



## **Maternal Outcome in Antepartum Haemorrhage - A Prospective Study in Tertiary Care Teaching Hospital**

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### **Abstract**

**Introduction:** APH is an important cause of maternal mortality (2-5%) and perinatal mortality (15-20%) depending upon extent and intensity of placental separation. In developing countries like India maternal and perinatal mortality is very high due to problems like anaemia, difficulties in transport in emergency and restricted medical facilities. This study is aimed to know the incidence of APH, its complications and to make conclusion for better, timely management to reduce fetomaternal mortality and morbidity.

**Materials and methods:** This was a prospective study of patients after 28 week of pregnancy with APH

admitted in obstetrics & gynaecology department of SMSMC, Jaipur.

Total number 1280 antenatal patients admitted in obstetrics & gynaecology department of SMS was taken for study, considering incidence of 3% with absolute error of 1% and loss to follow up of 10%. All enrolled women were evaluated for the maternal outcomes including preterm rupture of membranes, preterm labour, gestational hypertension and preeclampsia, malpresentation, postpartum haemorrhage, sepsis, shock, retained placenta, anaemia, DIC, renal failure, multiple blood transfusions, route of delivery – Normal vaginal delivery/ LSCS, ICU admissions, caesarean hysterectomies.

**Results:** Out of 1280 cases delivered in our study period 66 cases (5.2%) were diagnosed with Antepartum Haemorrhage. Out of 66 patients of APH delivered, 36 cases (55 %) were abruptio placenta while 30 cases (45 %) were Placenta Previa. 26 cases of abruption placenta (72%) had LSCS, and 10 cases (28%) had normal vaginal delivery. In 30 cases of placenta previa, all cases (100%) had LSCS. In 11 cases (30.6%) of abruptio placenta, Postpartum hemorrhage was observed, 14 cases (38.9%) needed ICU admission, 13 cases (36.1%) had Shock, 7 cases (19.4%) had coagulation failure, 2 cases (5.6%) had Disseminated intravascular coagulation disorder, 2 cases (5.6%) had deranged liver enzymes, 1 case (2.8%) had Acute renal failure, 1 case (2.8%) had HELLP syndrome. In placenta previa, PPH was seen in 9 cases (23.3%), in 7 cases (23.3%) shock was observed, 7 cases (19.4%) needed ICU admission, 4 cases (11.1%) had coagulation failure.

**Conclusion:** APH is an obstetric emergency, and it is one of the most significant causes of maternal and perinatal mortality which can be prevented by early antenatal registration, regular antenatal care, early detection of high-risk cases and early referral to higher centers.

**Keywords:** Placenta Previa, Placental Abruption, Vasa Previa, Sepsis

### Introduction

Antepartum haemorrhage is defined as bleeding from or into the genital tract after the 28th week of gestation but before the birth of the foetus (the first and second stages of labor are included). The 28th week is taken as the lower limit of fetal viability. It occurs in 2-5% of pregnancies. About one-third of APH belongs to placenta previa, its incidence ranges from 0.5% to 1%

.Abruptio placenta incidence is about 1 in 100 deliveries (1)

In spite of modern obstetrical care and increasing awareness of the population, Antepartum haemorrhage is a serious challenge to obstetricians as it can affect the life of both mother and foetus. Maternal mortality ratio in India is 113 per 1,00,000 live births (2) and worldwide it is 211 per 1,00,000 live births (3).

APH is an important cause of maternal mortality (2-5%) and perinatal mortality (15-20%) depending upon extent and intensity of placental separation. Causes of Antepartum Haemorrhage are: Placenta previa (4-5/1000 of all pregnancies), Placental abruption (1%), Other causes APH of indeterminate origin (1-1.5%) Vasa previa, Pathology of the cervix – erosion, polyp, tumour, Bleeding from the lower genital tract, Blood-stained cervical mucus (Show) (4). In developing countries like India maternal and perinatal mortality is very high due to problems like anaemia, difficulties in transport in emergency and restricted medical facilities.

