

## Original Article

### Maternal & Perinatal Outcome in Antepartum Hemorrhage- A Clinical Study

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#### ABSTRACT:

**Background:** Antepartum hemorrhage (APH) is a major cause of maternal and perinatal morbidity and is considered one of the complications of pregnancy. The present study was conducted to find out the incidence of antepartum hemorrhage, maternal and perinatal mortality in comparison to normal pregnancy, risk factors of APH. **Materials & Methods:** The present study included a total of 200 cases in which 100 pregnant women with antepartum hemorrhage (cases) (Group A) and 100 cases of normal pregnancy without any associated complication (control) (Group B) were considered. In all cases, causes of APH, maternal and perinatal complications were recorded. **Results:** Maximum number of patients 44% and 38% belonged to age group 25- 29 years in group B and group A. Maximum patients were of abruption placentae (52%) followed by placenta previa (30%). Maximum number of patients (49%) had first episode of APH between 31- 35 weeks followed by >35 weeks (31%) and 28- 30 weeks (20%). Among the patients maximum number of malpresentations were breech in group A (11%) and group B (10%). Most common maternal complication was post partum hemorrhage seen in 18% in group A and 6% in group B. Shock was seen in 15% in group A and 3% of cases in group B. Prematurity was the most common complication in group A accounts 39% while in group B 18% followed by fetal hypoxia (23% in group A) & (2% in group B) and respiratory distress 20% and 6% in group A and group B respectively. Live birth were 74 in group A and 95 in group B. Perinatal mortality were observed in 26% in group A whereas 5% in group B which shows that perinatal outcome was better in group B as compared to group A. **Conclusion:** Antepartum hemorrhage is a major cause of maternal and perinatal morbidity and mortality which could be prevented by early registration, regular antenatal care, early detection of high risk cases and early referral to higher centre.

**Key words:** Antepartum hemorrhage, Maternal mortality, Perinatal mortality.

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#### INTRODUCTION

Antepartum hemorrhage (APH) is a major cause of maternal and perinatal morbidity and mortality even in modern day obstetrics and is one of the most frequent emergencies in obstetrics. Antepartum hemorrhage (APH) is defined as bleeding from the genital tract from the time of viability of pregnancy for extrauterine survival to the delivery of the baby.<sup>1</sup> APH complicates 3-5% of pregnancies. In a small proportion where placenta previa and abruption have been excluded, the cause may be related to local lesions of the cervix and vagina, e.g., cervicitis, cervical erosion, genital

tumors, vulvar varicosities, ruptured vasa previa and heavy show.<sup>2</sup>

Placenta previa occurs when part or the entire placenta is implanted in the lower uterine segment. In the first and early second trimester, the lower uterine segment is not formed and extends 0.5 to 1cm from the internal cervical os. Abruptio placentae is defined as separation of the normally situated placenta which is initiated by hemorrhage into the deciduas basalis. Other risk factors for placental abruption include: pre-eclampsia, fetal growth restriction, non-vertex presentations, polyhydramnios, advanced maternal age,

multiparity, low body mass index (BMI), pregnancy following assisted reproductive techniques, intrauterine infection, premature rupture of membranes, abdominal trauma, smoking etc.<sup>3</sup>

Fetal complications of APH are premature delivery, low birth weight, birth asphyxia, and intrauterine fetal death. Up to 1/5<sup>th</sup> of very preterm babies are born in association with APH and the known association of APH with cerebral palsy can be explained by preterm delivery. It has been seen that women with unexplained APH are at greater risk of preterm delivery, and their babies are more likely to develop hyperbilirubinemia. Furthermore, women with unexplained APH were more likely to have smaller babies, and this difference remained statistically significant when the birth weight was adjusted for gestational age at delivery and other confounders.<sup>4</sup> The present study was conducted to find out the incidence of antepartum hemorrhage, maternal and perinatal mortality in comparison to normal pregnancy, risk factors of APH and measures for the improvement of its outcome.

## MATERIALS & METHODS

The present study included a total of 200 cases in which 100 pregnant woman with antepartum hemorrhage (cases) (Group A) and 100 cases of normal pregnancy without any associated complication (control) (Group B), admitted in Bebe Nanki Mother and Child care centre, Department of Obstetrics & Gynaecology, Govt. Medical college, Amritsar. All were informed regarding the study and written consent was obtained. Ethical clearance was obtained prior to the study.

