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Original Research Article

Maternal and perinatal outcome in antepartum hemorrhage

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ABSTRACT

Background: Antepartum hemorrhage (APH) is defined as bleeding from or into the genital tract, occurring from 24+0 weeks of gestation and prior to delivery. Placenta previa (PP) and abruptio placenta (AP) constitute the two main causes of APH. The condition is associated with severe maternal and perinatal morbidity and mortality. The incidence has been on the rise due to increased incidence of operations in the current era. The objectives of the study are to determine the proportion, to assess the feto maternal outcome of APH and the risk factors associated with the maternal and fetal morbidity and mortality.
Methods: A prospective observational study conducted in the department of obstetrics and gynecology at Gandhi hospital from January 2021 to June 2022. All the women with complaints of bleeding per vaginum were included in the study after obtaining consent. The feto maternal outcome was monitored and noted down and statistical analysis was done.
Results: The 100 antenatal women with bleeding per vaginum were included in the study. The results showed that majority of APH cases were among multigravida in the age group of 21-25 years. and in the gestational age of 36-38 weeks. Hypertensive disorder of pregnancy was the most common risk factor identified for abruption. LSCS was the most common mode of termination of pregnancy and postpartum hemorrhage (PPH) is the most common complication encountered. There were 3 maternal deaths.
Conclusions: APH is still a leading cause of maternal morbidity and mortality in our country. Awareness of pregnant women about the importance of regular antenatal checkups and easy accessibility to antenatal services go a long way in bringing down the maternal and perinatal morbidity and mortality related with APH.

Keywords: APH, PP, Abruption, Maternal mortality

INTRODUCTION

Antepartum hemorrhage (APH) is defined as bleeding from the genital tract in the second half of pregnancy. It complicates 2- 5% of all pregnancies.[1] Hemorrhage is the major cause of severe maternal morbidity in almost all 'near miss' audits in both developed and developing countries. Hemorrhage was a direct cause of maternal death in about 22-25% of cases.[1] The incidence of PP is about 0.33% to 0.55% and incidence of AP about 0.5-1%.[1] Up to one-fifth of all preterm babies are born in association with APH, and the known association of APH with cerebral palsy can be explained by prematurity.[1]

Major causes of APH include PP and AP. In PP, placenta is implanted wholly or partly into the lower segment of the uterus. An AP is the condition where bleeding occurs due to premature separation of a normally sited placenta.[2] Other causes of APH include vasa previa, marginal vein bleeding, trauma due to foreign body or genital lacerations and cervical polyp, cervical carcinoma, local lesions of vagina and cervix. Systemic diseases like leukemia and bleeding disorders are rare causes of APH.[2]

The maternal complications in patients with APH are malpresentations, premature labor, PPH, sepsis, shock and retained placenta.[3] All these contribute to increased maternal morbidity and mortality rates. Various fetal complications are preterm baby, low birth weight, intrauterine death, congenital malformation and birth asphyxia.

Aim and objectives

Aim and objectives were to determine the proportion of APH at Gandhi medical college/hospital, to assess the maternal and fetal outcome in APH and to determine the risk factors contributing to maternal and fetal morbidity and mortality.

METHODS

This is a prospective observational study carried out at Gandhi hospital, Secunderabad from January 1st 2021 to 30th June 2022. 100 women who came with bleeding P/V after the period of viability were taken into the study. Informed consent was obtained from the patient and family members. On admission, detailed history of the patient regarding age, address, socio-economic status, history regarding her previous antenatal check-ups were obtained.

Inclusion criteria

All cases of APH with gestational age >28 weeks were included.

Exclusion criteria

Patient suffering from any other bleeding disorder and bleeding due to local causes were excluded.