Presently, increase in use of ultrasound for placental localisation and to diagnose abruption placenta, improved obstetrical and anaesthetic facilities, increase in use of blood and its products to correct anaemia and advanced neonatal care facilities increase chances of survival of a preterm infant and have played an important role in decreasing perinatal as well as maternal morbidity and mortality.

This study is aimed to know the incidence of APH, its complications and to make a conclusion for better, timely management to reduce fetomaternal mortality and morbidity.

### Materials and methods

This was a Prospective observational study done from Jan 2020 to June 2021 at the Department of Obstetrics

and Gynaecology, SMS medical college & hospital, Jaipur. This was a prospective study of patients after 28 week of pregnancy with APH admitted in obstetrics & gynaecology department of SMSMC, Jaipur.

A study protocol was submitted to the institutional ethical committee of the SMS Medical College and Hospital, Jaipur and approval was obtained before the start of study.

Sample size - Total number 1280 antenatal patients admitted in obstetrics & gynaecology department of SMS was taken for study, considering incidence of 3% with absolute error of 1% and loss to follow up of 10%.

Inclusion criteria- All cases of antepartum haemorrhage with >28 weeks of singleton pregnancy.

Exclusion criteria- All pregnant women less than 28 week of gestation and Multiple pregnancy.

### Methodology

On admission, after taking written and informed consent, a complete history including history of present complaint, obstetric history, menstrual history, past medical & surgical history, family history was taken. Information regarding her age, address, socioeconomic status and dietary habits was noted. Special enquiry was made regarding smoking and drug use, history regarding her previous antenatal checkups was noted. General physical examination was done to assess both maternal and fetal condition. Abdominal examination, per speculum and per vaginal examination (when required) was done.

All patients presenting with APH were initially evaluated and categorised in two groups (abruptio placentae and placenta previa) and subsequent management was determined according to the cause, severity and type of bleeding and the gestational age of the pregnancy. All enrolled women were evaluated for

the maternal outcomes including preterm rupture of membranes, preterm labour, gestational hypertension and preeclampsia, malpresentation, postpartum haemorrhage, sepsis, shock, retained placenta, anaemia, DIC, renal failure, multiple blood transfusions, route of delivery – Normal vaginal delivery/ LSCS, ICU admissions, caesarean hysterectomies.

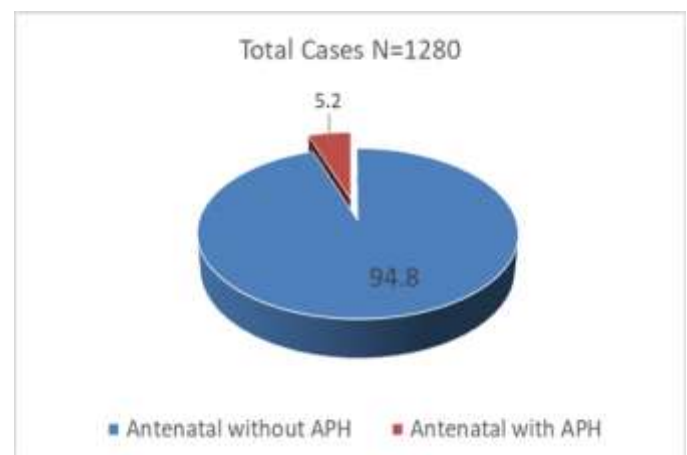
### Statistical analysis

Analysis of collected data was done based on statistical tools and techniques. Data was presented in form of tables and charts and graphs such as bar diagram and pie chart. The collected data was cross checked and entered in Microsoft excel software and was later exported to SPSS for statistical analysis.

### Results

The figure1 shows that out of 1280 cases delivered in our study period 66 cases (5.2%) were diagnosed with Antepartum Haemorrhage. Out of 66 patients of APH delivered, 36 cases(55 %) were abruptio placenta while 30 cases (45 %)were Placenta Previa.

