Section: Obstetrics and Gynaecology

Original Research Article

STUDY OF ANTEPARTUM HAEMORRHAGE AND ITS FETOMATERNAL OUTCOMES - AN OBSERVATIONAL STUDY

Runjun Doley[1], Bornali Pegu[2], Pronamika Konyak[3]

[1]Professor (DACP), Department of Obstetrics and Gynaecology, Jorhat Medical College, Jorhat, Assam, India.
[2]Associate Professor, Department of Obstetrics and Gynaecology, Assam Medical College and Hospital, Dibrugarh, Assam, India.
[3]Assistant Professor, Department of Obstetrics and Gynaecology, Jorhat Medical College, Jorhat, Assam, India.

Received : 24/04/2026
Received in revised form : 05/06/2026
Accepted : 18/06/2026

Keywords:
Antepartum haemorrhage, placenta previa, placental abruption, fetomaternal outcome, postpartum haemorrhage, NICU admission.

Corresponding Author:
Dr. Papu Sahu,
Email: papusahu54321@gmail.com

DOI: 10.47009/jamp.2026.8.3.185

Source of Support: Nil,
Conflict of Interest: None declared

Int J Acad Med Pharm
2026; 8 (3); 1028-1033

ABSTRACT

Background: Antepartum haemorrhage (APH) is one of the most serious obstetric emergencies and remains a significant contributor to maternal and perinatal morbidity and mortality worldwide. It is defined as bleeding from the genital tract after 28 weeks of gestation and before delivery of the fetus. The most common causes of APH include placenta previa and placental abruption. Despite advances in obstetric care, APH continues to pose a major challenge, particularly in developing countries where anemia, limited antenatal care, and delayed referrals increase the risk of adverse outcomes. The present study aimed to study the maternal and fetal outcomes associated with antepartum haemorrhage in a tertiary care centre. **Materials and Methods:** A prospective observational study of 50 pregnant women with gestational age ≥28 weeks presenting with antepartum haemorrhage was conducted in the Department of Obstetrics and Gynaecology, Jorhat Medical College & Hospital, Assam over a period of one year from 1st November 2024 to 31st October 2025. **Results:** In this study, placenta previa was the most common cause of APH, accounting for 60% of cases, followed by abruptio placenta (30%) and unexplained APH (10%). Majority of the patients belonged to the 26–30 years age group (38%), and multigravida women constituted 68% of cases. A history of previous uterine scar was present in 48% of patients. Emergency LSCS was the predominant mode of delivery (78%). Maternal complications included intrapartum haemorrhage (30%), morbidly adherent placenta (10%) and maternal collapse (8%). Blood transfusion was required in 60% of cases, ICU admission in 18% and sepsis occurred in 8% of patients. Fetal distress was observed in 28% of cases, while stillbirth and intrauterine death occurred in 14% and 10% cases respectively. Neonatal morbidity was significant, with 36% of neonates requiring NICU admission and 16% showing intrauterine growth restriction. Preterm delivery occurred in 32% of cases, and overall adverse fetal outcomes were observed in 46% of pregnancies. **Conclusion:** Our study highlighted the need for early diagnosis, adequate antenatal surveillance, and timely obstetric intervention in cases of antepartum haemorrhage to reduce the fetomaternal complications associated with APH.

INTRODUCTION

Antepartum haemorrhage (APH) remains one of the most serious obstetric emergencies contributing significantly to maternal and perinatal morbidity and mortality worldwide. According to the Royal College of Obstetricians and Gynaecologists (RCOG), APH is defined as bleeding from the genital tract after 28 weeks of gestation and requires prompt evaluation and management.[1] Globally, obstetric haemorrhage accounts for nearly 27% of maternal deaths.[2] In India, haemorrhage continues to be one of the leading causes of maternal mortality as reported by SRS and NFHS data.[3,4] The MBRRACE-UK report also highlights haemorrhage as a major preventable cause of maternal mortality.[5] APH is also linked to other unfavorable outcomes for mothers, including hypovolemic shock, disseminated intravascular coagulation, acute renal injury, major blood transfusion requirements and emergency hysterectomy.[6] APH also has devastating effects on the fetus and is linked to high incidence of preterm

ISSN (O): 2687-5365; ISSN (P): 2753-6556

delivery, low birth weight, asphyxia at birth, intrauterine growth restriction, stillbirth, and early neonatal death.[7] This study aimed to provide a comprehensive understanding of APH and its consequences which will further help in improving antenatal surveillance, optimizing management protocols, and ultimately reducing the morbidity and mortality associated with this obstetric emergency.

