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RESEARCH ARTICLE

Fetal outcome in antepartum haemorrhage: a study at a tertiary care centre

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ABSTRACT

Objectives: The objectives of the present research are to study the fetal outcome in antepartum haemorrhage (APH) and the associated risk factors contributing to fetal morbidity and mortality. **Materials & methods:** The present observational study includes total 77 cases diagnosed with APH during the study period (June 2017 to March 2020). The parameter of the patients that were documented in the study includes demographic data of the new born, cause for APH, fetal outcome. **Result:** The institutional prevalence of antepartum hemorrhage (APH) was 1.78%. The main causes of APH in patients were abruption (51.97%) and placenta previa (44.15%). The mean birth weight was significantly high in fetus with placenta previa complication (2.56±0.42 Kg) in comparison to abruption (2.19±0.78 Kg). The mean APGAR scores (1 min and 5 min) were significantly high in fetus with placenta previa complication in comparison to abruption. The perinatal mortality in placenta previa and abruption was 5.40% and 15% respectively. **Conclusion:** APH is an obstetrical high-risk entity and one of the most important cause of perinatal mortality and morbidity. Therefore, prevention, early detection, management and appropriate clinical treatment is vital.

Keywords: Antepartum hemorrhage, placenta previa, abruption of placenta, perinatal complications.

Any vaginal bleeding during pregnancy following the prenatal viability period (end of stage two) is termed antepartum haemorrhage.[1] Antepartum haemorrhage has always been one of the most feared complications in obstetrics. Antenatal haemorrhage is still a serious, urgent obstetric problem, causing a significant increase in the morbidity and mortality of mothers and perinatal births in our country.[2] APH is described as vaginal bleeding from the time of pregnancy through to delivery.[3] The world health authority defines prenatal bleeding as bleeding after 28 weeks of gestation.[4] APH is a complication of 0.55% of pregnancies, which differs according to socio-demographic variable [5,6]. The main causes of APH are premature detachment of the placenta; however, in some cases the exact cause of bleeding may not be established.[6] The factors like poor education, family history of hypertension, glucose-6-phosphate dehydrogenase deficiency, and Down's syndrome were found to be associated with increased APH. Antepartum hemorrhage can be quantified as [7] minor hemorrhage: blood loss < 500 ml; major hemorrhage: blood loss 500-1000 ml; massive hemorrhage: blood loss > 1000 ml.

According to the estimates by the World Health Organization (WHO), there are about 2.9 million newborn deaths during the neonatal period with another 2 million stillbirths around the world annually.[8] Adverse pregnancy outcomes associated with placenta previa and abruptio placentae had been previously reported in many studies. Placenta previa complicates 0.33 percent to 0.55 percent of all pregnancies and incidence of placental abruption is approximately 0.5 to 1 percent.[9]

Nowadays, the wider use of ultrasound to locate the placenta and diagnose placental abruption, improve obstetric and anesthetic medications, increase the use of blood and

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blood products to correct anemia, and modern neonatal care have increased the survival rate of premature babies and played an important role and in reducing perinatal mortality.[2] The main complications of APH in mothers include hypovolemic shock and acute renal failure.[10] Since APH is distinguished as a serious, life-threatening condition that causes significant perinatal mortality and morbidity, it is essential to assess the nature of the condition in a developing country in order to improve maternal health care.[11] The aim of the present research is to study the fetal complications in antepartum haemorrhage (APH) and to study the associated risk factors contributing to fetal morbidity

Materials and methods

This observational study was carried out at the department of Obstetrics and Gynecology at tertiary care centre from June 2017 to March 2020 after getting the approval from the institutional ethical committee.

Sample size: From the study published as "study of antepartum haemorrhage and its maternal and perinatal outcome at Lucknow Medical College, in the year 2016", the prevalence of APH case in LSCS was 89%. At 5% level of significance and considering 7% precision for the study, n = 76.73. Thus our study sample size recommended was n=77.

The total number of deliveries conducted in the institution during the study period were 4337. All the patients that had APH during this period were included in the study. As per the inclusion and exclusion criteria, the following data was collected from the patient files admitted with a diagnosis of APH.

The clinical definition of the APH included in the study was bleeding from the genital tract from the time of viability of pregnancy (from 28 weeks of gestation and beyond in this study) to the delivery of the baby.[10]

Inclusion criteria: All cases of APH with gestational age > 28weeks.

Exclusion criteria

1) Cases with bleeding PV with gestational age <28 weeks.
2) Patient suffering from any other bleeding disorder.
3) Bleeding from a source other than the uterus.

The following parameter of the patients were noted for the study.

- Demographic data of new born.
- Causes for APH.
- Fetal outcome – Morbidity and Mortality.

Statistical Analysis: The statistical analysis was done using the SPSS version 2.2. Results were presented in tabular form. A p value of < 0.05 was considered significant.

