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Maternal and Perinatal Outcome in Placenta Previa: One Year Study in Enam Medical College Hospital

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Abstract **Original Research Article**

Introduction: Placenta previa is a key risk factor for obstetric hemorrhage particularly occurs in women with a previous uterine scar. It can be defined as an embedding of the placenta in the lower uterine segment, overlying or approaching the internal cervical os. One-third of all cases of APH caused due to placenta previa. ***Aim of the study:*** To assess the maternal complications and perinatal outcomes of patients with placenta previa by analyzing its obstetrical factors. ***Methods:*** This study is a cross-sectional observational study conducted at the Department of Obstetrics and Gynae, in Enam Medical College and Hospital, Savar, Bangladesh. The study was conducted for the duration of 1 year between January 21 to December 21. The sample size for this study was 109. ***Result:*** The most respondents 81(74.3%) were from the age group 25-29 years, 17(16%) were booked and 92(84%) were unbooked. 27(25%) were primi and 82(75%) were multi-para. Pain abdomen was present in only 2(1.8%) cases and absent in most 107(98.2%) cases. LSCS was done in 79(72%) patients and vaginal delivery was done in 30(28%) cases. Type 2b in most of the cases 50(45.9%). Blood transfusion was needed in 20(18.3%) and post hemorrhage was seen in 12(11%). APGAR at birth was 8-10 in 69(63.35) cases, 5-7 in 27(24.8%) cases and <5 in 13(11.9%) cases. ***Conclusion:*** Placenta previa is the main cause of maternal and perinatal morbidity and mortality. Maternal and fetal outcome can be improved by regular antenatal check-up, early diagnosis of case. Management should be done in tertiary care center with neonatal management facility.

Keywords: Placenta Previa, Maternal and Perinatal Outcome.

INTRODUCTION

Placenta previa is a key risk factor for obstetric hemorrhage particularly occurs in women with a previous uterine scar [1]. It can be defined as the embedding of the placenta in the lower uterine segment, overlying or approaching internal cervical OS [2]. One third of all cases of APH caused due to placenta previa [3]. It is classified into four such "complete" (placenta completely covers the internal cervical OS), "partial" (placenta partially covers the OS), "marginal" (lower edge of the placenta just reaches the OS), and "low-lying" (placenta is in the lower segment but does not reach the internal OS) [4]. In singleton and twin pregnancies the prevalence is 2.8/1000 and 3.9/1000 respectively [5]. Generally, the risk factors include high parity, advancing maternal age, previous cesarean section (C/S), cigarette smoking, cocaine usage, multiple pregnancies, history of abortions or uterine surgery which contributes to the development of the placenta previa [6-11]. Besides, marginal sinus bleeding, vasa previa, cord velamentous insertion, battledore placenta, cervicitis, genital trauma, tumors, infections, and coagulation defects are also other risk factors of it [12, 13]. The risk of placenta previa after the post-cesarean section had been reported higher than vaginal delivery [14]. It is predicted that, a rising incidence of C/S along with increasing maternal age, the incidence of placenta previa and its complications like, placenta accreta also increase [15]. The prevalence of placenta previa after the first C/S was higher

(6.9/1000) than in first vaginal deliveries (4.7/1000) [16]. The prevalence of placenta praevia in previous pregnancy also increase the recurrence risk up to 8-10 folds [17]. Many studies reported prematurity as a crucial finding related to placenta previa [18, 19]. Neonates of mothers with this complication suffer from preterm birth, perinatal death, congenital malformations, and Apgar scores at 1 minute and 5 minutes lower than 7 and stillbirths [20-28]. Perinatal morbidity also occurs and the majority of neonates need resuscitation and NICU admission [24]. Moreover, the most significant outcome of this complication is small for gestational age and low birth weight [26, 29]. However, its complication is limited not only to the antepartum period but also to the intrapartum and postpartum periods such as complicated high rate of caesarean delivery, peripartum hysterectomy, morbid adherence of placenta, and postpartum hemorrhage [28, 30-33]. Hence, this study aims to assess the maternal complications and perinatal outcomes of patients with placenta previa by analyzing its obstetrical factors.

