 30 cases of abruption placenta were enrolled in this study. Results: Maximum patients (56.6%) were from 26 – 30 year age group. (63.3%) were having second gravida. Maximum (56.6%) patients admitted were between 33 – 36 week gestational age group. Most of (60%) patients were having revealed type of bleeding. (52.3%) patients were having grade 2. Major maternal morbidities were PPH (36.6%), severe shock (23.3%) and DIC (6.6). (26.6%) babies had birth asphyxia, (16.6%) developed ARDS. Sepsis and ICH was seen in (10%) each whereas necrotizing enterocolitis and stillbirth was found in (13.3%). Perinatal death was seen in (6.6%). Conclusion: Abruption placenta is associated with poor maternal and fetal outcome. Early diagnosis and prompt resuscitative measures are essential to prevent both perinal and maternal morbidity and mortality. [Bariya E Natl J Integr Res Med, 2020; 12(1):17-21]

Key Words: Abruption Placenta, Placental Abruption, Postpartum Haemorrhage

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Introduction: Placental abruption is defined as partial or complete separation of normally implanted placenta after 28 weeks of gestation, prior to delivery of the fetus.² Abruption can occur at any time during late pregnancy but most commonly occur around 34 weeks. Bleeding is almost always maternal, seen in 78% of the cases presented.³

The primary cause of abruption is unknown but is associated with several conditions. Maternal conditions like as pregnancy-induced hypertension, chronic hypertension, PPRM, sudden uterine decompression, uterine leiomyoma, thrombophilia, folic acid deficiency and inferior vena cava occlusion contribute to the condition. External risk factors and behaviours like trauma to the abdomen, cocaine abuse and cigarette smoking also have a significant effect.^{4,5}

The major contributing factors in our country are lack of antenatal care, low socioeconomic status, anemia, etc.^{6,7} Prognosis of the mother and the baby depends on the clinical type, degree of placental separation, interval between the separation of placenta and delivery of the baby and the efficacy of treatment.

amount of blood retained in utero and the area of abruption of placenta.

Maternal risks of placental abruption include obstetric haemorrhage, need for blood transfusion, emergency obstetric hysterectomy, disseminated intravascular coagulopathy, renal failure and puerperal sepsis. Perinatal complications include low birth weight, preterm delivery, asphyxia and perinatal death. In surviving infants, long term neurological sequelae like cerebral palsy are greater. Types of abruption depending upon external bleeding present or not.^{3,8}

Concealed: Blood collects behind the separated placenta or in between the membrane and decidua. Blood is not visible outside through cervix. Rare variety.

Revealed: Following separation of placenta, blood comes out through the cervix. Most common variety.

Mixed: Here, it is partly revealed and partly concealed. This is quite common Grade 1 (Mild): In this type, there is slight vaginal bleeding with irritable uterus. Maternal vitals are Stable.

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Fetal heart rate is normal. No coagulopathy.
Grades Of Placental Abruptio Based On Clinical And Laboratory Finding:

Grade 2 (Moderate): in this type there is mild to moderate vaginal bleeding with uterine contraction. Maternal tachycardia, postural hypotension, sign of fetal distress is also seen. Fibrinogen levels are decreased.

Grade 3(Severe): in this type, there is severe vaginal bleeding which may be concealed. The uterus is tetanic and painful. Patient is in shock and fetus is usually dead. Coagulopathy is often present.

Imaging: Though there has been good advancement in sonography machines, ultrasound has poor sensitivity in diagnosis of abruptio. Initially, the hemorrhage is seen as hyperechoic or isoechoic in comparison to the placenta, but as the hematoma starts resolving it becomes hypoechoic after a week and becomes sonolucent after two weeks.⁹

The accuracy of magnetic resonance imaging is much greater and should be performed in cases of antepartum bleeding with negative ultrasound, if the condition of patient allows.¹⁰

Differential Diagnosis: The differential diagnosis includes a variety of causes that present with abdominal pain with or without vaginal bleeding. Main differential diagnosis is from placenta previa and uterine rupture, as vaginal bleeding is the main presenting symptom. Other diagnoses where abdominal pain is the predominant feature, include broad ligament hematoma, hematoma of rectus abdominis, acute hydramnios and acute pyelonephritis.

Placenta Previa: The differentiating feature is that the placenta is stringy and not broken up by examining finger. Bleeding is usually bright and fresh. Ultrasound can help excluding low lying placenta.

Ruptured Uterus: it may stimulate concealed hemorrhage. Presence of proteinuria assists in diagnosis of placental abruptio.

Management: It depends on maternal and fetal condition, gestational age and cervical status. A quick assessment of general condition, vitals, fetal heart rate and the amount of bleeding is

done. Management of shock should be started as earliest possible. A blood sample is taken for blood grouping and crossmatching. Other tests required are haemoglobin estimation, platelet count, peripheral smear, coagulation profile, liver and renal function tests. Arrangement of adequate blood components are to be done. Ultrasound is to be done for the localisation of placenta.

