

## Original Research

# A Prospective Observation Study of Feto-Maternal Outcome in Antepartum Hemorrhage

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### ABSTRACT

**Background:** Antepartum hemorrhage (APH) refers to bleeding that occurs after 20 weeks of gestation but before the onset of labor. APH is a feared complication in obstetrics.

**Aim:** This study aimed to determine the maternal and fetal complications in patients with APH.

**Materials & methods:** After obtaining permission from the Institutional Ethics Committee, the study was initiated. The study period was November 2018 to November 2020. This was a prospective, observational study. The cases were selected from patients admitted to the labor room of VIMSAR, Burla, with complaints of bleeding per vaginal (PV) after 28 weeks of gestation and before delivery. A total of 120 patients were included in this study.

**Results:** 75% cases were in 21 -30 age group. 65% cases were multigravida mostly second and third gravida (55%). 100 % of abruption placentae were painful while 16% of placenta previa were painful. 26% of APH had a previous caesarean section. 39 % of placenta previa had history of previous caesarean section and 9% had curettage history. 71.7% of APH underwent emergency caesarean section and 28.3% underwent VD. 100 % of cases of placenta previa underwent lower-section-caesarean-section while 42 % of abruptio placentae underwent lower-section-caesarean-section.

**Conclusion:** APH is a high-risk pregnancy requiring emergency care. It is associated with maternal and perinatal morbidities and mortality. Vaginal examination and sexual intercourse should be avoided when placenta previa is diagnosed. Therefore, a multidisciplinary approach is necessary.

**Keywords:** Antepartum hemorrhage; Postpartum Hemorrhage; Abruptio-placenta; Maternal complications; Per-vaginal.

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### INTRODUCTION

Antepartum hemorrhage (APH) refers to bleeding that occurs after 20 weeks of gestation but before the onset of labor. APH is a feared complication in obstetrics. APH is defined as bleeding from or into the genital tract after 28 weeks of gestation until delivery to the fetus[1]. APH remains a grave obstetric emergency that contributes to significant maternal and perinatal morbidity and mortality in our country. Hemorrhage is a direct cause of maternal death in approximately 30% of the cases[2]. APH complicates approximately 2-5% of all pregnancies,

with an incidence of placenta previa (PP) of approximately 0.33%–0.55% and an incidence of abruptio-placenta (AP) of approximately 0.5%–1%[3]. Maternal complications in patients with APH include malpresentation, premature labor, postpartum hemorrhage (PPH), sepsis, shock, and retained placenta. Various fetal complications include preterm birth, low birth weight, intrauterine death, congenital malformation, and birth asphyxia [4]. In developing countries, widespread pre-existing anemia, difficulties with transport, restricted medical

facilities, and decreased awareness of some patients are responsible for the high MMR. The causes of APH include placenta previa, placental abortion, vasaprevia, local causes of the vulva vagina cervix, and unclassified causes. The most radical changes in obstetrics in the last century were in the management of APH, which has greatly reduced maternal and perinatal mortality. Radical changes were brought about in the management of APH by MacAfee (1945) and Johansson's (1960) regimen [5-7]. With the introduction of MacAfee, expectant management of APH due to placenta previa has changed dramatically [5-7].

While expectant management of MacAfee is undertaken to gain maturity, the fetus remains continuously at risk and can be a likely cause of subsequent maternal hemorrhage [5-7]. Presently, the use of ultrasound for placental localization and diagnosis of placental abruption, improved obstetrical and anesthetic facilities, increased use of blood and its products to correct anemia, and advanced neonatal care facilities increase the chance of survival of preterm infants. In day-to-day practice, an obstetrician must make judicious decisions for the termination of pregnancy, keeping in mind the welfare of both the mother and fetus without exposing either of them to undue risk. Hence, this study aimed to determine maternal and fetal complications in patients with APH.

#### **MATERIALS & METHODS:**

After obtaining permission from the Institutional Ethics Committee, the study was initiated. The study period was November 2018 to November 2020. This was a prospective, observational study. The cases were selected from patients admitted to the labor room of VIMSAR, Burla, with complaints of bleeding per vaginal (PV) after 28 weeks of gestation and before delivery. A total of 120 patients were included in this study. The patients were followed up until discharge of mothers and babies from the hospital. The inclusion criteria were gestational singleton pregnancy after 28-week gestation and before the delivery of a baby with bleeding PV. The exclusion criteria were bleeding disorders, multiple pregnancies, and comorbidities such as TB, DM, and HTN.

Detailed history taking and clinical examinations were performed. Patient age, gestational age, parity, previous mode of delivery, socioeconomic status, and fetal heart rate were recorded. Laboratory investigations included a urinary pregnancy test, a complete blood count, sickling, and HPLC. Liver function test, renal function test, serum sodium, potassium, calcium, magnesium, FBS/RBS, PT, APTT, PTINR, thyroid function test, and ultrasonography.

After delivery of baby APGAR score after 1 min was noted and resuscitation was done. Further Apgar score after 5 min was noted. The babies were examined in detail, the baby with weight less than 2000gm, Apgar score  $\leq 7$  was referred to SNCU. Babies were followed up to discharge of mother. With the help of a neonatologist, the babies were examined. Asphyxia, convulsion, jaundice, anemia in babies were found out. Cases of perinatal death were recorded.

#### **Statistical Analysis:**

All data were analyzed by SPSS software Excel and results were assessed in term of percentages, proportions, and chi-square test.

#### **RESULTS & DISCUSSION:**

Bleeding PV during any trimester is a threat to pregnancy outcome. Therefore, special attention must be paid to this issue. In the present study, we attempted has been made to determine the effect of bleeding after 28 weeks of gestation on the outcome of pregnancy until discharge.