OBJECTIVE OF THE STUDY

The objective of this study was to assess the maternal complications and perinatal outcomes of patients with placenta previa by analyzing its obstetrical factors.

MATERIALS AND METHODOLOGY

This study is a cross-sectional observational study conducted at the Department of Obstetrics and Gynae, in Enam Medical College and Hospital, Savar, Bangladesh. The study was conducted for the duration of 1 year between January 21 to December 21. The sample size for this study was 109.

Inclusion Criteria

- Adult patients who are aged ≥20 years were included.
- Patients with placenta previa diagnosed on routine ultrasound examination were included.
- Patients having a history of previous obstetric performance were also included.
- Patients having antenatal vaginal bleeding (>24 weeks of period of gestation) were included in this study.

Exclusion Criteria

- The patients having antepartum haemorrhage other than placenta previa were excluded from this study.
- The patients with painless vaginal bleeding like carcinoma cervix, cervical polyp, local trauma, etc. not related to placenta previa were excluded.
- The patients who were not willing to give their consent after knowing the study's purpose were also excluded from this study.

An overall clinical examination like abdominal examination, laboratory test, and ultrasound for fetal wellbeing, placental localization and any retroplacental hemorrhage were carried out in patients. The placenta previa was diagnosed through ultrasonography and confirmed at C/S. Gestational age was calculated considering the last menstrual periods and first-trimester ultrasound. Risk factors such as age, parity, multiple pregnancies, malpresentation, anemia, previous C/S and smoking habit were recorded. History of the scarred uterus (C/S, myomectomy, check curettage, medical termination of pregnancy), placenta previa etc. was also evaluated. Maternal complications like intrapartum haemorrhage, postpartum haemorrhage, peripartum hysterectomy, blood transfusion, DIC, acute renal failure and maternal death were recorded. Perinatal morbidity and mortality about prematurity, fetal growth restriction, low birth weight, low APGAR at 1and 5 mins, admission to NICU and stillbirth were also recorded.

RESULT

Figure-1 shows the age distribution of the respondents. Most respondents 81(74.3%) were from the age group 25-29 years and followed by 19(17.4%) were from 20-24 years, 7(6.4%) from 30-34 years and 2(1.8%) were ≥35 years. Figure 2 shows the booking status where 17(16%) were booked and 92(84%) were un-booked. Figure 3 shows the types of parity where 27(25%) was primi and 82(75%) were multi-para. Figure 4 presents the modes of delivery. Most of the patients 79(72%) were undergone caesarian delivery and 30(28%) had vaginal delivery. Table I represents the obstetrical characteristics of the study people. Pain abdomen was present in only 2(1.8%) cases and absent in most 107(98.2%) cases. Both breech and transverse lie presentation was found in 3(2.8%) cases. In previous obstetric performance, LSCS was done in 43(39.4%) patients and abortion was done in 7(24.8%) cases. The adherent placenta was found in 1(0.9%) cases. Table II shows the types of placenta previa. Type 1 was found in 22(20.2%) cases and followed by 2a in 13(11.9%), 2b in most of the cases 50(45.9%), type 3 in 13(11.9%) and type 4 in 11(10.1%) cases. Figure 5 represents the maternal complication of the study people. 4(3.7%) patients were admitted into the ICU and followed by peripartum hysterectomy occurred in 3(2.8%), blood transfusion was needed in 20(18.3%) and post hemorrhage was seen in 12(11%). Table III presents the perinatal outcome of the study patients. APGAR at birth was 8-10 in 69(63.35) cases, 5-7 in 27(24.8%) cases and <5 in 13(11.9%) cases. Birth weight was <1.5 kg in

16(14.7%) neonatal and followed by 1.5-2.5 kg in 38(34.9%) and >2.5kg in 55(50.5%) neonatal. NICU Admission was required in 43(39.4%) cases. Under perinatal deaths, early neonatal deaths occurred in 8(7.3%) cases and stillbirth happened in 3(2.8%) cases.