General physical examination was done to assess both maternal and fetal condition. Abdominal examination, per speculum and per vaginal examination (when required) was done. The gestational age of the patient was confirmed with her dates, first trimester ultrasound and a basic obstetric ultrasound was performed to confirm the fetal growth parameters, placental position and amniotic fluid index. All patients presenting with APH were initially investigated and subsequent management was done according to the suspected cause, severity and type of bleeding and the gestational age of the pregnancy.

The details in terms of maternal and fetal outcome-type of APH, mode of delivery, blood transfusion (if any), duration of stay at hospital, associated risk factors, maternal complications, fetal outcome-dead/ alive, APGAR score, birth weight was noted and tabulated.

The sample size was calculated based on the incidence of APH in the previous year. All the data was analysed using SPSS version 22. Between-group comparisons utilized two sample t tests and one way analysis of variance.

RESULTS

Majority of the patients are in the age group of 21-25 years (41%) followed by 26-30 years (40%). In this study, 68% patients presented with APH were illiterate while 32% were literate. The study shows incidence of APH is more common in multigravida (70%) compared to primigravida (30%). Abruption cases were 67%, PP 32% and vasa previa 1%.

Most of the patients were unbooked (59%) whereas 41% patients had previous antenatal checkups. The study depicts that most of the patients presented at 36-38 weeks of gestation (37%) followed by at 34-36 weeks of gestation (23%) (Figure 1).

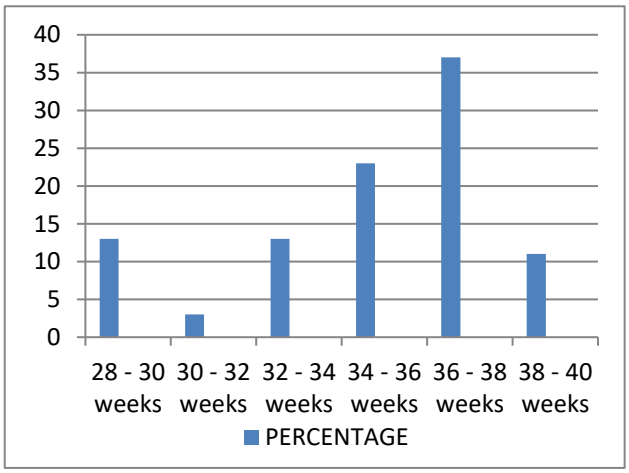

Figure 1: Distribution of cases according to gestational age in weeks.

The study shows that most patients presented with type 4 (46.9%) and type 3 (31.3%) Placenta previa (Figure 2).

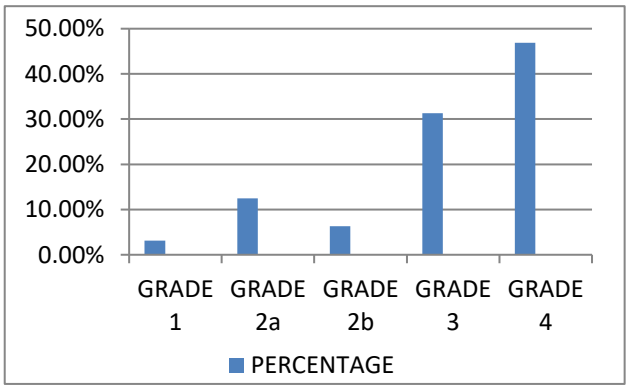

Figure 2: Types of PP.

The study shows that out of 100 cases, 73 had cephalic presentations, 18 had breech presentations. PP patients had more incidences of malpresentations than AP.

The study shows that among the multigravida (64%), 39% cases had previous history of LSCS and 25% had previous vaginal births.

The study shows that 62 cases had associated risk factors, the most common being hypertensive disorders (32) which include gestational hypertension, preeclampsia, imminent eclampsia, and HELLP syndrome. The 26% cases had history of anemia. Other associated risk factors include hypothyroidism, gestational diabetes mellitus and polyhydramnios (Figure 3).

