

## “Maternal and Perinatal Outcome in Preterm Placenta Praevia”

Dr. Farzana Parvin<sup>1\*</sup>, Dr. Rifat Ara Liza<sup>1</sup>, Dr. Wohiduzzaman<sup>2</sup>

<sup>1</sup>Assistant Professor, Department of Obstetrics and Gynaecology, Addin Sakina Women's Medical College, Jashore, Bangladesh

<sup>2</sup>Junior Consultant Surgery, Department of Obstetrics and Gynaecology, 250 Bed General Hospital, Jhenaidah, Bangladesh

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\*Corresponding author: Dr. Farzana Parvin

Assistant Professor, Department of Obstetrics and Gynaecology, Addin Sakina Women's Medical College, Jashore, Bangladesh

### Abstract

**Introduction:** Placenta previa (PP) is a significant cause of maternal and fetal morbidity and mortality worldwide. However, there is limited data from developing countries on the maternal and fetal outcomes and complications associated with placenta previa. **Aim of the study:** The aim of this study was to evaluate maternal and perinatal outcome in preterm placenta praevia. **Methods:** This prospective observational study was conducted in the Department of Gynae and Obstetrics of Dhaka Medical College Hospital, Dhaka, Bangladesh during the period from March 2010 to August 2010. **Result:** Total 66 patients were diagnosed with placenta previa. We found, the majority (42%) of participants were aged between 26-30 years and with lower socio-economic status significantly associated with higher prevalence due to lack of regular antenatal care. The majority were admitted at 35-37 weeks gestation, with the highest perinatal loss occurring before 30 weeks. Initial bleeding was generally small, and many presented with labor pain and anemia. Ultrasonography diagnosed 55% of cases, with cesarean sections frequently used, leading to better outcomes compared to vaginal deliveries. Severe postpartum complications like hemorrhage and urinary tract infections were common in more severe cases. **Conclusion:** Placenta previa is a major cause of maternal and perinatal morbidity and mortality. Early registration, regular antenatal care, early detection of high-risk cases, and timely referral to higher centers with good NICU services and blood bank facilities can help prevent these adverse outcomes.

**Keywords:** Placenta previa, Antepartum haemorrhage, Postpartum haemorrhage, Maternal and Perinatal outcome.

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## INTRODUCTION

Pregnancy outcomes are not only important measures of the health status of mothers and infants but are important measures of socioeconomic development in a society. For example, infant mortality has been considered the single most comprehensive measure of the health and wealth in a society [1].

Placenta praevia usually presents with life-threatening vaginal bleeding and requires immediate cesarean section and delivery [2]. Placenta praevia is a common obstetrical problem associated with considerable maternal and fetal morbidity and mortality. It is frequently associated with antepartum haemorrhage and is a precipitating factor for preterm labour. Exact etiology is unknown but the risk factors are advancing maternal age, multiparity, previous pregnancy with placenta praevia, previous caesarean sections, post-abortal pregnancies, or pregnancy with multiple gestation. Painless bleeding in the second half of

pregnancy is the cardinal sign of placenta praevia in 70-80% of patients [3].

Bleeding from placenta praevia is one of the most acute, life-threatening emergencies in obstetric practice. The potential maternal and neonatal morbidity and mortality associated with this condition have generated a lot of concern among practicing clinicians. Failure to recognize the condition and manage the associated complications, particularly the massive obstetric hemorrhage, has led to most cases of avoidable maternal deaths. In the confidential inquiries into maternal deaths in the United Kingdom (1994-1996), 50% of deaths due to hemorrhage were related to abruption placenta and placenta praevia, of which the danger of bleeding from placenta praevia in a scarred uterus was undeniable [4].

Placenta praevia is one the most common causes of antepartum haemorrhage which is 3-4% and

placenta praevia occurs in 0.8% of pregnancies and accounts for 22% of all antenatal haemorrhage [3]. Placenta praevia refers to the placenta that is situated wholly or partially in the lower uterine segment at or after 28 weeks of gestation. Before 28 weeks, the placenta may be situated in or close to the developing lower segment and is described as low-lying. Most of the low-lying placenta will not become the placenta praevia [3].