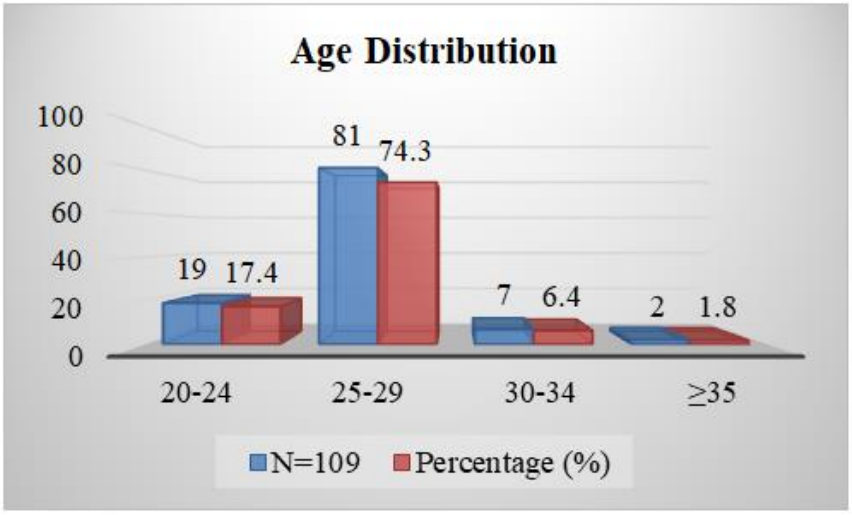

Figure 1: Age Distribution of the Respondents

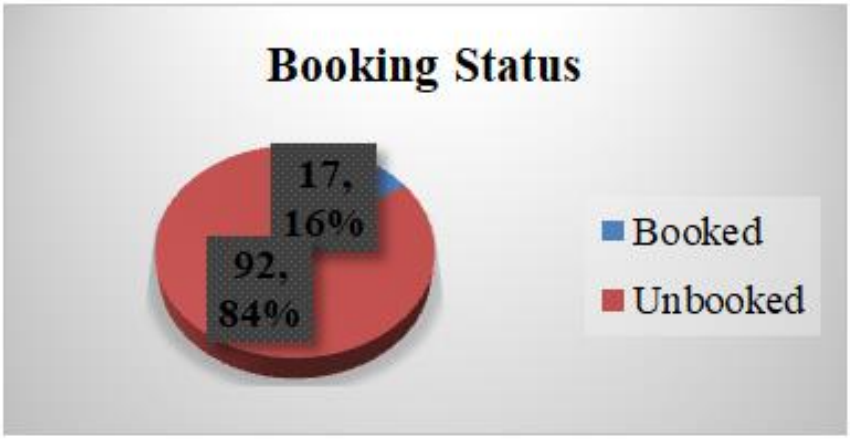

Figure 2: Booking Status

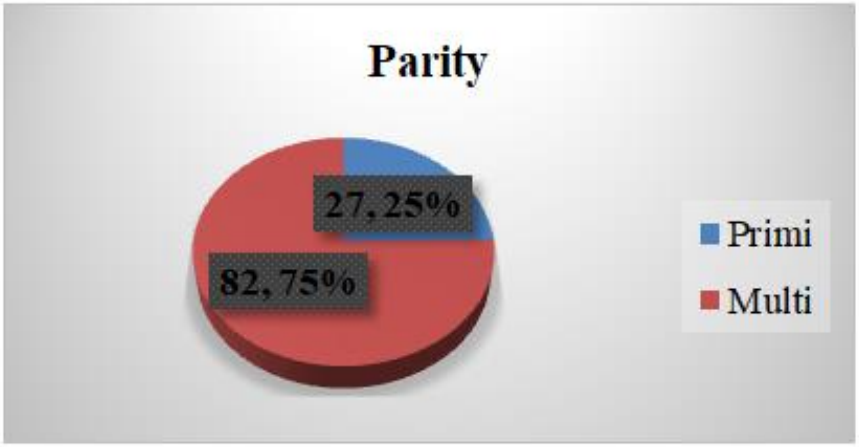

Figure 3: Types of Parity

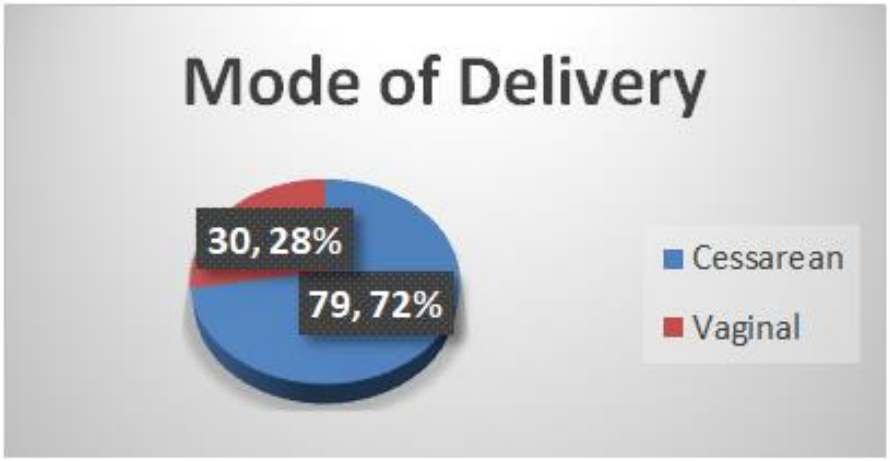

Figure 4: Mode of Delivery

Table I: Obstetrical Characteristics of the Study People

Obstetrical Characteristics		N=109	Percentage (%)
Pain abdomen	Present	2	1.8
	Absent	107	98.2
Presentation	Breech	3	2.8
	Transverse lie	3	2.8
Previous obstetric performance	LSCS	43	39.4
