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**Dr. Aravind Rallapeta**

Assistant Professor, Department of  
OBG, Government Medical College,  
Srikakulam, Andhra Pradesh,  
India

**Dr. Sripriya Kancharana**

Assistant Professor, Department of  
OBG, Govt. Medical College,  
Srikakulam, Andhra Pradesh,  
India

**Dr. M Sulochana**

Assistant Professor, Department of  
OBG, Govt. Medical College,  
Srikakulam, Andhra Pradesh,  
India

**Corresponding Author:**

**Dr. Aravind Rallapeta**

Assistant Professor, Department of  
OBG, Government Medical College,  
Srikakulam, Andhra Pradesh,  
India

## Comparison of placenta previa and abruptio placenta and it's maternal and perinatal outcome

**Dr. Aravind Rallapeta, Dr. Sripriya Kancharana and Dr. M Sulochana**

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### Abstract

**Introduction:** One of the major causes of the perinatal mortality and morbidity is Antepartum hemorrhage with a prevalence of 0.5 to 5%. The major causes of antepartum hemorrhage are Abruptio placenta and Placenta previa. This study is to compare abruption placenta with placenta previa to establish their effects on perinatal mortality and morbidity.

**Study:** Prospective cohort study.

Time period: 01/02/2018 to 30/11/2019

**Method:** In this study, a total of 112 cases of antepartum hemorrhage were studied which may be due to either abruption placenta or placenta previa.

**Result:** A total of 154 pregnant women were admitted with APH. These 154 cases were admitted from 6700 deliveries conducted over a year. 112 patients out of 154 were accepted into the study as they fulfilled the inclusive criteria. There were 2 twin among these and total number of neonates delivered were 114. The incidence of abruption placenta and placenta previa in our study were Out of total 6693 deliveries a total 150 patients were admitted with APH. Perinatal mortality was observed in 31% of cases. Most common cause are maternal haemorrhage leading to fetal shock. The comparison between placenta previa and abruption and its maternal and perinatal outcome was studied.

**Conclusion:** Antepartum haemorrhage is the leading cause of maternal and perinatal morbidity and mortality. Placenta previa is more common cause of perinatal mortality and morbidity followed by antepartum hemorrhage. Placenta previa is commonly associated with multipara and patients having obstetrical surgical history, whereas abruption is commonly seen in patients with hypertensive disorders and primigavida. Abruptio placenta has more severe degree of haemorrhage and strongly associated with maternal and perinatal morbidity and mortality.

**Keywords:** Placenta previa, abruptio placenta, maternal and perinatal

### Introduction

Antepartum hemorrhage is one of the obstetrical emergencies which requires immediate management. It is one of the leading causes of the perinatal and maternal mortality and morbidity. Antepartum hemorrhage is defined as the bleeding per vagina beyond the period of variability which is 28wks in India and 20 wks in developed countries. Abruptio placenta and placenta previa are two major causes of antepartum hemorrhage. Maternal and perinatal complications in APH are malpresentation, postpartum hemorrhage, shock, blood transfusion, peripartum hysterectomy, preterm delivery.

Abruptio placenta is defined as the premature separation of normally located placenta and it complicates about 1% pregnancies. The abruption placenta is caused due to the rupture of blood vessels in the decidua basalis. This leads to the accumulation of blood which splits the decidua and continues till entire placenta gets separated. The most common factors causing abruption placenta are hypertensive disorders.

Placenta previa occurs when the placenta is inserted wholly or in part into the lower segment of the uterus. Uterine contractions or cervical changes apply shearing forces on placenta that leads to bleeding in placenta previa. It complicates about 0.31 to 0.60%. Maternal complications of APH are malpresentation, premature labour, postpartum hemorrhage, shock, retained placenta. It also includes higher rates of caesarean sections, peripartum hysterectomies, coagulation failure and even death. The fetal complications include premature delivery, low birth weight, intrauterine death, congenital malformations and birth asphyxia. The overall perinatal mortality increases to up to 4 to 6%.