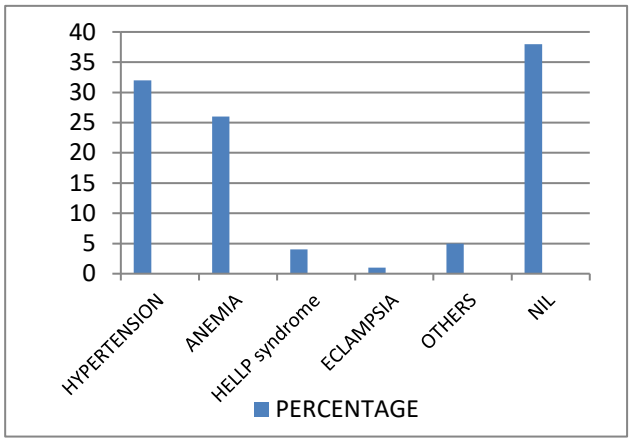

Figure 3: Associated risk factors among the cases.

A comparative study of hypertensive disorders and anemia as a most common risk factor among PP study group and AP study group was done. Among abruption group 31 cases (46.27%) presented with hypertensive disorders and 53.73% cases were non hypertensive, whereas in PP group, 1 case (3.1%) present with hypertensive disorder and (96.88%) were non hypertensive. P<0.001 which is significant, depicts that hypertensive disorder is a significant risk factor in AP (Figure 4). Among PP study group, 12 cases (37.5%) had pre-existing anemia whereas among abruption group (20) cases (62.5%) had pre-existing anemia p=0.177 which is non-significant, suggests that pre-existing anemia is commonly due to nutritional anemia and not associated with incidence of PP and abruption (Figure 4).

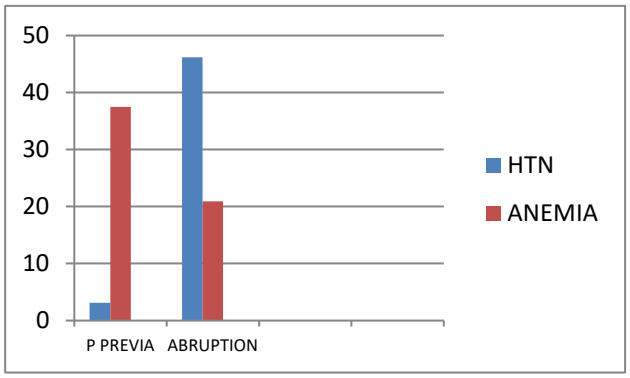

Figure 4: Comparative study of hypertension and anemia among the cases.

Out of 100 cases, pregnancy was terminated by cesarean in 65 cases (65%). The decision for mode of delivery was made based on fetal indications, bishop's score, maternal conditions and type of APH. Out of these, 96.97% cases of PP were taken for cesarean section whereas, 44.5% abruption cases underwent cesarean section. One case of vasa previa underwent cesarean section. One case of abruption had vaginal delivery and landed in hysterectomy. Intraoperatively uterine artery ligation and placental bed suturing was done to control the blood loss (Figure 5).

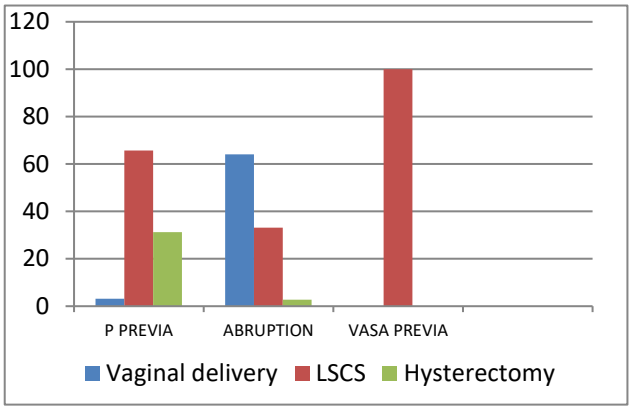

Figure 5: Mode of termination among the cases.