	Abortion	27	24.8
Adherent placenta		1	0.9

Table II: Types of placenta previa

Types of placenta previa	N=109	Percentage (%)
1	22	20.2
2a	13	11.9
2b	50	45.9
3	13	11.9
4	11	10.1

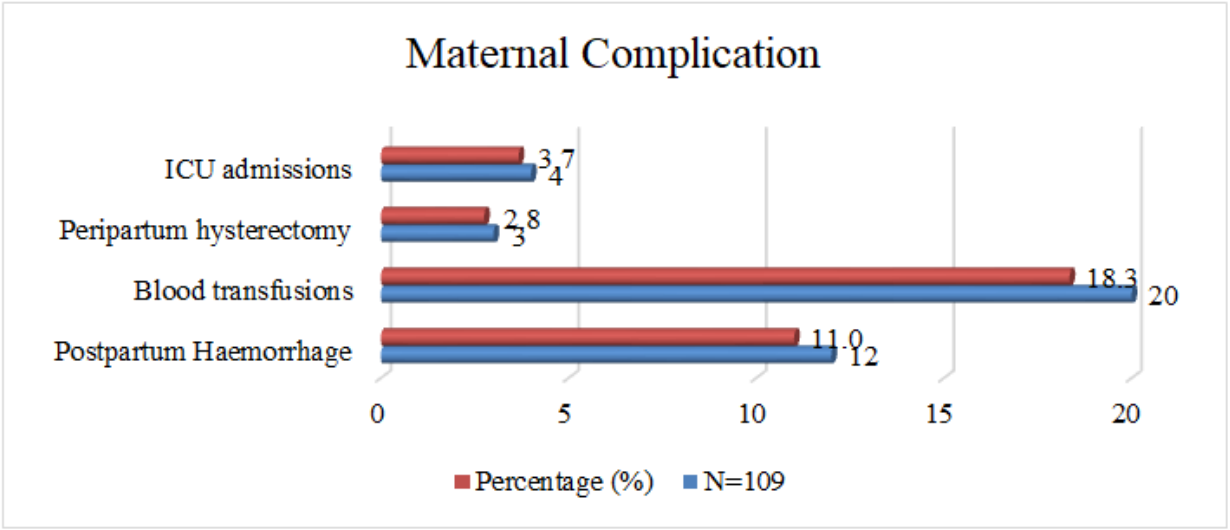

Figure 5: Maternal Complication

Table III: Perinatal outcome

PERINATAL OUTCOME		N=109	Percentage (%)
APGAR at Birth	8-10	69	63.3
	5-7	27	24.8
	<5	13	11.9
Birth Weight	<1.5 kg	16	14.7
	1.5-2.5 kg	38	34.9
	>2.5kg	55	50.5
NICU Admission		43	39.4
Perinatal deaths	Early neonatal deaths	8	7.3
	Stillbirths	3	2.8