Aims and Objectives

Aim

To find out the feto-maternal outcomes associated with antepartum haemorrhage.

Objectives

1. To determine the maternal outcome of antepartum haemorrhage in a tertiary care center
2. To determine the foetal outcome of antepartum haemorrhage in a tertiary care center.

MATERIALS AND METHODS

A total of 50 cases of antepartum haemorrhage were included in this hospital-based prospective study. The sample size was determined based on the average number of APH cases reported in the hospital records over the preceding three years. All were informed regarding the study and written consent taken. Ethical committee clearance was taken for the same.

Inclusion Criteria

- Pregnant women with gestational age ≥ 28 weeks
- Diagnosed clinically and/or ultrasonographically as Antepartum Haemorrhage
- Willing to participate and provide written informed consent

Exclusion Criteria

- Gestational age ≤ 28 weeks
- Patients with known bleeding disorders
- Patients not willing to participate in the study

RESULTS

In the present study, 50 cases of antepartum haemorrhage were studied and following results were analysed at the end of the study.

Type of Antepartum Haemorrhage: In the present study, placenta previa was identified as the most common cause of APH, accounting for 60% cases with abruptio placenta as the second most frequent etiology (30%). Unexplained causes of APH constituted the remaining 10%.

Table 1: Distribution of cases according to type of Antepartum Haemorrhage

Type of APH	Frequency (n=50)	Percentage (%)
Placenta Previa	30	60%
Abruptio Placenta	15	30%
Unexplained APH	5	10%
Total	50	100%

Age Distribution: Majority of cases belonged to the 26–30 years age group (38%). This was followed by the 21–25 years age group (22%) and the 31–35 years age group (20%). Patients aged 20 years or below accounted for 12% while those aged above 35 years constituted 8% of cases.

Table 2: Age Distribution of Antepartum Haemorrhage patients

Age Group (Years)	Frequency (n=50)	Percentage (%)
≤ 20	6	12%
21–25	11	22%
26–30	19	38%
31–35	10	20%
> 35	4	8%
Total	50	100%

Association of Type of APH with Age: Majority of the cases of placenta previa (43.3%) and abruptio placenta (33.3%) occurred in the 26–30 years age group. However, statistical analysis showed that the association between type of antepartum haemorrhage and maternal age was not statistically significant (p = 0.41).

Table 3: Association of Type of APH with Age

Age Group (years)	Placenta Previa	Abruptio Placenta	Unexplained APH	p-value
≤20	2 (6.7%)	3 (20%)	1 (20%)	0.41
21-25	5 (16.7%)	4 (26.7%)	2 (40%)	
26-30	13 (43.3 %)	5 (33.3%)	1 (20%)	
31-35	7 (23.3%)	3 (20%)	0 (0 %)	
>35	3 (10%)	0 (0 %)	1 (20%)	

Gravida Distribution: Majority of the cases were multigravida (68%), while only 32% were primigravida.

ISSN (O): 2687-5365; ISSN (P): 2753-6556

Table 4: Gravida Distribution of APH patients

Gravida Status	Frequency (n=50)	Percentage (%)
Primigravida	16	32%
Multigravida	34	68%

Association of Type of APH with Gravida: Majority of cases in each category of APH were multigravida (73.3% cases of placenta previa, 60% cases of abruptio placenta, and 60% cases of unexplained APH). However, statistical analysis revealed that the association between type of APH and gravida status was not statistically significant (p = 0.29).

Table 5: Association of Type of APH with Gravida score

Gravida	Placenta Previa	Abruptio Placenta	Unexplained APH	p-value
Primigravida	8 (26.7%)	6 (40%)	2 (40%)	0.29
Multigravida	22 (73.3%)	9 (60%)	3 (60%)	

Mode of Delivery: Majority of the patients were delivered by emergency LSCS (78% cases), while 22% cases had vaginal delivery.

Table 6: Distribution of APH cases on mode of delivery

Mode of Delivery	Frequency (n=50)	Percentage (%)
Vaginal Delivery	11	22%
Emergency LSCS	39	78%

Association of Type of APH with Mode of Delivery: In this study, caesarean section was the predominant mode of delivery, performed in 90% cases of placenta previa, 60% cases of abruptio placenta, and 60% cases of unexplained APH.

