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# A prospective observational study of maternal and fetal outcome in antepartum haemorrhage (>28 Weeks)

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**Conflicts of Interest:** Nil

## Abstract

**Introduction:** Antepartum haemorrhage has always been one of the most feared complications in obstetrics. Antepartum haemorrhage is still a grave obstetrical emergency contributing to a significant amount of maternal and perinatal morbidity in our country.

**Aim:** To study the maternal and fetal outcome in antepartum haemorrhage.

**Material and methods:** A prospective observational study was carried outon100 ante natal cases presenting with bleeding per vaginum with gestational age > 28 weeks in the Department of Obstetrics & Gynaecology, SMS Medical College, Jaipur. Maternal and fetal outcome were studied for need for blood products trans fusion in the mother, mode of delivery, fetal distress, APGAR at 1 & 5 min, NICU admission, neonatal and maternal morbidity & mortality.

**Results:** In our study, the prevalence of APH was 3.5% out of which 1.7% of patients had placenta praevia and 1.8% had abruptio placentae. Majority (52%) of the patients were in the age group of 18-25 years. 66% of patients were unbooked cases. 97.8% of cases in the placenta praevia group were diagnosed by USG while in abruptio placentae group, majority (67.9%) were diagnosed clinically. 13.2% of stillbirths are reported

from abruptio placentae group as compared to 2.1% of stillbirths from placenta praevia group.

**Conclusion**: Awareness of pregnant mothers about the importance of regular antenatal care and easy accessi bility to quality antenatal services would go a long way in bringing down the maternal and perinatal morbidity and mortality related with APH. Intensive family planning programs helps in decreasing cases of APH in relation with age and parity. Efforts should be made to reduce the rate of unnecessary abortion, septic abortions, operative deliveries, because there is greater likelihood of placenta previa in scarred uterus. From present study it can be concluded that APH is still a leading cause of maternal morbidity and mortality in our country.

**Keywords**: antepartum hemorrhage, placenta previa, abruptio placenta, perinatal mortality

## Introduction

APH complicates around 2-5% of all the pregnancies[1]. The incidence of placenta previa (PP) approximate about 0.33% to 0.55% and incidence of abruptio placenta (AP) around 0.5% to 1%[2]. The maternal complications in patients with APH are mal presentation, premature labour, post-partum haemorrhage (PPH), sepsis, shock and retained placenta[3]. Various fetal complications are preterm baby, low birth weight, intrauterine death, congenital malformations and birth asphyxia (4). In developing countries, widespread pre-existing anaemia, difficulties with transport, restricted medical facilities, decreased awareness on part of patients are responsible for high MMR. Although APH cannot be prevented but maternal and perinatal morbidity and mortality associated with APH can be reduced by aggressive expectant management.

Presently increase in use of ultrasound for placental localization and to diagnose abruptio placenta, improved obstetrical and anesthetic facilities, increase in use of blood and its products to correct anaemia and advanced neonatal care facilities to make increased chances of survival of a preterm infant, all totally have played an important role in decreasing perinatal as well as maternal morbidity and mortality[5]. In day-to-day practice, an obstetrician has to tackle life threatening conditions of APH and take a timely judicious decision of terminating pregnancy, keeping in mind the welfare of both mother and fetus without exposing both of them to undue risk.

## Aims & objectives

- To study the maternal and fetal outcome in ante par tum haemorrhage.
- To study associated risk factors contributing to maternal and fetal morbidity and mortality.

## Material & methods

A prospective observational study was carried out on 100 antenatal cases presenting with bleeding per vaginum (antepartum haemorrhage) with gestational age>28 weeks in the Department of Obstetrics & Gynaecology, SMS Medical College, Jaipur.

All cases fulfilling the inclusion & exclusion criteria were included in the study. Informed consent of the patient was taken prior to study and ethical committed approval was taken. Detailed history of the patient regarding age, address, socio-economic status, history regarding her previous antenatal check-ups, any other risk factors predisposing to abruptio placentae and placenta praevia was obtained. General physical examination was done to assess both maternal and fetal condition.

Abdominal examination, per speculumandper vaginal examination (when required) was done. The gestational age of the patient was confirmed with her date and first trimester ultra sono graphy.

**Routine investigations**

- Complete blood count, ABORh, HIV, HBsAg, VDRL, liver and renal functions tests, PT with INR, random blood sugar and ultrasound were done.
- Maternal and fetal outcome was studied for need for blood products trans fusion in the mother, mode of delivery, fetal distress, APGAR at 1 &5 min, NICU admission, neonatal and maternal morbidity & mortality.

**Inclusion criteria**

- Singleton viable pregnancy with gestational age >28 weeks with bleeding per vaginum (APH).

**Exclusion criteria**

Local causes of bleeding per vaginum.

**Results**

This study includes 100 cases out of 1372 patients which presented with APH during May 2021 and April 2022.Total number of ANC admitted during this period was 37,451. In our study, prevalence of APH was 3.5% out of which 1.7% had placenta praevia and 1.8% had abruptio placentae. Out of 100 cases in study, 53 cases were diagnosed as abruptio placentae and 47 cases had placenta praevia (Table 1).