Fetal death may occur either antepartum or intrapartum. Although few studies of risk factors have made this distinction, maternal smoking, and drug use, prenatal care (e.g., time and content of prenatal visit to care providers and genetic screening, etc.) has a larger impact on antepartum fetal death, while intrapartum care (e.g., intrapartum fetal surveillance, cesarean delivery, etc.) has a larger impact on intrapartum, and fetal death. An increase in the intrapartum fetal death rate may be an important contributing factor to the higher perinatal mortality rate reported in developing countries [5].

Baby suffers more. Babies are already asphyxiated due to antepartum haemorrhage with added prematurity causes the incidence of perinatal morbidity & mortality & decreases the chance of survival Even a caesarian section is done for stillborn babies as a life-saving procedure.

Maternal morbidities & mortalities are also high in preterm placenta praevia. Poor formation of the lower segment, morbid adhesion of the placenta with difficulties in separation, and poor contractility of the lower segment as well as the upper segment carries high risks of developing profuse bleeding and associated malpresentation also causes difficulties in delivering the baby.

Diagnosis is usually made by transabdominal ultrasonography. False-positive diagnoses are common in the second trimester and the term "potential placenta previa" has been proposed to describe this situation. Management of placenta previa is expectant and involves avoidance of digital vaginal examination, delay of delivery until 36 weeks gestation and/or documented fetal lung maturity, transfusion support to maintain maternal hematocrit greater than or equal to 60%, serial ultrasonography, antepartum fetal heart rate monitoring, glucocorticoids, tocolytic therapy, and elective delivery by cesarean section. Perinatal mortality is currently 4% to 8% primarily related to complications of prematurity [6]. This study was aimed at determining the maternal and perinatal outcomes of preterm placenta praevia in our population.

## Objectives

The objective of this study was to evaluate maternal and perinatal outcome in preterm placenta praevia.

## METHODOLOGY & MATERIALS

This was a prospective observational study and was conducted in the Department of Gynae and Obstetrics of Dhaka Medical College Hospital, Dhaka, Bangladesh during the period from March 2010 to August 2010. A total of 66 cases of preterm placenta praevia were included in the study.

### • Inclusion criteria:

- Patients giving consent and willing to comply with the study.
- All preterm placenta praevia: Pregnancy more than 28 weeks and less than 37 complete weeks.

### • Exclusion criteria:

- Patients not giving consent and unwilling to comply with the study.

A standardized semi-structured data collection sheet was used to collect necessary information and face to face interview. Necessary information was collected by reviewing related medical reports. A semi structured questionnaire was developed in English. The questionnaire was developed using the selected variables according to the objectives. The questionnaire contained questions related to socio-demographic characteristics, preoperative and post-operative outcomes. To record desired variables from admission record, history sheet and related medical records. Data were checked immediately after completing interview and review of necessary investigation reports. All relevant data were collected from each respondent by use of an interview schedule and investigations in a predesigned format. Patients were given full autonomy to participate in the study and informed written consent was obtained.

### Statistical Analysis:

All data were recorded systematically in preformed data collection form and quantitative data was expressed as mean and standard deviation and qualitative data was expressed as frequency distribution and percentage. Statistical analysis was carried out by using Statistical analysis was done by using SPSS (Statistical Package for Social Science) Version 15 for windows 10. P value <0.05 was considered as statistically significant. Ethical clearance was obtained from the ethical committee of Bangladesh College of Physician and Surgeons to perform the investigation and study.

## RESULT

**Table 1: Demographic characteristics of the respondents**

Characteristics		Number	Percentage
Age	20-25	18	28%
	26-30	28	42%
	31-35	12	18%
	>35	8	12%
Socio-economic status	Lower	46	70%
	Middle	16	24%
	Upper	4	6%

Table 1 shows that demographic characteristics of the respondents. We found maternal age in this study ranged from 20 years to 45 years. Major percentage belonged to 26-30 years age group, which was about 42%. More than 35% years was 12%. In terms of Socio-economic status, patient with lower socio-economic

condition (70%) usually suffered from placenta praevia more than the middle and upper class. Patients of low socio-economic condition of our country usually have more children and had no regular antenatal check-up than that of upper and middle class.

**Table 2: Gestational age at first bleeding episode and Perinatal loss**

Gestational age (weeks)	Number of patients (n=66) (%)	Perinatal loss (n=10) (%)
<30	16 (24%)	7 (59%)
30-34	24 (36%)	4 (33%)
35 to 37	26 (40%)	1 (8%)

Table 2 shows that gestational age at first bleeding episode and perinatal loss. The maximum number of cases were admitted at the gestational period

of 35 to 37 weeks. Highest perinatal loss occurred 59% in first episode of bleeding less than 30 weeks of gestation.