This prospective study was conducted in the Department of Obstetrics and Gynaecology, Great

Eastern medical school and hospital Ragolu, Srikakulam and total 154 cases of APH were found out of which 112 cases fulfilled the inclusion criteria of comparison between placenta previa and abruptio placenta and included in this study at its maternal and perinatal outcome.

#### Inclusion criteria

- Cases with antepartum hemorrhage beyond 28 weeks with clinical findings and ultrasound reports confirming either placenta previa or abruption placenta.

#### Exclusion criteria

- Cases with antepartum hemorrhage below 28 weeks of gestation and patients suffering from any other bleeding disorders.

All the women with inclusion criteria were admitted in the hospital and relevant data is collected that includes maternal age, parity, gestational age, presentation, booking status, severity of hemorrhage. The diagnosis is done based on history, clinical findings and usg of all the cases. All facilities of neonatal care unit were also available in paediatrics to deal with any fetal emergencies.

#### Results

**Table 1:** Cause of APH

Type	Cause	Percentage
Abruptio placentae	35	31.2%
Placenta previa	77	68.5%
Total	112	100%

**Table 2:** Age distribution

Age (yrs.)	Age distribution (yrs.)	Abruptio placenta	Placenta previa
<20	3	1(25%)	2(75%)
20-25	37	16(43%)	22(59%)
26-30	48	8(16%)	40(83%)
31-35	18	8(44%)	10(55%)
>35	7	2(28%)	5(72%)

Antepartum hemorrhage is more commonly seen in age group of 20 to 30yrs. Placenta previa is more commonly seen in all age groups. The least age seen is 19yrs and the eldest age seen is 39 yrs.

**Table 3:** Gravida distribution

Gravida	No. of women	Abruptio placenta	Placenta previa
1	34	18(53%)	16(47%)
2	42	9(21%)	33(78%)
3	22	5(22%)	17(78%)
≥4	14	2(14%)	12(85%)

This table shows that 30% women with antepartum hemorrhage were primigravida and 70% were multigravida. 53% of primigravida women have abruption placenta. Multigravida is more associated with placenta previa which is 78%.

**Table 4:** Distribution with obstetric history

Previous history	No. of pregnancies	Abruptio placenta	Placenta previa
Abortion	20	4(20%)	16(80%)
Abortion and D & C	12	1(8%)	11(92%)
LSCS	15	3(20%)	12(80%)
Abortion, LSCS and D&C	2	1(50%)	1(50%)

Out of 20 pregnancies with abortion 80% were associated with placenta previa and 92% with history of d&c also have placenta

previa. So, placenta previa is more associated with multigravida and complications associated with abortion and D&C.

**Table 5:** Risk factors

Risk factor	No. of cases	Abruptio placenta	Placenta previa
Hypertension	23	17(73%)	6(27%)
Multiparity	7	1(14%)	6(86%)
Twins	5	3(60%)	2(40%)
Malpresentations	6	0	6(100%)
IUGR	4	2(50%)	2(50%)
Polyhydramnios	4	4(100%)	0
Hypothyroidism	5	3(60%)	2(40%)
Elderly	3	0	3(100%)
Triplet	1	1(100%)	0

This table shows that 73% women associated with hypertension have abruptio placenta and 86% associated with multiparity.

Malpresentations is commonly seen in placenta previa. Polyhydramnios is more associated with abruption placenta.

**Table 6:** Maternal complications

Maternal complications	No. of cases	Abruptio placenta	Placenta previa
Anemia	40	18(45%)	22(55%)
PPH	46	32(69%)	14(31%)
Shock, Anemia	4	2(50%)	2(50%)

Hellp	2	1(50%)	1(50%)
Anemia, Pyrexia	5	0	5(100%)
Shock, MI, Anemia	1	1(100%)	0
Shock, DIC, Pyrexia	1	1(100%)	0
Maternal death	0	0	0

The most common maternal complication seen is PPH followed by anemia. Anemia is strongly associated with placenta previa. PPH is more commonly seen in abruption placenta. Anemia with pyrexia is seen in placenta previa and shock, DIC, MI are more associated with abruption placenta.