Table 2 shows the Demographic distributions. Table shows that majority of the patients (66%) were unbooked cases. APH is more common in the age group of 18-25 years (52%) which is common reproductive age. Incidence is more common in multigravida (66%). Cases with placenta praevia presented commonly at term (43%) while majority of the cases in the abruptio placentae presented before term (88%).

Table 3 shows the associated obstetric condition. In present study, 18.8% patients with abruptio placentae and 78.7% patients with placenta praevia had abnormal presentation. Most of the patients (67%) were anaemic at the time of admission. Among patients with placenta praevia, history of previous abortion and previous LSCS was seen in 17.02% and 48.9% respectively while in abruptio placentae, history of previous abortion and LSCS was present in only 7.5% and 9% respectively. 56.6% of patients with abruptio placentae had HDP & related disorders.

Table 4 shows maternal morbidity in terms of com plications and management of APH. Majority of the patients with placenta praevia (97.8%) were diagnosed using USG while in abruptio placentae, 67.9% patients were diagnosed clinically. In abruptio placentae, the rate of caesarean section was 37.7% while in placenta praevia, it was 97.8%. 6 patients underwent obstetric hysterectomy. There was 1 case of maternal mortality noted in abruptio placentae. DIC& PPH was noted in 8% & 12% patients respectively.

Table 5 shows the perinatal outcome wherein the perinatal mortality of abruptio placentae was 25.5% while in placenta praevia, it was 2.1%. Table 8 shows the neonatal morbidity where in the most common complication was jaundice followed by RDS which was seen in 12 and 5 patients respectively.

**Discussion**

In the present study incidence of various causes of APH was noted. The causes were determined clinically in antenatal period and during the delivery. In present study, the incidence of APH is 3.5% which is comparable to study by Kavitaet al[6] (2.9%). In the study Kwawukume, the incidence of APH was found to be 1.2-1.8%[7]. Incidence of abruption placentae was 1.8%, PP was 1.7%.

To study the effect of antenatal care on maternal and fetal outcome in Abruptio placentae, patients were divided into booked and unbooked. . In present study 34% patients are booked as compared to 66% patients

who are unbooked which is comparable to study by Kedaret al where in unregistered cases were 63. 18.. This study shows that APH was more prevalent among the unbooked patients. This depicts the importance of antenatal care. The low rate of registry for ANCs in these patients may be because of low socioeconomic status and lack of awareness resulting in complications like pre-eclampsia. In the present study mean age of patients of APH was 18-25. Early marriage and repeated pregnancies at short intervals may be responsible for this. Mouryaetal[9]and Bhandiwadet al[10] have also reported maximum number of cases in the same age group.

In the present study it was observed that the incidence of APH was more common in multipara (64%) than in nullipara. The incidence of PP was 2 times higher in multipara than primipara. Swetha Gulabi Gaddam al[11] reported that prevalence of APH was higher among multigravidas.

Malpresentation was more common among placenta praevia (78.7%) as compared to patients with abruptio placentae in present study, Kavita et al[12] found abnormal presentation to be in 22.8% in placenta praevia and 25% in abruptio placentae. Anaemia was found in 67% patients in present study, in contrast Sarwaret al[13] reported high incidence 96.2% and Bhandi[14]reported very low incidence 35%. Many patients needed blood and blood products transfusion to correct anaemia, on-going blood loss and to correct DIC. Among abruptio-placenta patients, 75.4% patients needed blood transfusion. Among placenta praevia patients, 68.08% patients needed transfusion.

The present study showed that among cases of placenta praevia, 48.9% cases had history of previous LSCS, 23.5% cases had history of abortions, which is statistically significant compared to abruption placenta where only 9 cases had history of previous LSCS and abortions. Hibbard et al[15]reported an increased incidence of AP in woman with h/o of previous abortion.

In present study 40% patients with APH had associated risk factors. 23% of patient with APH presented with severe pre-eclampsia, 12% with gestational hyper tension. Rai et al found (18) 4.4% incidence of hyper tensive disorders of pregnancy in APH patients.

In our present study, 82% cases of APH in our study were delivered by caesarean section. This was com parable to study by Chakra borthy et al 53(1993) and Bako et al (2012)[19] where the percentage of caesarean section was 82% and 86%. Early and timely caesarean section improve perinatal salvage in patients with APH.

One maternal death (1%) occurred in present study. Gorodeskiet al[20] reported maternal mortality of 0.46% in APH while Pedowitz et al[10] reported it as 0.9%. Cotton et al[13] found no mortality in cases of PP in their study.

One of the major aspects of this study was to study the perinatal outcome in various groups of APH. In present study, 92% of patients had live births, 8% stillbirths and 6% had neonatal deaths. In Jaju KG et al[21], 45.5% stillbirths and 4.5% neonatal deaths were recorded.

In 1989 Barron[22]stated that perinatal mortality is increased by any kind of bleeding in pregnancy but is highest following abruptio placentae.