**Table 3: Clinical Presentation of the respondents**

Clinical Presentation	Number	Percentage
In labour, (n=29)	Haemorrhage with shock	11 (17%)
	Haemorrhage without shock	18 (27%)
Without labour, (n=37)	Haemorrhage with shock	5 (8%)
	Haemorrhage without shock	22 (33%)
	No haemorrhage	10 (15%)
Amount of blood loss	Small	37 (63.63%)
	Heavy	21 (36.36%)
History of bleeding	1st trimester ( $\leq 12$ weeks)	2 (3%)
	2nd trimester (13-27 weeks)	13 (20%)
Activity of patients	Resting in bed/sleeping	34 (51.51%)
	sitting/cooking	16 (24.24%)
	In toilet	5 (7.5%)
	travel	3 (4.54%)
Severity of anaemia	Mild	19 (29%)
	Moderate	32 (48%)
	Severe	15 (23%)
Presentation of foetus	Cephalic	53 (80%)
	Shoulder	5 (8%)
	Breech	8 (12%)

Table 3 shows the clinical presentation of the respondents. 44% of patients came with labor pain and 17% of them were in hypovolaemic shock from haemorrhage on admission. We found that a majority (63.63%) of patients presented with a small amount of blood loss at the first episode. In cases of placenta praevia, initial bleeding is usually small. In this study, 15

patients had a history of bleeding in the first and second trimester of pregnancy. Second-trimester vaginal bleeding was seen in 20% of the cases, indicating low-lying placenta in those cases. Among the cases, bleeding started spontaneously when the patients (52%) were in bed not related to any activity. Most of the patients (71%) with placenta praevia came with a moderate to severe

degree of anemia at the time of admission. Complications among the anemic patients were more than non-anaemic or mildly anemic patients.

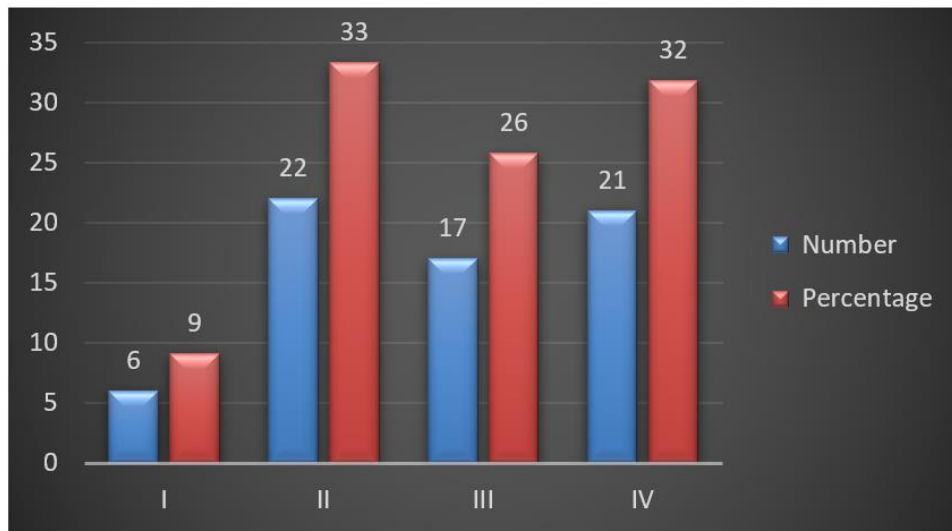
Malpresentation was seen in 20% of the cases. In certain cases, foetal malpresentation was the only clue to the diagnosis of placenta praevia.

**Table 4: Method of Diagnosis of the respondents**

Diagnosis		Number	Percentage
Method	Ultrasonography	36	55%
	During caesarean section	28	42%
	Double set up	2	3%
Unit of blood	0	7	10%
	1	12	19%
	2	27	42%
	4-Mar	13	23%
	≥5	4 (6%)	6%

Table 4 shows the method of diagnosis of the respondents. In this study, 55% of patients were diagnosed to have placenta praevia by ultrasonography, 42% of patients were diagnosed during caesarean section and only in 3% of cases vaginal examination was done

in OT for confirmatory diagnosis and typing of placenta praevia. During hospital stay, only 10% of patients did not receive any blood transfusion, 42% of patients received 2 units of blood and 6% received more than 5 units of blood.