Table 7: Association of Type of APH with Mode of Delivery

Mode of Delivery	Placenta Previa	Abruptio Placenta	Unexplained APH	p-value
Vaginal Delivery	3 (10%)	6 (40%)	2 (40%)	0.02
LSCS	27 (90%)	9 (60%)	3 (60%)	

Intrapartum Complications: Hemorrhage was the most common complication (30% cases), followed by morbidly adherent placenta in 10% cases (placenta accreta in 6% and placenta increta in 4% cases) and maternal collapse in 8% cases. Caesarean hysterectomy was required in 6% cases, all of which were associated with placenta previa. Additionally, uterine anomaly was noted in 1 case (2%).

Table 8: Distribution of cases according to Intrapartum Complications

Intrapartum Complications	Frequency (n=50)	Percentage (%)
Haemorrhage	15	30%
Maternal Collapse	4	8%
Placenta Accreta	3	6%
Placenta Increta	2	4%
Caesarean Hysterectomy	3	6%
Uterine Anomaly	1	2%

Post-Operative Complications: Most common post-operative complication was the requirement of blood transfusion (60% cases). Postpartum haemorrhage was observed in 20% cases and ICU admission was required in 18% cases. Sepsis was reported in 8% cases with maternal death in 6% cases.

Table 9: Distribution of cases according to Post-Operative Complications

Post-operative Complication	Frequency (n=50)	Percentage (%)
Postpartum Haemorrhage	10	20%
ICU Admission	9	18%
Blood Transfusion	30	60%
Sepsis	4	8%
Maternal Death	3	6%

Previous Uterine Scar: A history of previous uterine scar in forms of previous caesarean section, history of dilatation and curettage and other uterine operations was present in 48% cases.

Table 10: Distribution of cases according to Previous Uterine Scar

Previous Uterine Scar	Frequency (n=50)	Percentage (%)
Previous LSCS	16	32%

ISSN (O): 2687-5365; ISSN (P): 2753-6556

Dilatation & Curettage	6	12%
Other Scar	2	4%
No Scar	26	52%
Total	50	10%

Foetal Distress, mortality along with other morbidities in APH: Foetal distress was observed in 28% cases with NICU admission being required in 36% neonates. Stillbirth occurred in 14% cases and intrauterine death (IUD) in 10% cases. IUGR was observed in 16% cases and 32% of total cases had preterm deliveries.

Table 11: Distribution of Foetal outcome in APH

Foetal Outcome	Frequency (n=50)	Percentage (%)
Fetal distress	14	28%
Stillbirth	7	14%
Intrauterine death (IUD)	5	10%
NICU admission	18	36%
IUGR	8	16%
Preterm birth	16	32%

Association of Type of APH with Fetal Outcome: [Table 12] illustrates the distribution of fetal outcomes associated with different types of antepartum haemorrhage. Overall, adverse fetal outcomes were comparatively more common in abruptio placenta than in placenta previa. Statistical analysis showed that the association between type of APH and fetal outcome was statistically significant ($p = 0.04$), indicating fetal outcomes varied significantly depending on the type of APH.

Table 12: Association of Type of APH with Fetal Outcome

Fetal outcomes	Placenta Previa	Abruptio Placenta	Unexplained APH	p-value
Fetal distress	7 (23.3%)	6 (40%)	1 (20%)	0.04
Stillbirth	3 (10%)	4 (26.7%)	0 (0 %)	
IUD	2 (6.7%)	3 (20%)	0 (0 %)	
NICU Admission	10 (33.3%)	6 (40%)	2 (40%)	
IUGR	3 (10%)	4 (26.7%)	1 (20%)	
Preterm birth	9 (30%)	6 (40%)	1 (20%)	

Associated Risk Factors in Antepartum Haemorrhage: [Table 13] illustrates the distribution of associated risk factors among the different types of antepartum haemorrhage.

Table 13: Associated Risk Factors in Antepartum Haemorrhage

Risk Factor	Placenta Previa	Abruptio Placenta	Unexplained APH	p-value
PIH	4 (13.3%)	6 (40%)	0 (0%)	0.02
Eclampsia	1 (3.3%)	2 (13.3%)	0 (0%)	0.18
Twin Pregnancy	3 (10%)	1 (6.7%)	0 (0%)	0.67
Oligohydramnios	2 (6.7%)	2 (13.3%)	0 (0%)	0.41
Malpresentation	5 (16.7%)	1 (6.7%)	1 (20%)	0.36

DISCUSSION

In the present study comprising 50 cases of APH, placenta previa was the most common cause of APH, accounting for 60% of cases, followed by abruptio placenta (30%) and unexplained APH (10%). Similar findings were reported by Majumder et al., (placenta previa 56%, abruptio placenta 34% and unexplained causes 10% of all APH cases).[8] Likewise, Tyagi et al. reported that placenta previa accounted for 54% of APH cases and abruptio placenta for 46%.[9] However, Ananth et al. reported that in developed countries, placental abruption occured in about 30–35% of APH cases, with placenta previa accounting for approximately 20–25% cases.[10] The higher proportion of placenta previa in the present study may be due to increasing caesarean section rates and multiparity.