Results

Table 1: Causes of antepartum hemorrhage

Cause of APH	No of patients	Percentage
Abruption	40	51.97
Placenta previa	34	44.15
Placenta increta	2	2.59
Placenta accreta	1	1.29
Total	77	100

Table 2: Demographic variables

Characteristics		Mean ± SD
Apgar score	1 Min	7.00±1.71
	5 Min	8.21±1.27
Birth weight		2.37±0.66
Gender	Boy	46 (60.5%)
	Girl	30 (39.5%)
Mortality	Absent	67 (89.5%)
	Present	8 (10.5%)
	IUD	1 (1.3%)
Morbidity	Absent	54 (69.7%)
	Respiratory Distress	15 (19.73%)
	Preterm	21 (27.63%)
	Sepsis	7 (9.21%)

A total of 77 patients were diagnosed with APH during the study period giving an institutional prevalence of 1.78%. The main cause of APH were abruption placentae (AP) seen in 40 (51.97%) patients and placenta previa (PP) in 34 (44.15%) of the patients (table 1). The mean Apgar scores (1 min & 5 min) of new born were more in the placenta previa in comparison to abruption and the result showed a significant difference between the complications with a "t" value 3.34 for 1 min and 4.11 for 5 min (table 2). The mean birth weight was 2.37±0.66 and the birth weight was significantly high in fetus with placenta previa in comparison to abruption (table 3).

Table 3: Comparison of Apgar score between abruption and placenta previa

Characteristics		Abruption	Placenta previa	T value	P value
Apgar Score	1 Min	6.35±1.98	7.65±1.03	3.34	0.001*
	5 Min	7.59±1.59	8.82±0.71	4.11	0.001*
Birth weight		2.19±0.78	2.56±0.42	2.52	0.014*

Table 4: Comparison of mortality and morbidity of the babies between AP & PP patients

Group	Abruption	Placenta previa	Chi square value	P value
Mortality				
Dead born	6	2	2.81	0.24
Alive	33	34		
ID	1	0		
Morbidity				
Pre term	16	5	17.65	0.001*
Sepsis	5	2		
Respiratory distress	10	5		

The study found non-significant differences with chi square=2.81 and p=0.24 between the two groups. The

delivery of still born babies showed a higher percentage in abruption group but the difference was not significant. The morbidity symptoms shows significant difference with significantly higher morbidity was seen in the Abruption patients (table 4).

Discussion

In a day to day practice, an obstetrician has to tackle life threatening condition of APH and take a timely judicious decision of terminating pregnancy, keeping in mind the welfare of both the mother and the fetus without exposing either of them to undue risk. The prevalence of APH was 1.78% in this study which is comparable to other studies [3, 12] showing 2.53%.[1] It is however lower than 3.8% documented in the study by Majumder S et al, at 5.4% documented in Pakistan[13] and 15.3% from Qatar.[14] A study conducted in Tamilnadu also showed a low prevalence of 1.2%.[2]

The leading cause of antepartum hemorrhage in this study was found to be abruptio placenta followed by placenta previa which was similar to the findings of Takai et al.[3] It was in opposition to the findings in Southwestern Nigeria[15] in which placenta previa was found to be the leading cause. Hypertension had also been found to be the most consistent predisposing factor associated with abruptio placentae.[16]

In our study the overall perinatal mortality due to antepartum hemorrhage was 10.5% which was comparatively less than similar studies by Mushtaq et al [17], Jain et al [18] and Patel et al[14] who reported a perinatal mortality rate of 47.01% and 43% respectively. A study from Nigeria [3] also revealed a perinatal mortality rate of 42.8% in antepartum hemorrhage while Singhal et al [6] reported a perinatal mortality of 23.70%. A study by Lakshmipriya et al [2] had shown rate of 6.6% Usynina et al [19] reported a perinatal mortality of only 4.7% from Russia.

Perinatal complications of antepartum hemorrhage include birth asphyxia, sepsis, preterm birth and intrauterine death. The present study found perinatal mortality was 15% in placental abruption and 5.5% in placenta previa while in the study by Jain et al[18] in 2015 found that perinatal mortality in placenta previa cases was 29.6%, while in placental abruption, it was 64.7%.

The mean birth weight of the babies of patients with placental hemorrhage was 2.37±0.66 kg. The birth weight of babies of patients with abruption was 2.19±0.78kg which was significantly less in comparison to the children with placenta previa with birth weight of 2.56±0.42kg. The result is in contradiction to the study by Mushtaq et al [17] where 75.9% of the babies were low birth weight in cases of placenta previa while the frequency was 76.47% in cases of placental abruption.

Since antepartum hemorrhage is a major cause of perinatal deaths and complications, it is the need of the hour to devise our own evidence based guidelines for the early recognition and management of these patients that can be implemented in our country. Early diagnosis, prompt management of shock and resuscitation, blood transfusion, and a low threshold for doing a cesarean section are the keys to saving the life of both the mother as well as the fetus in cases of antepartum hemorrhage.[20]

Antenatal screening and checkups are vital for ringing the alarm bells for early referral of patients at high risk of developing antepartum hemorrhage. The adverse pregnancy outcomes were found to be as much as 22 times increased in unbooked pregnancies than the booked cases.[21] The antenatal screening needs to be expanded with focus on the education of the lady health workers and advertisements on the print, electronic and social media channels which can help educate the people at increased risk.

Conclusion

APH is a high obstetrical risk and one of the most severe cause of perinatal mortality and morbidity. Therefore, prevention, early detection and rapid management should focus on clinical treatment. Education of the mothers regarding routine antenatal checkups and scans and improvement in the antenatal healthcare services can help segregate the patients at risk of developing antepartum hemorrhage.

Conflict of interest: None. **Disclaimer:** Nil.

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