**Table 7: Fetal outcomes**

Outcome	Total	Abruption	Placenta previa
Live	94	24(25%)	70(75%)
IUD	7	2(28%)	5(72%)
Still birth	6	3(50%)	3(50%)
expired in NICU	7	2(28%)	5(72%)

Total no. of deliveries conducted were 112. Out of 112 deliveries 114 neonates were delivered. In this, 94 were live births and 7 were IUD and 6 were still birth and 7 died in NICU. Total no of neonates expired were 20 which constitutes 18%. The most common cause of overall death of neonates were neonatal shock seen in about 80% of neonatal deaths. The no of deaths in NICU are 7 and 75% were dead due to fetal distress and in this 72% were due to placenta previa and 285 due to abruption.

### Discussion

The incidence of APH in our study is 1.67% in which abruptio placenta is 0.5% and placenta previa is 1.14%. Incidences of APH in study conducted by Bhide A *et al.* and Arora A *et al.* had similar incidences of 2.5% and 1.2% respectively. Adekanle DA *et al.* reported 1.5% incidence of antepartum haemorrhage.

In our study Placenta previa was the most common cause of APH ie 68.5% followed by abruptio placentae ie 31.2%. Our results were consistent with the study conducted by Maurya *et al.* with results showing placenta praevia 71% and abruptio placentae 27% and Adekanle DA *et al.* in which the placenta previa and abruptio placentae cases were 55.6%, 33.3% respectively. APH is seen in all the age groups and placenta previa is common in all the age groups.

In our study, the no of primigravida are 30% and the no of multigravidas are 70% and the placenta previa is strongly associated with multigravidas and abruption placenta is seen more in primigravida. This was consistent with the study conducted by Samal SK, *et al.*, which had 67%, 33% incidence of APH in multigravida and primigravida which is also consistent with the study conducted by Singhal S *et al.* who found 63.01% patients in their study to be multigravida and 26.99% primigravida. Maurya A, *et al.* Reported high incidence ie 82.1% in multigravida.

In our study, out of 20 pregnancies with abortion 80% were associated with placenta previa and 92% with history of D & C also have placenta previa. So, placenta previa is more associated with multigravida and complications associated with abortion and D & C.

73% women associated with hypertension have abruptio placenta and 86% associated with multiparity. Malpresentations is commonly seen in placenta previa. Polyhydramnios is more associated with abruption placenta. The most common complication PPH which is 41.7% followed by anemia which is 35.7%. Abruptio placenta has a strong association with

complications of shock, anemia, DIC, MI. Our findings were consistent with Kalam F *et al.* which had incidences of anemia at 38%, PPH 38%, shock 22% and DIC 2%. Similar incidences were found in studies conducted by Sharmila G *et al.* Which had 62% anemia, 10% shock, 22% PPH, 2% DIC.

Total no. of deliveries conducted were 112. Out of 112 deliveries 114 neonates were delivered. In this, 94 were live births and 7 were IUD and 6 were still birth and 7 died in NICU. Total no of neonates expired were 20 which constitutes 18%. The most common cause of overall death of neonates were neonatal shock seen in about 80% of neonatal deaths. The no of deaths in NICU are 7 and 75% were dead due to fetal distress and in this 72% were due to placenta previa and 28% due to abruption. On comparison to studies conducted by Taylor F *et al.* and Bhandiwad A *et al.* fetal distress was reported 69% and 47.8% of the cases. There are no maternal deaths in our study as there is early diagnosis and treatment.

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### Author's Contribution

Not available

### Conflict of Interest

Not available

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Not available

### Conclusion

Antepartum haemorrhage is the leading cause of maternal and perinatal morbidity and mortality. Placenta previa is more common cause of perinatal mortality and morbidity followed by antepartum hemorrhage. Placenta previa is commonly associated with multipara and patients having obstetrical surgical history and PPH is more commonly associated with placenta previa, whereas abruption is commonly seen in patients with hypertensive disorders and primigravida and anemia, shock, DIC, MI. Abruptio placenta has more severe degree of haemorrhage and strongly associated with maternal and perinatal morbidity and mortality.

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