Patients with bleeding per vaginum after 28 weeks of gestation and all the cases of hemorrhage in late pregnancy were grouped as placenta previa, accidental hemorrhage,

local causes and unknown. For control group, the normal pregnancy cases without any medical problem like PIH, heart disease, diabetes mellitus, thyroid diseases or any other associated complications and gestation age of the patient >28 weeks were considered.

Patients with the complaint of bleeding per vaginum were carefully examined clinically. The identity, age was recorded. All patients were subjected to Ultrasonography (USG). Ultrasound report showing placenta previa or abruptio placenta was assessed. Details of antenatal check-ups, medical illness, presence of anemia, pre-eclampsia, PIH and other significant illness were recorded.

In all patients malpresentation, non engagement of presenting part and unstable lie in placenta praevia was also noted. Vaginal examination was performed to note any active bleeding, amount of bleeding and colour of blood. Maternal outcomes like hemorrhagic shock, need of resuscitation, need of blood transfusion, need for surgical intervention, PPH, sepsis, ICU admission were noted. Organ dysfunction and maternal mortality and mode of delivery were noted. Blood transfusion related and operative complications were recorded.

Foetal outcome such as perinatal death and NICU admission were recorded. Management of patients was performed according to the standard guidelines, type of antepartum hemorrhage, maternal status at the time of admission. Immediate delivery, induction, caesarean section or conservative procedure was done based on maternal/ foetal condition and period of gestation.

Results thus obtained were subjected to statistical analysis for correct inferences using chi-square test, fisher's exact test. P value less than 0.05 was considered.

## RESULTS

**Table I** Age wise distribution in both groups

AGE GROUP (Years)	GROUP A (n= 100) %	GROUP B (n= 100) %	TOTAL (n= 200) %	P VALUE
20-24	7 7%	30 30%	37 18.5%	0.05
25-29	38 38%	44 44%	82 41%	
30-34	40 40%	21 21%	61 30.5%	
>35	15 15%	7 7%	22 11%	
Mean± S.D	30.37± 3.79	27.29± 4.01	57.66±7.80	
Total	100	100	200	

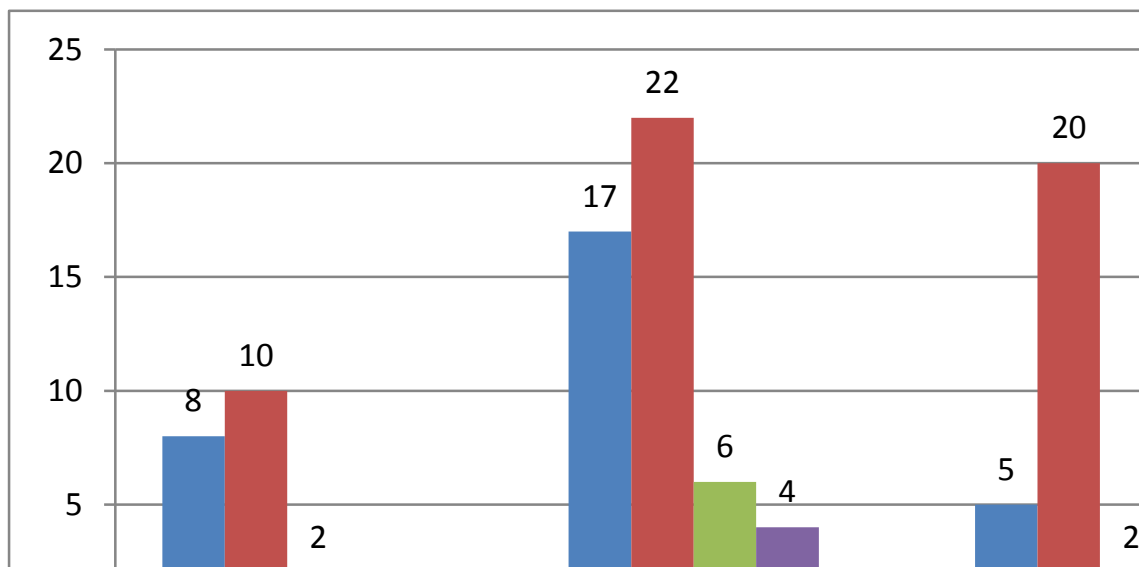
Table I shows that maximum number of patients 44% and 38% belonged to age group 25- 29 years in group B and group A respectively followed by 40% and 21% in age group 30- 34 years in group A and group B respectively. 30% and 7% patients belonged to age group 20- 24 years in group B and A respectively followed by minimum number of patients belonged to age group >35 years includes 15% in group A and 7% in group B. Chi-square test showed significant difference (P< 0.05).