Figure 1:



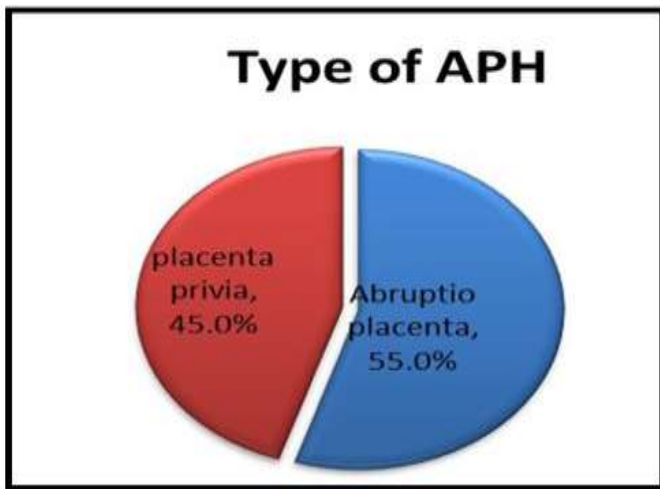


Figure 2: Distribution of patients according predisposing factors

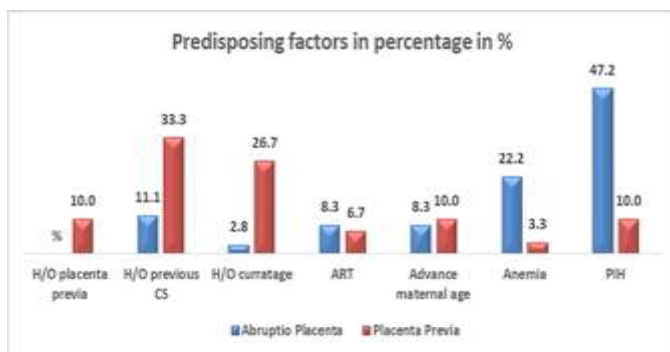


Figure 3: shows that in abruption placenta maximum cases 17 cases (47.2%) had pregnancy Induced hypertension, 4 cases (11.1%) had history of previous caesarean, 1 cases (2.8%) had history of curettage, 3 cases (8.3%) had history of ART, 3 cases

Table 2:

Distribution of patients according to maternal complications						
Maternal complications	Abruptio placenta (n=36)		Placenta previa (n=30)		Total	
	No. of patients	Percentage	No. of patients	Percentage	No. of patients	Percentage
PPH	11	30.6	9	30.0	20	30.3
Shock	13	36.1	7	23.3	20	30.3
DIC	2	5.6	0	0.0	2	3.0
ARF	1	2.8	0	0.0	1	1.5
HELLP syndrome	1	2.8	0	0.0	1	1.5
Deranged liver enzymes	2	5.6	0	0.0	2	3.0

(8.3%) had advanced maternal age, 8 cases (22.2%) had anaemia.

In placenta previa maximum cases 10 cases (33.3%) had history of previous caesarean section, 3 cases (10%) had history of placenta previa in previous pregnancy, 8 cases (26.7%) had history curettage, 2 cases (6.7%) had history of ART, 3 cases (10%) had history of advanced maternal age, 1 case (3.3%) had anaemia, 3 cases (10%) had history of pregnancy induced hypertension.

Table 1: Distribution of patient according to Mode of delivery in the two groups of APH

Mode of delivery	Abruptio placenta (n=36)		Placenta previa (n=30)	
	No. of patients	Percentage	No. of patients	Percentage
LSCS	26	72	30	100
Vaginal	10	28	0	0

- This table shows that among 36 cases of abruption placenta 26 cases (72%) had LSCS and 10 cases (28%) had normal vaginal delivery.
- In 30 cases of placenta previa , all cases (100%) had LSCS.