In this study, majority of the patients belonged to the 26–30 years age group (38%), followed by 21–25 years (22%) and 31–35 years (20%) with majority of cases of both placenta previa (43.3%) and abruptio placenta (33.3%) occurring in the same age group (26–30 years). However, statistical analysis showed that the association between type of APH and maternal age was not statistically significant ($p = 0.41$). Similar findings were reported by Kedar et al, where majority of the patients were in the 25–29 years age group (40.45%). However, abruptio placentae was most commonly observed in the 30–34 years age group (32.35%) and placenta previa occurred most frequently in the 25–29 years age group (53.34%).[11] Likewise, Adekanle et al in their study found that the highest proportion of APH cases belonged to the 25–29 years age group (39.8%).[12] In several observational studies, approximately 28.9% of placenta previa cases occurred in women aged >35 years, and the prevalence in this age group was reported to be around 3.6%, indicating a significant

ISSN (O): 2687-5365; ISSN (P): 2753-6556

association between advanced maternal age and placenta previa.[10]

Majority of the cases in the present study were multigravida (73.3% cases of placenta previa, 60% cases of abruptio placenta, and 60% cases of unexplained causes). These findings indicate that APH was more frequently observed among multigravida women across all categories of APH. However, statistical analysis revealed that the association between type of APH and gravida status was not statistically significant ($p = 0.29$). Similar findings were noted in a study by Anjankar and Ramteke, where majority of patients with APH were multigravida with majority of the cases being multigravida across all categories of APH as well.[13] In a study by Kulkarni and Shirsath however, abruptio placentae was most commonly observed in primigravida (65%) while placenta previa was more frequently seen in multigravida women.[14]

In the present study, LSCS was the predominant mode of delivery in all the types of APH. Similar findings were observed in studies by Kulkarni and Shirsath [14] and Jharaik et al.[15]

In the present study, haemorrhage was the most common intrapartum complication followed by morbidly adherent placenta. Haemorrhage was also the most common intrapartum complication in the study by Kulkarni and Shirsath.[14]

In the present study, statistical analysis revealed that the association between type of antepartum haemorrhage and previous uterine scar was not statistically significant ($p = 0.36$). In a study by Rose and Ushadevi, placenta previa was more common in women with a previous caesarean section compared to those with an unscarred uterus.[16]

Statistical analysis done in the present study showed that the association between type of APH and fetal outcome was statistically significant ($p = 0.04$), indicating that fetal outcomes varied significantly depending on the type of APH. Overall, neonatal morbidity was slightly higher in cases of abruptio placenta compared to placenta previa. The increased need for NICU admission may be attributed to complications such as prematurity, birth asphyxia and respiratory distress, which are commonly observed in pregnancies complicated by placental abnormalities. In the present study, 32% of neonates were delivered preterm. A study by Ananth et al. demonstrated that pregnancies complicated by APH are associated with a significantly increased risk of preterm delivery, primarily due to recurrent bleeding and the need for early termination of pregnancy for maternal or fetal indications.[10] Likewise, Downes et al. reported that placental abruption is strongly associated with adverse perinatal outcomes, including higher rates of preterm birth and neonatal complications, largely related to placental insufficiency and fetal hypoxia.[17]

CONCLUSION

The present study highlights the serious nature of antepartum haemorrhage and the need for prompt obstetric intervention to prevent maternal and fetal complications. Early diagnosis, timely referral, availability of blood transfusion services, ICU provision and appropriate obstetric management are essential to improve fetomaternal outcomes and reduce complications associated with this condition.