**Table 2** Causes of APH/ grade/ types

CAUSES		NUMBER OF CASES %	TOTAL
<b>Placenta Previa Types (n= 30) %</b>	Type I	6 20%	30 30%
	Type II	4 13.4%	
	Type III	7 23.4%	
	Type IV	11 36.7%	
	Type IV+ A°	2 6.67%	
<b>Abruptio Placentae Grade (n= 52) %</b>	Grade 1	16 30.7%	52 52%
	Grade 2	32 61.5%	
	Grade 3	4 7.7%	
<b>Undetermined (n= 10) %</b>		10 10%	10 10%
<b>Local causes (n= 6) %</b>		6 6%	6 6%
<b>Vasa Previa (n= 2) %</b>		2 2%	2 2%
<b>Total</b>		100%	100%

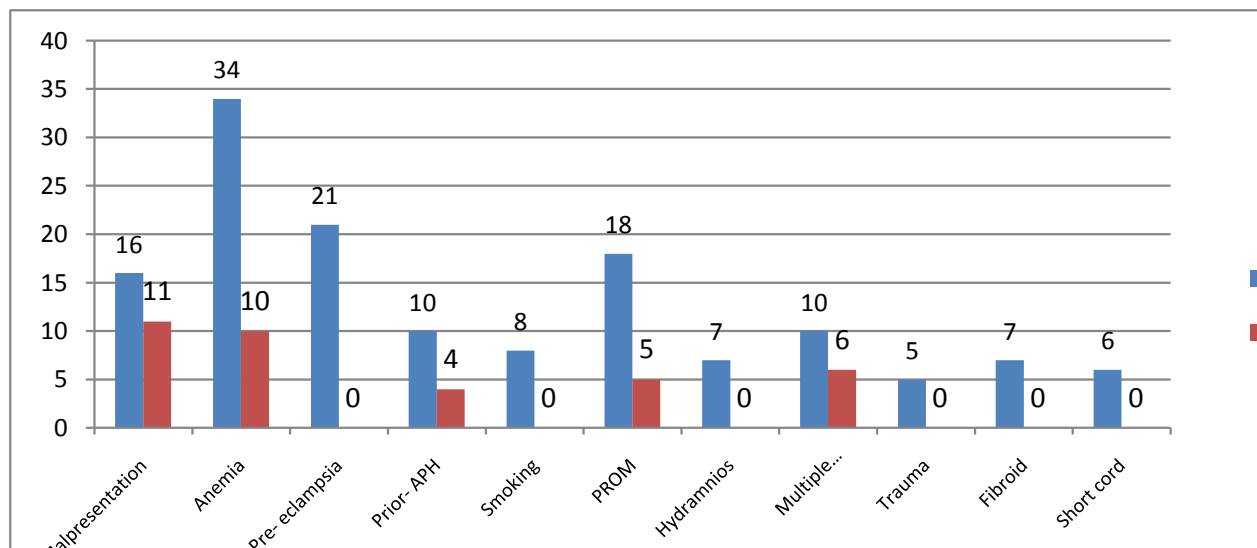
Among causes of APH, maximum patients were of abruption placentae (52%) followed by placenta previa (30%). Out of 52 patients of abruption placenta, 61.5% of patients had grade 2, 30.7% grade 1 and 7.7% grade 3. 10 patients were of undetermined, 6 of local causes and 2 of vasa previa. Out of 30 cases of placenta previa, maximum number of patients showed type IV placenta previa (36.7%) followed by type III (23.4%), type I (20%) and type II (13.4%) respectively. 6.67% patients had type IV placenta previa with Accreta.

**Graph I** Time of bleeding in APH



In present study maximum number of patients (49%) had first episode of APH between 31- 35 weeks followed by >35 weeks (31%) and 28- 30 weeks (20%). Chi- square test showed non- significant difference (p> 0.05).