Out of 100 cases of APH, 66 cases required blood transfusions. Among PP cases, 32 cases (100%) required blood transfusion whereas among abruption 33 cases (49.25%) required blood transfusion p<0.001 which is significant, shows that higher rates of blood transfusions are required in PP compared to AP (Figure 6).

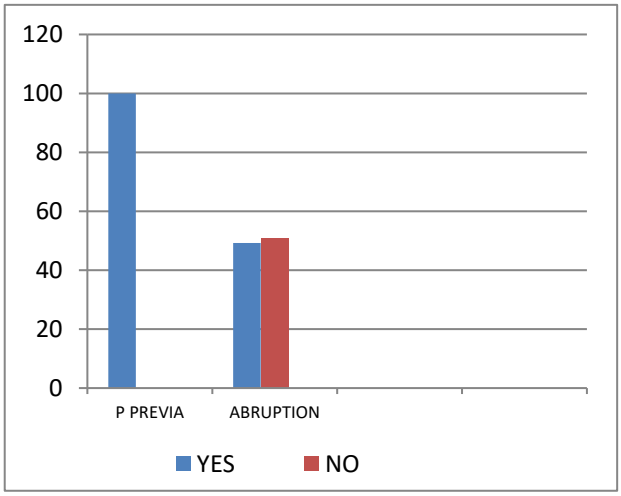

Figure 6: Blood transfusions among the cases.

PPH is the most common immediate complication seen in APH. In our study, PPH is seen in 62.5% cases in PP and in 32.8% in AP. Renal failure is seen in 8.9% cases of abruption and 6.2% cases of PP whereas DIC is seen in 14.93% of cases of abruption. Shock is seen in 2.99% of abruption and 6.25% of PP cases (Figure 7).

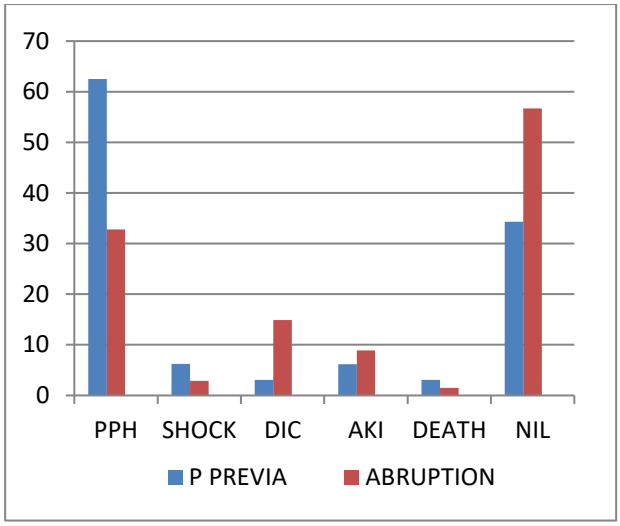

Figure 7: Maternal complications in the patients of APH.

Most of the infants 65% were born with low birth weights<2.5 kg. The 20 babies (65%) born to PP mothers were LBW, whereas 45 (67%) babies born to abruption mothers were LBW due to prematurity p=0.353 which is nonsignificant, shows that there is no significant difference. The 4.6% of babies were born with birth asphyxia, 20% babies developed neonatal jaundice and 36.9% of babies had respiratory distress syndrome. 3.13% babies died in NICU whereas, 37.5% babies were on the mother side (Figure 8).