**Figure 1: Type of Placenta Praevia of the respondents (n=66)**

Figure 1 shows that type of placenta praevia. In this study 33% placenta praevia cases belonged to type-II group, 26% and 32% were of type-III respectively.

**Table 5: Relationship between mode of management and type of placenta previa affects the mode of delivery and foetal outcomes**

Variable	Mode of delivery		Perinatal mortality	
	Caesarean section	Vaginal	Still birth	Neonatal loss
<b>Mode of management</b>				
Expectant (n=22)	20	2	3 (30%)	
Active (n=44)	40	4	7 (70%)	
<b>Type of Placenta Praevia</b>			<b>Still birth</b>	<b>Neonatal loss</b>
I (n=6)	3	3	0	1
II (n=22)	19	3	0	3
III (n=17)	16	1	1	2
IV (n=21)	21	0	2	1

Table 5 shows that relationship between mode of management and type of placenta previa affects the

mode of delivery and foetal outcomes. In this study 30% patients were managed expectantly. In this group number

of caesarean sections were relatively more than those of actively treated patients. The incidence of perinatal death and maternal mortality were much lower in expectantly managed patients. In this series 11% patients delivered

vaginally and 89% patients were delivered by caesarean section. The mortality was high with more severe degree of placenta praevia.

**Table 6: Relationship between mode of delivery and foetal outcome**

Mode of delivery		Total no. of babies	Live birth	Neonatal death (%)	Still birth (%)
Caesarean section		59	52	4	3
Vaginal	Spontaneous	7	3	2	2
	Instrumental	2	1	1	1

Table 6 shows that relation between mode of delivery and foetal outcome. Caesarean section was done on 59 cases and vaginal delivery was allowed in 7 cases.

Those in whom vaginal delivery were allowed, perinatal deaths were more as compared to that with operative delivery.

**Table 7: Relation of perinatal loss by gestational age and birth weight**

Weight (gm)	Weeks of gestations						Total patients	Perinatal mortality (%)
	28 or 30		30-34		35-37			
	No.	Perinatal loss (%)	No.	Perinatal loss (%)	No.	Perinatal loss (%)		
1000-1500	2	2 (100%)	0	0	0	0	2	100%
1501-2000	3	1 (33%)	25	1 (12.5%)	2	0	30	13.51%
2001-2500	8	1 (12.5%)	6	1 (16.65%)	15	0	30	2.23%
2501-3000	0	0	2	0	2	0	2	0
3001-3500	0	0	2	0	2	0	7	0

Table 7 shows that relation of perinatal loss by gestational age and birth weight. In this study majority of the fetus were born  $\leq 35$  weeks (66%) and thus most

of the fetuses were low birth weight and their mortality rate were very high. All the babies of birth weight 100-1500 gm were lost perinatally (100%).

**Table 8: Postpartum complications in relation to type of placenta praevia (n=20)**

Postpartum complications	Type					
	I	II		III	IV	Percentage (%)
		Anterior	Posterior			
PPH	0	0	2	2	6	5%
Puerperal sepsis	0	0	0	0	1	2%
UTI	0	1	1	2	2	4%
Wound infection	0	0	0	1	2	9%

Table 8 shows that postpartum complications in relation to type of placenta praevia. Twenty cases have some sort of postpartum complications. Postpartum haemorrhage (PPH) and urinary tract infection (UTI) are

two most common postpartum complications. Postpartum complications were common among type- III and type IV placenta praevia.

**Table 9: Relationship between the severity of bleeding and foetal and maternal outcome**

Amount of bleeding	No. of patients	Perinatal loss		Maternal outcome	
		Still birth no. (%)	Neonatal loss no. (%)	Morbidity	Mortality
Nil/ Mild	20	0	0	5%	0
Moderate	36	2 (3%)	3 (8%)	10%	0
Severe	10	2 (35%)	2 (3%)	14%	0

Table 9 shows that the severity of bleeding and foetal and maternal outcome. Perinatal mortality was high with severe bleeding about 13% of total perinatal losses. Severe bleeding was also associated with higher maternal morbidity and there was no maternal mortality in this study.