**Graph II** Associated risk factors



Graph II shows that among the patients maximum number of malpresentations were breech in group A (11%) and group B (10%). Group A showed maximum number of anemic patients (34%) while group B had 10% of anemic patients. Group A showed 21% of pre- eclampsia cases. Similarly, group A showed risk factors of smoking (8%), prior APH (10%), PROM (18%), hydramnios (7%), multiple pregnancy (10%), trauma (5%), fibroid (7%) and short cord (6%) while in group B these risk factors are not of much account. Chi- square test showed significant difference (p< 0.05).

**Table 3** Maternal complications

COMPLICATIONS	GROUP A	GROUP B	P value
Post partum hemorrhage (PPH)	8	6	0.05
Disseminated intravascular coagulation (DIC)	5	1	
Renal failure	2	0	
Retained placenta	2	0	
Couvelaire uterus	5	0	
Sepsis	4	1	
Cesarean hysterectomy	4	1	
Placenta accrete	2	0	
Shock	15	3	
<b>TOTAL</b>	<b>57</b>	<b>12</b>	

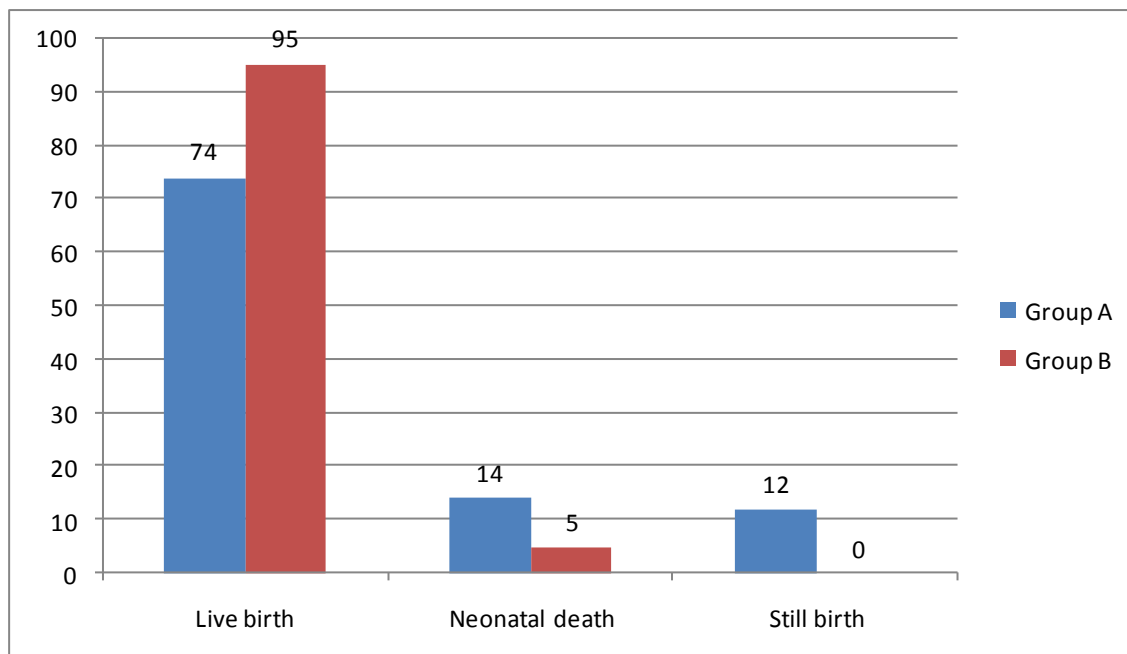
Most common maternal complication was post partum hemorrhage seen in 18% in group A and 6% in group B. Shock was seen in 15% in group A and 3% of cases in group B. Disseminated intravascular coagulation and couvelaire uterus was more commonly present in group A. 2 cases of placenta Accreta were present in group A. Sepsis was seen in 4% patients in group A compared to 1% in group B. Chi- square test revealed significant difference (P< 0.05) of different maternal complications in group A.

**Table 4** Neonatal complications

COMPLICATIONS	GROUP A	GROUP B	TOTAL
Fetal hypoxia	23	2	25
Respiratory distress	20	6	26
Prematurity	39	18	57
Jaundice	8	1	9
Shock	2	0	2
<b>Total</b>	<b>92</b>	<b>27</b>	<b>119</b>

Prematurity was the most common complication in group A accounts 39% while in group B 18% in the present study followed by fetal hypoxia (23% in group A) & (2% in group B) and respiratory distress 20% and 6% in group A and group B respectively.