During this study period 16875 patients were delivered to the labor room of VIMSAR, Burla. Of these, 120 were admitted as antepartum hemorrhage, which was approximately 0.7% of the total amount of delivery. Of the 120 cases, 43 were due to abruptio placentae (0.2%), 67 were due to placenta previa (0.4%), and 10 were unclassified (0.06%).

In the present study, the incidence of APH was 0.7%. This finding was in accordance with a study conducted by [8] in 2015, in which the incidence was 0.8%. In a study conducted by [9], the incidence of APH was found to be 1.2-1.8% while a study [10] reported the lowest incidence of APH of 0.2%.

In our study, the incidence of placenta previa was 0.4%, that of abruptio placentae was 0.2%, and that of undetermined placentae was 0.006%. In our study, the majority of APH cases were due to placenta previa (56%), which was comparable with the study by Singhalet *al.* (52.64%) but less comparable to the study by [8] (40.4%). In addition, in that study [8], APH due to abruptio placentae was 36 %, comparable to study (38.6%), and undetermined causes were 8%, which was significantly less comparable with study by [11] reported 17.7% and 21% [8].

In our study, the incidence of APH in the age groups of 21–25 years was 45%, 26–30 age group was 30%, > 30 years was 15.8%, and < 20 years was 9.2%. This is like the Indian study conducted by [12] in 2017 involving 100 cases of antepartum hemorrhage, where the maximum number of cases was less than 25 years. Studies by [13,14] found that most APH patients were age group–26-30 years in APH patient.

In our study, the incidence of APH was higher in multigravidas (65%) than in primigravids (35%). This is in accordance with study done by [15], where incidence of APH in multigravidas and primigravids was 72 % and 28%, respectively [9]. Another study involving 100 cases reported that the maximum number of APH cases in multigravida was 88% [16].

In our study, the incidence of APH was higher in patients with a low education status. Out of 120 cases, 72 patients had an education below the 10<sup>th</sup> class (60%). In our study onset of bleeding before 37 weeks was 54%, bleeding after 37 weeks was 46 %, and between 33 weeks and 36 weeks of gestation was 37.5%; this is in accordance with study done where mean gestational age at delivery was  $35.22 \pm 2.82$  weeks [17]. According to a previous study [18], one-third of the patients had a first episode of bleeding below 30 weeks of gestation, one-third from 30 to 35 weeks, and third at 36 weeks.

Painful bleeding occurred in all cases of abruptio placentae, while 11 out of 67 cases (16%) of placenta previa were painful and 56 cases (84%) were painless. Eighty% of the unclassified cases were painful, and 20 % were painless. In the previous mode of delivery in APH patients and distribution of cases according to previous mode of delivery in different types of APH, out of 120 cases, 34 (28%) had normal vaginal delivery, 31 (26%) had a history of previous LSCS, 13 (11%) had a history of curettage, and 42 were primi.

A previous history of caesarean section appears to be associated with APH, according to a study by [19], which was 32.4% and 12% according to a study by [16]. The findings of these studies are consistent with those of the present study.

Of the 43 cases of abruptio placentae, 5 had prior LSCS (12%), 5 had prior curettage (12%), 17 had VD (39%), and 16 were primi (37%). Of the 67 patients with placenta previa, 26 (39%) had prior LSCS, 6 (9%) had prior curettage, and 12 (18%) primi (34%). It is less comparable with the study by [16], where placenta previa following curettage was 12.12% and following caesarean section was 18.18%. Tuzovic *et al.* [20] reported that the percentage of previous abortions was significantly higher among women with placenta previa, yielding a risk of 2.75.

Of the 120 patients, 86 (71.7%) underwent a caesarean section. This is consistent with study done by [21], in which 63.7% of patients with APH underwent caesarean section, while a study [22] reported a caesarean rate of 52 %.

In the present study, 34 patients had normal vaginal delivery (28.3%) and 7 cases had caesarean section

followed by hysterectomy (6%). This is nearly like Tyagiet *al* where hysterectomy rate was 3.5% [23].

All patients with placenta previa underwent caesarean section (100%), of whom seven underwent hysterectomy. Of the seven hysterectomy cases 5 cases had adherent placenta, 1 case had PPH, and one had a ruptured uterus. In a study of antepartum hemorrhage by Maurya *et al.* in 2014, 92% of placenta previa cases were delivered by caesarean section [24].

Of the 43 cases of abruptio placentae, 25 (58%) underwent vaginal delivery, and 18 (42%) underwent caesarean section. This is comparable to the study done by Bakoet *al.*, in which 63.3% of patients with abruptio had vaginal deliveries [21]. In addition, in a study conducted by [25], 73% of the patients had vaginal delivery.

#### CONCLUSION:

APH is a high-risk pregnancy requiring emergency care. It is associated with maternal and perinatal morbidities and mortality. Vaginal examination and sexual intercourse should be avoided when placenta previa is diagnosed. Therefore, a multidisciplinary approach is necessary. If the mother bleeds after a period of viability, it should be delivered by caesarean section in the presence of a neonatologist. Ultrasound is used for the diagnosis of placenta previa but not specifically for abruptio. An abruptio placenta was clinically diagnosed. All mothers should be educated enough to understand the importance of regular antenatal check-ups, alarming signs, and symptoms of APH and ultrasonography in the localization of placenta, so that dreadful placenta previa cases can be diagnosed and delivered by elective caesarean section.

**Conflict of Interest:** The authors declare that they have no conflicts of interest.

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