REFERENCES

1. RCOG [Internet]. [cited 2025 Dec 22]. Antepartum Haemorrhage (Green-top Guideline No. 63). Available from: https://www.rcog.org.uk/guidance/browse-all-guidance/green-top-guidelines/antepartum-haemorrhage-green-top-guideline-no-63/.
2. Trends in maternal mortality 2000 to 2020: estimates by WHO, UNICEF, UNFPA, World Bank Group and UNDESA/Population Division [Internet]. [cited 2025 Dec 22]. Available from: https://www.who.int/publications/i/item/9789240068759
3. NFHS [Internet]. [cited 2026 Feb 27]. Available from: https://www.nfhsiips.in/nfhsuser/nfhs5.php
4. SRS - Maternal Mortality Bulletin | Government of India [Internet]. [cited 2025 Dec 24]. Available from: https://censusindia.gov.in/census.website/data/SRSMMB
5. Saving Lives, Improving Mothers' Care 2023 - Lessons learned to inform maternity care from the UK and Ireland Confidential Enquiries into Maternal Deaths and Morbidity 2019-21 | MBRRACE-UK | NPEU [Internet]. [cited 2026 Feb 27]. Available from: https://www.npeu.ox.ac.uk/mbrrace-uk/reports/maternal-reports/maternal-report-2019-2021
6. MBRRACE-UK_Maternal_Compiled_Report_2023.pdf [Internet]. [cited 2025 Dec 22]. Available from: https://www.npeu.ox.ac.uk/assets/downloads/mbrrace-uk/reports/maternal-report-2023/MBRRACE-UK_Maternal_Compiled_Report_2023.pdf
7. Tikkanen M. Placental abruption: epidemiology, risk factors and consequences. Acta Obstet Gynecol Scand. 2011;90:140–9. doi:10.1111/j.1600-0412.2010.01030.x PubMed PMID: 21241259.
8. Majumder S, Shah PT, Deliwala KJ, Patel RV, Madiya A. Study of foetomaternal outcome of antepartum haemorrhage in pregnancy. Int J Reprod Contracept Obstet Gynecol. 2015;4:1936–9. doi:10.18203/2320-1770.ijrcog20151289
9. Tyagi P, Yadav N, Sinha P, Gupta U. Study of antepartum haemorrhage and its maternal and perinatal outcome. Int J Reprod Contracept Obstet Gynecol. 2016;5:3972–7. doi:10.18203/2320-1770.ijrcog20163873
10. Ananth CV, Peltier MR, Kinzler WL, Smulian JC, Vintzileos AM. Chronic hypertension and risk of placental abruption: is the association modified by ischemic placental disease? Am J Obstet Gynecol. 2007;197:273.e1-7. doi:10.1016/j.ajog.2007.05.047 PubMed PMID: 17826417
11. Kedar K, Uikey P, Pawar A, Choudhary A. Maternal and fetal outcome in antepartum haemorrhage: a study at tertiary care hospital. Int J Reprod Contracept Obstet Gynecol. 2016;5:1386–91. doi:10.18203/2320-1770.ijrcog20161291
12. A AD, A.s A, F.f F. Ante-partum haemorrhage and pregnancy outcome in LAUTECH Teaching Hospital, southwestern Nigeria. J Med Med Sci. 2011;2:1243–7.
13. Anjankar PS, Ramteke S. Maternal and perinatal outcome in antepartum haemorrhage patients attending tertiary care hospital in central India: a prospective observational study. Int J Reprod Contracept Obstet Gynecol. 2022;11:2997–3004. doi:10.18203/2320-1770.ijrcog20222616
14. Kulkarni AR, Shirsath AS. Study of antepartum hemorrhage and its maternal and perinatal outcome at a tertiary care hospital. Int J Reprod Contracept Obstet Gynecol. 2021;10:2210–4. doi:10.18203/2320-1770.ijrcog20212149

ISSN (O): 2687-5365; ISSN (P): 2753-6556

15. Jharaik H, Dhiman B, Verma SK, Sharma A. Consequences of antepartum hemorrhage and its maternal and perinatal outcome. Int J Reprod Contracept Obstet Gynecol. 2019;8:1480–6. doi:10.18203/2320-1770.ijrcog20191203
16. AARose, Gopalan U. Previous lower segment caesarean section -a potential risk factor for Placenta Previa. Int J Med Res Rev. 2015;3:385–9. doi:10.17511/ijmrr.2015.i4.072
17. Downes KL, Shenassa ED, Grantz KL. Neonatal Outcomes Associated With Placental Abruption. Am J Epidemiol. 2017;186:1319–28. doi:10.1093/aje/kwx202.

ISSN (O): 2687-5365; ISSN (P): 2753-6556