Coagulation failure	7	19.4	4	11.1	11	16.7
ICU admission	14	38.9	7	19.4	21	31.8
Blood transfusion	25	69.4	13	43.3	38	57.6
Caesarean hysterectomy	1	2.8	1	3.3	2	3.0

This table depicts that in 11 cases (30.6%) of abruptio placenta, Postpartum hemorrhage was observed, 14 cases (38.9%) needed ICU admission, 13 cases (36.1%) had Shock, 7 cases (19.4%) had coagulation failure, 2 cases (5.6%) had Disseminated intravascular coagulation disorder, 2 cases (5.6%) had deranged liver enzymes, 1 case (2.8%) had Acute renal failure, 1 case (2.8%) had HELLP syndrome. □ In placenta previa, PPH was seen in 9 cases (23.3%), in 7 cases (23.3%) shock was

observed, 7 cases (19.4%) needed ICU admission, 4 cases (11.1%) had coagulation failure.

Out of 36 cases of abruptio placenta, 25 cases (69.4%) needed blood transfusion per operatively and only 1 case (2.8%) underwent caesarean hysterectomy. □ Among 30 cases of placenta previa, 13 cases (43.3%) needed blood transfusion while 1 case (3.3%) underwent caesarean hysterectomy.

Table 3: Distribution of patients according to perinatal outcome

Perinatal outcome	Abruptio placenta (n=36)		Placenta previa (n=30)		total (n=66)	
	No. of patients	Percentage	No. of patients	Percentage	No. of patients	Percentage
live birth	28	77.8	30	100.0	58	87.9
IUD	8	22.2	0	0.0	8	12.1

- This table depicts that among 36 cases of abruptio placenta 28 cases (77.8%) had live birth and 8 cases (22.2%) had IUD.
- In placenta previa among 30 cases all cases had live birth and none had IUD.

**Discussion**

This study was conducted at SMS Medical College and Hospital, Jaipur after obtaining approval from institutional research ethical board and written informed consent during the period from Jan 2020 to June 2021. This study was prospective observational study of all the APH patients who were admitted at SMSMC, Obstetrics and Gynecology department after 28 weeks of gestation.

In figure 1, among 1280 deliveries conducted during study period, 66 patients presented with antepartum hemorrhage and thus were included in my study, so

incidence is 5.2%. This is comparable with studies done by Maurya A et al (2014) <sup>(5)</sup> and Pandey VP et al (2016) <sup>(6)</sup> and by Mishara R in Ian Donald‘ Practical Obstetric problems, Bhide A, Thilaganathan B in Recent advances in management of placenta previa. It is also observed that out of total 66 antepartum hemorrhage patients, abruptio placenta group of patients were 36 (55 %) and Placenta Previa group of patients were 30 (45 %). K. Lakshmipriya et al (2019) <sup>(7)</sup> found that incidence of abruptio placentae was 56% and placenta previa was 44%. which is similar to our study.

In figure 3, we discussed distribution of patient according to predisposing factors, the commonest factors in both groups was advanced maternal age 3 cases in both groups, other predisposing factors in abruptio placenta group- pregnancy induced

hypertension (47.2%), anemia (22.2%), previous LSCS (11.1%) , history of curettage (2.8%) , Advanced maternal age (8.3%), ART (8.3%) were present while in placenta previa group were previous curettage (26.7%) , previous LSCS (33.3%), history of placenta previa in previous pregnancy (10%), anemia (3.3%), ART ( 6.7%), pregnancy induced hypertension (10%) were present. Chandnani K et al (2019) <sup>(8)</sup>. Wasnik et al (2015) <sup>(9)</sup>. Majumder S et al (2015) <sup>(10)</sup> found that cause of placenta previa was previous history of curettage in 33.2%, 52%, 12.12% respectively which was comparable with our study. Majumder S et al (2015) <sup>(10)</sup> found that anaemia was found in 75% of patients and pre- eclampsia in 22%, 73% cases were associated with pregnancy induced hypertension. K Lakshmi Priya et al (2019) <sup>(7)</sup> found that 73% cases had history of previous LSCS in placenta previa group which was similar to our study.