The aim is to keep central venous pressure up to 10 cm H₂O. Urinary catheterisation is done and urine output is monitored. Urine is examined for protein as well as for quantity and specific gravity. As soon as the general condition of the patient improves, induction should be done by artificial rupture of membrane. Oxytocin can be used judiciously. A caesarean section is indicated in following conditions:^{10,11}

- Significant abruptio with live mature fetus
- Unstable maternal condition
- Uncontrolled haemorrhage
- Evidence of DIC
- Fetal distress
- Failure of progress of labour

In case of intrauterine demise, vaginal delivery is preferred; with caution to coagulation status of mother. Regional anaesthesia is preferred. Management of third stage of labour should be active and prevention of PPH should be done. Tocolytics should be used with caution as they lead to uterine relaxation and vasodilatation which may increase the bleeding and worsen the outcome.¹²

Aims And Objectives: To study maternal outcome in patients with abruptio placenta. To study perinatal outcome in patients with abruptio placenta

Material And Methods: This was a prospective observational study conducted from September 2019 to February 2020. 30 cases of abruptio placenta over a period of 6 months were included in the study. The antenatal women having vaginal bleeding other than abruptio placenta were also excluded from the study. Before recruiting the eligible patient in the study, informed consent was taken from the patient or patients relatives if patient was not in the position to give informed consent. Data was collected as regards to Age,

Parity, gestational age, Menstrual history, Obstetric history, history of bleeding per vagina, duration of bleeding, abdominal pain, loss of fetal movement, general examination and systemic examination was carried out. At the time of admission, proper history was taken and examination was done.

Complications occurring were taken into consideration. Regarding mode of delivery, caesarean section was done for obstetric indications, prostaglandins were used for cervical ripening in cases where the Bishop's score was low, oxytocin was used for acceleration of labour in cases where Bishop's score was good i.e. where cervix was favourable.

Results: Shown in following table and Graphs

Table 1: Distribution According To Age Group Of Patients (N=30)

Age Group(Year)	No. Of Patients
21-25	05(16.6%)
26-30	17(56.6%)
31-35	08(26.6%)
Total	30(100%)

Among all the 30 patients, maximum patients (56.6%) were from 26 – 30 year age group followed by 26.6% patients in 31 – 35 years age group.

Table 2: Distribution According To Parity Of Patients (N=30)

Parity	No. Of Patient
Primi gravida	4(13.33%)
Second gravida	19(63.33%)
Third gravida	07(23.33%)

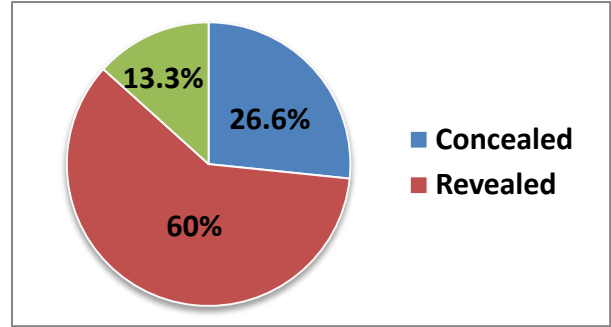
In present study, maximum patients 19(63.3%) were second gravida.

Table 3: Distribution According To Gestational Age Of Patients (N=30)

Gestational Age(Weeks)	No. Of Patients
28-32	07(23.33%)
33-36	17(56.66%)
37-40	06(20%)

In present study, maximum (56.6%) patients admitted were between 33 – 36 weeks of gestational age, followed by other 23.3% patients, who were between 28 – 32 weeks of gestational age.

Table 4: Distribution According To Type Of Bleeding (N=30)



In this study, 60% patients were having revealed type of bleeding, 26.6% patients were having concealed type and 13.3% patients were having missed type of bleeding.

Table 5: Distribution According To Grade (N=30)

Grade	No. Of Patients
1	10(33.3%)
2	16(52.3%)
3	04(13.3%)

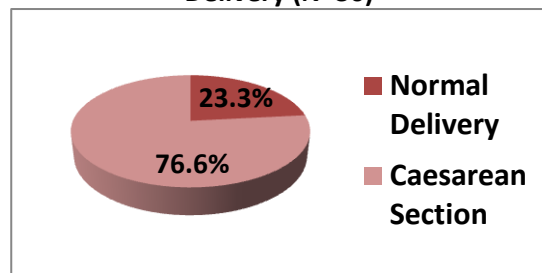
Out of all patients enrolled, 16(52.3%) patients were having grade 2, after that 10(33.3%) and 4(13.3%) patients were having grade 1 and 3, respectively.