**Graph III** Perinatal outcome



In present study live birth were 74 in group A and 95 in group B. Perinatal mortality were observed in 26% in group A whereas 5% in group B which shows that perinatal outcome was better in group B as compared to group A. Chi- square showed significant difference ( $p < 0.05$ ).

**DISCUSSION**

APH is considered a major complication of pregnancy. In this study we classified patients into 4 age group, 20- 24 years, 25- 29 years, 30-34 years and >35 years. We found that maximum number of patients 38% and 44% belonged to age group 25- 29 years in group A and group B respectively followed by 40% and 21% in the age group 30- 34 years in group A and group B respectively. Our results are in agreement with Ananth et al<sup>5</sup> & Bhide et al.<sup>6</sup> Nega et al<sup>7</sup> in their study observed that 66.7% of patients belonged to age group 21-34 years and 19.5% younger to 20 years.

In our study majority of cases of APH were due to abruption placentae 52% followed by placenta previa 30%, 10% undetermined, 6% local causes and 2% vasa previa which is close to the studies done by Maurya et al<sup>8</sup> and Eniola et al.<sup>9</sup> In the present study maximum number of patients (49%) had first episode of APH between 31- 35 weeks followed by first episode at >35 weeks (31%) and 28- 30 weeks (20%). According to Crenshaw et al<sup>10</sup> one third of the patients had first episode of bleeding below 30 weeks of gestation, one third from 30 to 35 weeks and on third above 36 weeks.

Considering the risk factors, we found that maximum number of malpresentations were 16% in group A and 11% in group B. In a study by Bener et al<sup>11</sup>, 2.4% had malpresentations. Other risk factor was anemia seen in 34%

in group A while 10% in group B. We found that group A showed 21% of pre- eclampsia cases. Rajini et al<sup>12</sup> reported 40% pre- eclampsia cases and 32% had anemia.

The present study showed other associated conditions ie hydramnios (7%), multiple pregnancy (10%), fibroid (7%) and short cord (6%) in group A. Deok et al<sup>13</sup> in their study reported PROM in 4.1% of patients. In our study, it was seen in 18% patients in group A. Mercer<sup>14</sup> suggested that preterm premature rupture of membranes (PPROM) occurs in 3% of pregnancies and is responsible for one third of all preterm births. Approximately 12 % of patients with preterm PROM develop placental abruption.

Other common maternal complication was shock was seen in 15% in group A and 3% of cases in group B. Menon<sup>15</sup> in his study reported 58% cases of shock. Disseminated intravascular coagulation and couvelaire uterus was more commonly present in group A. 2 cases of placenta Accreta were present in group A. Sepsis was seen in 4% patients in group A compared to 1% in group B. Samal et al<sup>16</sup> in their study reported DIC in 6 patients. In the present study cesarean hysterectomy was done in 4 patients in group A and 1 in group B. Similarly, Samal et al<sup>16</sup> reported 4 cases of cesarean hysterectomy. There were 2 cases of renal failure and retained placenta each.

The present study showed that there were 11 maternal deaths in group A and 2 maternal deaths in group B. The most common cause of maternal death in group A was

renal failure due to hemorrhagic shock and DIC leading to multiorgan failure and sudden cardiac arrest. Maternal death in group B was due to PPH with hemorrhagic shock followed by cardiac arrest. Jejani<sup>17</sup> found 1.8% maternal mortality.

In this study prematurity was the most common complication in group A (39%) and group B (18%). Fetal hypoxia was seen in 23% in group A and 2% in group B and respiratory distress 20% and 6% in group A and group B respectively. We found 8 cases of jaundice in group A and 1 case in group B. Calleja-Agius et al<sup>18</sup> found 29.1% cases of shock. Jejani et al<sup>17</sup> also found prematurity as a common occurring neonatal complication (50.9%). 16% respiratory distress was seen in study by Sneha et al<sup>19</sup> & Adelanke et al.<sup>20</sup> In the present study, live birth were 74% in group A and 95% in group B. Perinatal death were observed in 26% in group A whereas 5% in group B which shows that perinatal outcome was better in group B as compared to group A.

### CONCLUSION

Antepartum hemorrhage is a major cause of maternal and perinatal morbidity and mortality which could be prevented by early registration, regular antenatal care, early detection of high risk cases and early referral to higher centre. Good 24X7 hours facilities for cesarean section, trained medical and paramedical staff, availability of blood and its components and neonatal intensive care unit can help to improve maternal and foetal outcome.

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