In table 1, distribution of patient according to overall mode of delivery was discussed in our study out of 66 cases 56 patients (84.8%) were terminated by LSCS and 10 cases (15.2%) were terminated by vaginal delivery. In abruptio placenta group 26 cases (72%) were terminated by LSCS and 10 cases (28%) had normal vaginal delivery while in Placenta previa group all cases were terminated by LSCS. Wasnik et al (2015) <sup>(9)</sup> found that the incidence of caesarean section is 90% in his study where in placenta previa group 100% Caesarean section were done and in abruptio placenta group 73% LSCS and 27% delivered normally which is comparable with our study.

In table 2 , maternal complications were observed . In abruptio placenta group 11 patients (30.6%) had PPH intra and post operatively , 13 patients (36.1%) had shock, 1 patient (2.8%) had acute renal failure and HELLP syndrome each and 2 patients (5.6%) had DIC

and 7 patients (19.4%) had coagulation failure and due to these complications 14 patients ( 38.9%) had to be admitted in ICU. In placenta previa group 9 patients (30%) had PPH post operatively and 7 patients (23.3%) had shock and 4 patients (11.1%) had coagulation failure, due to these complications 7 patients (19.4%) had to be admitted in ICU.

Sumana et al (2011) <sup>(11)</sup> found that 9% patients in placenta previa group had coagulation failure, which is similar to our study. Kapadia L et al (2017) <sup>(12)</sup> found that PPH (11%) which is different from our study due to emergency cases, DIC (16%) which is comparable with our study.

Table 2 also shows that pre and intra operatively 25 patients (69.4%) in abruptio placenta group and 13 patients (43.3%) in placenta previa group needed blood transfusion and 1 patient in both the groups had to undergo caesarean hysterectomy. In placenta previa caesarean hysterectomy was done as an indication of placenta accrete and in abruptio placenta group caesarean hysterectomy was done due to uncontrolled atonic PPH. Wasnik et al (2015) <sup>(9)</sup> found that 75% of patients required blood transfusion. The very high rates of blood transfusion in present study might be due to the reason that more number of patients were having anemia and had PPH. Tyagi P et al (2016) <sup>(13)</sup> found that PPH was a major intrapartum complication involving 45% cases of APH. 42.5% cases of placenta previa and 57% cases of abruptio placenta. So PPH percentage in abruptio placenta is same but in placenta previa it is less in our study.

Table 3 showed Distribution of patients according to perinatal outcome in abruptio placenta 28 cases (77.8%) had live birth and 8 cases (22.2%) had IUD and in placenta previa among 30 cases all cases had live

birth and none had IUD. In our study, perinatal mortality was zero in placenta previa group due to timely proper management of the patient and more number of booked patient.

### Conclusion

APH is an obstetric emergency, and it is one the most significant cause of maternal and perinatal mortality which can be prevented by early antenatal registration, regular antenatal care, early detection of high-risk cases and early referral to higher centers.

There is no single reliable predictor of timing in pregnancy at which placental abruption may happen but when patient comes with risk factors like pregnancy induced hypertension, special attention should be paid, and timely active management should start when abruption is diagnosed.

Placenta previa can be timely diagnosed by ultrasonohgraphy during routine antenatal checkup and with careful and close monitoring of patient and regular antenatal care, clinician can early diagnose severity of placenta previa and other grave life threatening conditions like Placenta Accreta.

To conclude we recommend that all women with APH should be admitted until the bleeding stops. Pregnant women should receive good facilities for caesarean section, with availability of blood banks and good NICU set up and multidisciplinary approach to improve maternal and perinatal outcome.

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