**Conclusion**

Awareness of pregnant mothers about the importance of regular antenatal care and easy accessibility to quality antenatal services would go a long way in bringing down the maternal and perinatal morbidity and mortality related with APH. Intensive family planning programs helps in decreasing cases of APH in relation with age and parity. Efforts should be made to reduce the rate of

un necessary abortion, septic abortions, operative de liveries, because there is greater likelihood of placenta previa in scarred uterus. From present study it can be concluded that APH is still a leading cause of maternal morbidity and mortality in our country.

**Ethical standards**

All procedures performed in studies involving human participants were in accordance with ethical standards of international committee and with the Helsinki Declaration of 1964 and its later amendments or comparable ethical standards. This article does not contain any studies with animals performed by any of the authors.

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**Legend Tables**

Table 1: Prevalence of APH (Total ANC = 38823)

| Type of APH | Frequency | Percentage |
|---|---|---|
| Placenta Previa | 678 | 1.7% |
| Abruptio Placentae | 694 | 1.8% |
| Total | 1,372 | 3.5% |

Table 2: Demographic Distribution

| Age wise Distribution of the Study Group (Age in years) | | |
|---|---|---|
| | Frequency | Percentage |
| 18-25 Years | 52 | 52% |
| 26-30 Years | 38 | 38% |
| 31-35 Years | 7 | 7.0% |
| >35 Years | 3 | 3.0% |
| Booking Status of the Patients in the Study Group | | |
| | Frequency | Percentage |
| Booked | 34 | 34 |
| Unbooked | 66 | 66 |

| Obstetrical Code of the Patients | | | |
|---|---|---|---|
| | Type of APH | | |
| | AP | PP | Total |
| Primigravida | 21 (39.6%) | 13 (27.7%) | 34 (34.0%) |
| Multigravida | 32 (60.4%) | 34 (72.3%) | 66 (66.0%) |
| Gestational age of the patients | | | |
| Gestational Age (Weeks) | Type of APH | | |
| | AP | PP | Total |
| 28-30 | 10 (18.9%) | 1 (2.1%) | 11 (11.0%) |
| 31-32 | 7 (13.2%) | 1 (2.1%) | 8 (8.0%) |
| 33-34 | 12 (22.6%) | 7 (14.9%) | 19 (19.0%) |
| 35-36 | 12 (22.6%) | 7 (14.9%) | 19 (19.0%) |
| 37-38 | 10 (18.9%) | 29 (61.7%) | 39 (39.0%) |
| >38 | 2 (3.8%) | 2 (4.3%) | 4 (4.0%) |
| Diagnosis of APH | | | |
| Type of APH | AP | PP | Total |
| USG | 17 (27.0%) | 46(97.3%) | 63(63%) |
| Clinical | 36 (73.0%) | 1 (2.7%) | 37(37%) |

Table 3: Associated obstetric conditions

| | Placenta Praevia | Abruptio placentae | Total |
|---|---|---|---|
| Malpresentation | 37(78.7%) | 10(18.8%) | 47 |
| Anaemia | 26(55.3%) | 41(78.4%) | 67 |
| Previous abortion | 12(25.5%) | 2(3.7%) | 14 |
| Previous CS | 23(48.9%) | 5(9.4%) | 28 |
| HDP & related disorders | 2(4.2%) | 33(62.2%) | 35 |

Table 4: Maternal morbidity in terms of complications

| | Placenta praevia | Abruptio placentae | Total |
|---|---|---|---|
| Caesarean delivery | 46(97.8%) | 20(37.7%) | 66 |
| Obstetric hysterectomy | 1(1.8%) | 5(10.6%) | 6 |

| | | | |
|---|---|---|---|
| >4 units blood transfusion | 17(36.17%) | 33(62.2%) | 50 |
| PPH | 3(5.7%) | 9(19.1%) | 12 |
| DIC | 0(0%) | 12(22.6%) | 12 |
| Acute renal failure | 0(0%) | 2(3.7%) | 2 |
| Maternal death | 0(0%) | 1(1.8%) | 1 |

Table 5: Perinatal outcome in APH

| Perinatal outcome | Type of APH | | |
|---|---|---|---|
| | PP | AP | Total |
| Alive | 46(97.9%) | 46 (86.8%) | 92 |
| Still Birth | 1 (2.1%) | 7(13.2%) | 8 |
| Preterm | 13(27.7%) | 37(69.8%) | 50 |
| Low birth weight | 15(31.9%) | 39(73.6%) | 54 |
| Neonatal mortality | 0(0%) | 6(15.1%) | 6 |
| Neonatal Morbidity | | | |
| | PP | AP | Total |
| HIE Stage III | 1(2.2%) | 2(5.1%) | 3 |
| Refractory Shock | 0(0%) | 3(7.7%) | 3 |
| Septicemia | 1(2.2%) | 3(7.7%) | 4 |
| RDS | 1(2.2%) | 5(12.8%) | 6 |
| Hypoglycemia | 1(2.2%) | 0(0%) | 1 |
| Jaundice | 3(6.7%) | 6(15.4%) | 9 |