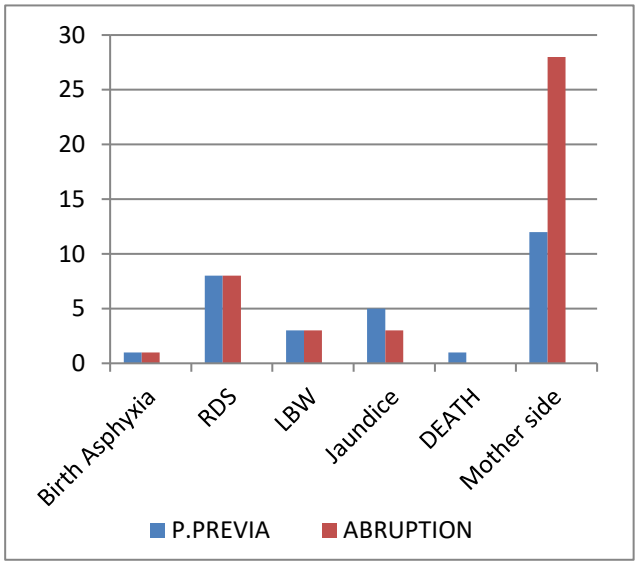

Figure 8: Neonatal morbidity and mortality.

Out of 100 babies,26 babies (38.8%) of abruption mothers were born with IUD/stillborn, whereas 1 baby (3.13%) of PP mothers was an IUD. P<0.001 which is significant, shows that incidence of IUD/stillbirth is significantly more in abruption compared to PP (Figure 9)

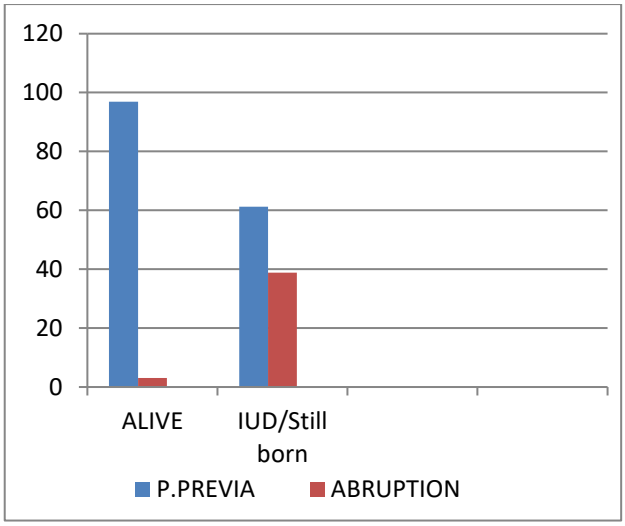

Figure 9: APH and foetal outcome.

Out of 100 APH cases, 3 maternal deaths were seen. 1 death was due to massive acute blood loss in placenta percreta leading to hypovolemic shock, 2nd death was due to abruption IUD leading to DIC and septic shock, and 3rd death was due to AP leading to DIC, hypotension, acute renal shutdown and severe renal cortical necrosis (Figure 10).

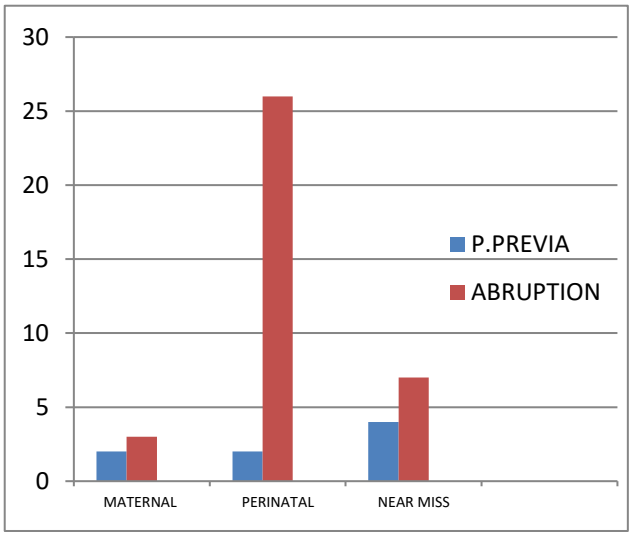

Figure 10: Maternal and perinatal mortality and near miss in APH.