Table 6: Distribution According To Time Interval From Onset Of Symptom To Delivery Of Baby

Time Interval(Hour)	No. Of Patients
<6 hrs	17(56.6%)
6-12hrs	10(33.3%)
>12hrs	03(10%)

In present study 17(56.6%) patients were delivered within 6 hours, 10(33.3%) patients delivered in 6 – 12 hour and 3(10%) patients were delivered after 12 hour of onset of symptom.

Table 7: Distribution According To Mode Of Delivery (N=30)



76.6% patients were delivered by caesarean section whereas 23.3% were delivered by normal vaginal delivery.

Table 8: Distribution According To Maternal Complication Associated With Abruption Placenta

Maternal Complication	No. Of Patients
Severe shock	7(23.3%)
DIC	2(6.6%)
Postpartum hemorrhage	11(36.6%)
Renal failure	1(3.3%)
Sepsis	1(3.3%)
Obstetric hysterectomy	0
Maternal mortality	0

Out of 30 patients in present study, 11(36.6%) developed postpartum hemorrhage, 7(23.3%) developed severe shock and 2(6.6%) developed DIC. Renal failure and sepsis occurred in only one patient each. In none of the patient obstetric hysterectomy was done. There was no maternal mortality.

Table 9: Distribution According To Perinatal Morbidity

Complication	No. Of patients
Sepsis	3(10%)
ARDS	5(16.6%)
Birth asphyxia	8(26.6%)
ICH	3(10%)
Necrotizing enterocolitis	4(13.3%)
stillbirth	4(13.3%)
Perinatal death	2(6.6%)

Among all patients delivered, 8(26.6%) babies had birth asphyxia, 5(16.6%) developed ARDS. Sepsis and ICH was seen in 3(10%) each whereas necrotizing enterocolitis and stillbirth was found in 4(13.3%). Perinatal death was found in 2(6.6%).

Discussion: In our study, maximum patients (56.6%) were from 26 – 30 year age group. 19(63.3%) were having second gravida. Maximum (56.6%) patients admitted were between 33 – 36 week gestational age, followed by 23.3% patients, who were between 28 – 32 week gestational age.

In another study done by Renuka et al¹³, abruption was found to be more common in age group of 20 – 25 years(64.86%), followed by 31 – 35 years (28.37%). Most of the patients were multiparous (83.10%). Highest incidence was found between 28-32 weeks of gestation (41.21%), followed by 32 – 36 weeks (35.85%). Similar results suggest that abruption is more

common with advanced age and higher parity of the patient.

In present study, 60% patients were having revealed type of bleeding, 26.6% patients were having concealed type and 13.3% patients were having mixed type of bleeding. Out of which 16(52.3%) patients were having grade 2, after that 10(33.3%) and 4(13.3%) patients were having grade 1 and 3, respectively.

When compared to Mohapatra et al¹⁴, most common type of abruption placenta was concealed type, constituting 47.86 % and revealed abruption was only 17.14 %. Majority of the cases had abruption of Grade 2 constituting 54.29%, which is similar to the present study.

Here, 17(56.6%) patients were delivered within 6 hours, 10(33.3%) patients delivered in 6 – 12 hour and 3(10%) patients were delivered after 12 hour of onset of symptom. 76.6% patients were delivered by caesarean section whereas 23.3% were delivered by normal vaginal delivery. In Renuka et al¹³, 57.43% patients were delivered within 6 hour, 29% in 6 – 12 hour and 13.5% were delivered after 12 hour. In 82.43% patients, normal vaginal delivery was done and 17.56% were delivered by caesarean section.

Out of 30 patients in present study, 11(36.6%) developed postpartum hemorrhage, 7(23.3%) developed severe shock and 2(6.6%) developed DIC. Renal failure and sepsis occurred in only one patient each. In none of the patient obstetric hysterectomy was done. There was no maternal mortality.

In another study done by Mukherjee et al¹⁵, 11.3% developed postpartum haemorrhage, 5.7% had severe shock and 22% patients developed DIC, 7.5% had renal failure, 4.7% had sepsis and 3.5% were mortality.

Among all patients delivered, 8(26.6%) babies had birth asphyxia, 5(16.6%) developed ARDS. Sepsis and ICH was seen in 3(10%) each whereas necrotizing enterocolitis and stillbirth was found in 4(13.3%). Perinatal death was found in 2(6.6%). In other study done by Borah et al¹⁶, 29.1% babies had birth asphyxia, 25.8% developed neonatal sepsis and 3.2% developed RDS. This suggests birth asphyxia, ARDS and neonatal sepsis are common complications.

Conclusion: Abruptio placenta is a serious and life threatening condition for mother and fetus. It is a challenge to best obstetrical and neonatal units. Health education and awareness among communities and regular ante-natal visit can help detecting the risk factors. Early intervention, expeditious delivery and well equipped centres will help to overcome the situation.

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