## DISCUSSION

Placenta previa is one of the grave obstetric hazards contributing significantly to the leading causes of maternal death and perinatal loss in developing countries. Management today is aimed at delivery of as mature a baby as possible without significantly jeopardizing the safety of the mother or the foetus [7].



Many changes have occurred to improve the outcome for the mother and the baby. These changes include the increasing safety of caesarean section, availability and use of blood products, use of ultrasonography for diagnosis, foetal lung maturity studies and dramatic changes in neonatal intensive care. However, bleeding can still be a life-threatening problem.

In developing country, such as ours there is very little scope for the application of conservative management of Macafee. Patients generally report to the emergency department for the first time with moderate to severe degree of per vaginal haemorrhage having had no previous antenatal checkup. Hence the outcome of pregnancy gives a very poor outlook both for the mother and also for the foetus.

About one-third causes of antepartum haemorrhage belong to placenta previa. The incidence of placenta previa ranges from 0.5-1% among hospital deliveries.<sup>8</sup> In this study it shows that the incidence of placenta previa is about 1.32%.

Yang *et al.*, [9] retrospectively studied the association between placenta previa with maternal race and its variations by country of origin among Asian women. They analyzed data from a population-based retrospective cohort study of 1 6751,627 pregnancies in the US. The data were derived from the national linked birth/infant mortality database for the period 1995-2000. In their study about 3.3 per 1,000 pregnancies were complicated with placenta previa among white women, while the corresponding figures for black women and women for other races were 3.0 and 4.5 per 1,000 pregnancies, respectively. The frequencies of placenta previa among Chinese, Japanese, Filipino, Asian Indian, Korean, Vietnamese and other Asian or Pacific Islander were 5.6, 5.1, 7.6, 4.5, 5.9, 4.4 and 4.4 per 1,000 pregnancies, respectively. The adjusted odds ratios ranged from 1.39 to 2.15 among Asian women by country of origin, with the lowest for Japanese and Vietnamese and the highest for Filipino women in our study. They concluded that Asian women have excess risk of placenta previa compared with white women. Major variation exists in placenta previa risk among Asian women, with the lowest risk in Japanese and Vietnamese women and the highest risk in Filipino women.

Age is a significant factor in the development of placenta previa. Women above 35 years of age have a 2-3 times higher risk compared to those under 20 years old. Zhang *et al.*, demonstrated that advancing maternal age independently increases the likelihood of placenta previa, regardless of other factors. Physiologically, as women age, collagen replaces muscle in uterine arteries, leading to sclerotic lesions that can restrict artery diameter and blood flow to the placenta. These age-related changes may contribute to defective

vascularization, potentially contributing to the development of placenta previa [10].

In this study 70% of patients with placenta previa were in lower socioeconomic class.

Davood *et al.*, [11] investigated placenta previa in a retrospective study involving 93 cases and 940 controls. They found multiparity (78.5%), male infant prevalence (76.6%), and lower fetal weights (<2500g in 40.9%) associated with placenta previa. Risk factors included previous abortion (OR=0.7; 95% CI=0.57-0.83) and previous placenta previa (OR=5.17; 95% CI=3.91-33.41). Newborns from placenta previa pregnancies often had lower Apgar scores (<7 at 5 minutes in 24.7%).

Kistner *et al.*, and Bender first suggested that a uterine scar could predispose to the development of placenta previa in subsequent pregnancies. The incidence of placenta previa was 0.75% among those with an unscarred uterus compared with 1.31% in those with a previous caesarean section [12]. In present series 24% patients had history of previous caesarean section. In this study history of previous abortion about 12%. Thom DH *et al.*, have shown that the woman with 3 or more prior spontaneous abortion had elevated risk of placenta praevia [13]. Clark (1985) has shown that the risk of placenta praevia is 0.26% in those with an unscarred uterus and 10% in those with 4 or more prior incisions. Salma Rouf *et al.*, has shown that relative risk of placenta previa increases with previous caesarean section (1.06%) and if 2 or more section, it increases to 5.28% [14].

Gestational age at first episode of bleeding is a very important factor in relation to maternal morbidity and perinatal mortality. According to Crenshaw *et al.*, approximately one third of patients with placenta previa have their first bleeding episode before 30 weeks of gestation, one third from 30 to 35 weeks. The mean gestation age at first bleeding episode is 29.6 weeks.