DISCUSSION

APH is an important cause of maternal and perinatal morbidity and mortality in the world. The incidence of PP was 32% and that of AP was 67%. According to studies conducted by different authors incidence of abruption was much higher compared to PP similar to our study.[4-6]

In our study 41% of cases belonged to 21-25 years of age which is similar to the study by Lakshmipriya et al where

38%, were between 21-25 years of age.[7] The 40% of cases were presented in our study at 26-30 years of age which is similar to the study conducted by Adekanle et al and study conducted by Chand et al.[8,9] The mean age in our study is 24 years which is similar to the study conducted by Maurya et al in which the mean age was 23 years.[10]

In the present study, most cases of APH were multigravida 70% which is similar to study conducted by Hibbard et al (76%), Maurya et al (82%) and Chand et al (83%).[9-11] In our study 59% patients were unbooked as compared to 41% patients who were booked. Most of the cases were unbooked in both PP (62.5%) and abruption (56.7%) groups. It is similar to study by Tyagi et al which showed 66% unbooked cases and Chand et al which showed 64.8% unbooked cases.[9,12] It is seen in our study that most of these unbooked cases presented with higher degree of complications and had adverse outcomes as compared to patients who were booked and had regular antenatal checkups.

In our study, 65% of cases were delivered by cesarean section. Cesarean rates were 77% and 89% in studies conducted by Chand et al and Tyagi et al respectively.[9,12] Rates of cesarean hysterectomy was 12% in our study which is similar to the study conducted by Zakherah et al shows 11.3%.[13]

In the present study, 66% of APH cases needed blood transfusion. Out of which 49.25% cases of abruption and 100% of PP needed blood transfusion, which is similar to study conducted by Takai et al in which 61.5% cases were given transfusion and Ayushman et al in which 66.7% cases required blood.[4,14]

In the present study, 27% of the fetus presented with malpresentation like breech, transverse or unstable lie and more commonly seen in PP. This is similar to Raksha et al where abnormal presentations are seen in 25% of cases. In the present study, 65% of babies were born with low birth weight similar to Samal et al study.[15,16]

In the present study, perinatal mortality is seen in 28% of cases. The causes being high incidence of IUD and still births and also neonatal morbidity like birth asphyxia, respiratory distress syndrome and prematurity leading to neonatal death. This is similar to other studies.[17,18]

In the present study, 5 maternal deaths were seen. Out of these, 2 were due to PP and 3 deaths were due to abruption leading to DIC and shock. Study by Tyagi et al showed 6% mortality and was much less in Bharathi et al showed 3% maternal mortality. The main reason for maternal mortality being delayed referral, DIC and shock.[12,18]

The small sample size used is a limitation for the study. Long term follow up of the patients was not done.

CONCLUSION

APH is a major contributor in obstetrical hemorrhage. APH cannot reliably be predicted. APH is associated with maternal and perinatal morbidity and mortality. The incidence of AP compared to PP is high. AP carries a poor fetal prognosis as majority present with IUD. Awareness of pregnant women about the importance of regular antenatal checkups and easy accessibility to antenatal services go a long way in bringing down the maternal and perinatal morbidity and mortality related with APH.

The morbidity associated with PP can be reduced by detecting the condition of placenta in antenatal period by ultrasound and also the correction of anemia during antenatal period. Placental abruption is a clinical diagnosis and no sensitive or reliable diagnostic tests are available. Intensive family planning programs help in decreasing the cases of APH in relation with age and parity. All women with APH heavier than spotting and women with ongoing bleeding should be recommended hospital stay at least until the bleeding as stopped. Efforts should be made to reduce threat of unnecessary abortion, septic abortions, operative deliveries, because there is greater likelihood of PP 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. Good regular ANC and availability of medical services remains the backbone for the good maternal and perinatal outcome in APH.

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Conflict of interest: None declared
Ethical approval: The study was approved by the Institutional Ethics Committee

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