In this study 24% patients with placenta previa had the history of first episode of bleeding <30 weeks of gestation, but most 60.23% of the patients had bleeding episode were in between 30 to <35 weeks. The earlier in pregnancy the first bleeding occurred, the worse was the outcome of pregnancy. In fact, the incidence of pre-term delivery, the number of bleeding episodes, the severity of the bleeding and the number of units of blood required for blood transfusion were higher in patients who begun to have bleeding before 30 weeks.

In this study 8 patients had no history of bleeding during pregnancy. They were diagnosed as having previa either during antenatal check up by ultrasonography or incidentally during caesarean section. Antepartum haemorrhage may be absent in up to 34% of cases of placenta previa. The bleeding of

placenta previa is absolutely painless unless a woman has gone in labour. Spontaneous first haemorrhage associated with placenta previa is usually not severe (the “warning haemorrhage”), although this is not invariable and on occasion the first bleed is considerable [15]. What small the initial haemorrhage may be. Every case of antepartum haemorrhage is to be regarded as due to placenta previa until, the contrary has been proven, because in this event further bleeding is bound to occur sooner or later and none can predict its severity [16].

Munro Kerr, Macafee, Joyce Morgan recorded that the warning haemorrhage occurred in 33%, 15% and 19% of patients respectively with placenta previa [17].

In this study 58 patients had history of 1 to 4 episodes of bleeding (warning haemorrhage was in about 29%). But the number of bleeding episode does not correlate with the total amount of blood loss [15].

Hibbard LT, [18] shown that the total number of bleeding episodes in pregnancy may not affect prognosis, the total amount of bleeding is crucial. Vaginal bleeding at any stage of pregnancy is a significant concern for both patients and doctors. In this study, the majority of patients did not experience bleeding in the first trimester, but 20% experienced vaginal bleeding during the second trimester.

Usually, bleeding was not associated with any kind of activity. Maximum patients 52% started bleeding during resting in bed or in sleeping condition. Developing countries like ours the patients are sometimes referred to the hospital after multiple bouts of bleeding and in exsanguinated condition. In this study 88% patients had history of vaginal bleeding out of them 59% patients came to the hospital within 24 hours. But rest of the patients came after that period.

In this study of placenta previa, most patients presented with moderate to severe anemia upon admission. Complications were more common in this group compared to non-anemic or mildly anemic patients.

In this study 44% patients came with labour pain; among them 17% patients were in hypovolaemic shock from haemorrhage on admission. 56% patients came without labour pain. The patients who came with haemorrhage and shock-their prognosis were bad in terms of maternal morbidity and as well as perinatal mortality.

Association of mal-presentation is common in placenta praevia, however mal-presentation are the result rather than the cause of low placental implantation. In this study 12.2% cases had breech presentation. 57% shoulder presentation and 80% patients had cephalic presentation. No specific congenital abnormality of foetus detected.

In this study, 36 patients were diagnosed via ultrasound, while the remaining 57 were diagnosed either through double-setup examination in the operating theater (3%) or during cesarean section (42%). With advancements in ultrasound technology, the need for the double-setup examination has significantly decreased over time.

The ultrasound diagnosis is best achieved by direct visualization of placental edge in relation to internal cervical os. However, it may be difficult in case of posterior placenta praevia because the presenting foetal part may obscure the lower uterine segment in upto 23% of the scan [19]. To overcome this sort of problem trans vaginal sonography with high frequency transducer was introduced in 1987 for diagnosis of placenta previa. According to the study done by Sherman *et al.*, suggest that trans vaginal sonography was most beneficial for those patients with posterior placenta previa, because of increased of haemorrhage [20] now a days 3 dimensional colour Doppler imaging in the assessment of utero-placental neo-vascularization in placenta previa increta and percreta is used [21].

Macfee (1945) initially advocated conservative management for placenta previa, emphasizing inpatient care in a well-equipped hospital from diagnosis until delivery. It's crucial to recognize that expectant management, while viable, has its limitations and should not be pursued to the extent that jeopardizes the mother's life [22].

In this study, maximum cases (33%) had type-II placenta previa and 32% belong to type-IV, 26% cases to type-III and 9% cases type-I. placenta previa major cases were associated with worse prognosis.

In this study, 59 patients were delivered by caesarean section and 7 were delivered by vaginal route. Those in whom vaginal delivery was allowed perinatal deaths were more (about 50%) as compared to that operative delivery (about 34%). Perinatal mortality as related to mode of delivery is seen in literature review where loss is more in vaginal delivery than abdominal delivery [10,23].

Zlatnik *et al.*, [24] conducted a retrospective cohort study on placenta previa, involving 38,540 singleton births. They found that placenta previa was associated with significantly higher rates of preterm delivery (before 28 weeks: 3.5% vs. 1.3%, before 32 weeks: 11.7% vs. 2.5%, before 37 weeks: 16.1% vs. 3.0%), postpartum hemorrhage (59.7% vs. 17.3%), and blood transfusion (11.8% vs. 1.1%) compared to controls. They concluded that placenta previa increases risks of maternal and neonatal complications, providing valuable information for patient counseling.

Ananth *et al.*, [25] conducted a retrospective cohort study on placenta previa, finding a prevalence of

2.8 per 1,000 live births. They observed significantly higher neonatal mortality rates (10.7 per 1,000) compared to pregnancies without placenta previa (2.5 per 1,000), with a relative risk of 4.3. Babies born to women with placenta previa at 28 to 36 weeks had lower birth weights by 210 grams on average. They highlighted an increased risk of neonatal mortality for babies born to women with placenta previa after 37 weeks of gestation, emphasizing the importance of careful monitoring in these pregnancies.

In this study 20 cases had some sort of postpartum complications. PPH and UTI were two most common complications which were about 15% and 4% respectively. Post-partum complications were common among type-III and type-IV placenta previa. The patient who presented at an early date with small amount of bleeding and minimal morbidity. Moderate to severe bleeding associated with higher maternal morbidity.

Crane *et al.*, [26] conducted a population-based retrospective cohort study in Nova Scotia, Canada, from 1988 to 1995, focusing on maternal complications of placenta previa. They analyzed data from 93,996 deliveries, identifying a placenta previa prevalence of 0.33%. Maternal complications associated with placenta previa included significantly increased risks of hysterectomy (RR = 33.26), antepartum bleeding (RR = 9.81), intrapartum hemorrhage (RR = 2.48), postpartum hemorrhage (RR = 1.86), blood transfusion (RR = 10.05), septicemia (RR = 5.55), and thrombophlebitis (RR = 4.85). The study concluded that risk factors for requiring hysterectomy in women with placenta previa include placenta accreta and previous cesarean delivery.

Maternal death is a very unfortunate outcome of pregnancy. In different studies of western world maternal mortality is less than those of ours. But in this study no women died during delivery or later on. As it is a tertiary level hospital, we managed the patients who come with hypovolaemic shock efficiently within a very short time, a smaller number of patients are allowed for vaginal delivery and more liberal use of cesarean section.

### Limitations of the study

Our study was a single centre study. Many of the patients could not tell their actual age and exact date of last menstrual period. Scope for investigations particularly in emergency situation were limited. The study was based on a small sample size. So, it does not accurately represent the whole population.

### CONCLUSION

Antepartum hemorrhage is a serious obstetric complication and a major cause of maternal death in our country, exacerbated by widespread poverty, malnutrition, and anemia. Women of low socioeconomic status often have high parity, increasing the risk of placenta praevia. Effective management requires promoting family planning, identifying vulnerable

groups, providing proper antenatal care, and ensuring early diagnosis and treatment. Most patients in our hospital are poor and present with severe bleeding late in pregnancy, often arriving in shock. Immediate resuscitation takes priority, leaving little time for quick investigations. Facilities for ultrasonography and 24-hour emergency care with an anesthetist and trained doctor are essential. Cesarean section is the preferred treatment for major placenta praevia, while minor cases may allow for vaginal delivery. Despite interventions, the perinatal death rate remains high. Timely cesarean sections, reduced blood loss, and proper neonatal care are crucial. Babies of placenta praevia are often premature with low Apgar scores, needing special neonatal care units.

Reducing maternal mortality involves improving maternal health, providing good antenatal care, spacing childbirth, and performing prompt cesarean sections when necessary. Health personnel must be aware of placenta praevia, and an effective emergency referral system should be in place. Extending services to the grassroots level is vital for managing placenta praevia effectively.

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