DISCUSSION

Most respondents 74.3% were from the age group 25-29 years and followed by 17.4% from 20-24 years, 6.4% from 30-34 years and 1.8% were ≥35 years (Figure 1). The study of Rajeshwari RR *et al*., found most respondents 79.9% were from the age group 20-29 years and followed by 17.9% were from 30-35 years and 2.2% were ≥35 years [34]. Another related study found that most of the respondents 37.6% were from the age group 25-29 years and followed by 33.3% were from <25 years, 23.4% from 30-35 years and 5.6% were >35 years [35]. There were 16% cases as booked and 84% were unbooked (Figure 2). Hasan *et al*., [36] in their study reported 31.6% cases as booked and 68.4% as unbooked whereas Rajeshwari RR et al. reported 15.7% cases as booked and 84.3% as unbooked [34]. 25% cases had primi and the most 75% had multi-para (Figure 3). Sorakayalapeta MR *et al*., in their study showed the most 53.4% of cases had primi and 46.6% had multi-para [37]. Another study reported 21.4% of cases had primi and the most 78.57% had multi-para [38]. Most of the patients 72% were undergone caesarian delivery and 28% had vaginal delivery (Figure 4). Dr Prasad Usha, M.D *et al*., in their study showed that 86.90% patients had undergone caesarian delivery and 13.09% had vaginal delivery [38]. Pain abdomen was present in only 1.8% of cases and absent in most 98.2% of cases. Both breech and transverse lie presentation was found in 2.8% of cases. In previous obstetric performance, LSCS was done in 39.4% of patients and abortion was done in 24.8% of cases. The adherent placenta was found in 0.9% of cases (Table I). Rajeshwari RR *et al*., in their study reported the pain abdomen was present in only 1.5% of cases and absent in most 98.5% of cases. Both breech and transverse lie presentation was found in 3% of cases. In previous obstetric performance, LSCS was done in 40% of patients and abortion was done in 25% of cases [34] in the study of Sorakayalapeta MR *et al.*, adherent placenta was found in 0.76% of cases [37]. Type 1 placenta previa was found in 20.2% of cases and followed by 2a in 11.9%, 2b in most of the cases 45.9%, type 3 in 11.9% and type 4 in 11(10.1%) cases (Table II). Shruthi Prasanth *et al*., in a related study showed Type I placenta previa was found in 7 cases and followed by II an in 24, II b in 18, type III in 55 and type IV in most of the 70 cases [39]. Sameh Mashaly, M. Sc *et al*., in a related study showed this classification as major anterior in 41 cases, major posterior in 12 and complete centralis in 62 cases [40]. 3.7% of patients were admitted into the ICU and followed by peripartum hysterectomy occurred in 2.8%, blood transfusion was needed in 18.3% and post hemorrhage was seen in 11% (Figure 5). In a related study3.8% of patients were admitted into the ICU and followed by peripartum hysterectomy occurred in 3.05%, blood transfusion was needed in 18.3% and post hemorrhage was seen in 10.7% of cases [37]. APGAR at birth was 8-10 in 63.3% cases, 5-7 in 24.8% cases and <5 in 11.9% cases. Birth weight was <1.5 kg in 14.7% neonatal and followed by 1.5-2.5 kg in 34.9% and >2.5kg in 50.5% neonatal. NICU Admission was required in 39.4% of cases. Under perinatal deaths, early neonatal deaths occurred in 7.3% of cases and stillbirth happened in 2.8% of cases (Table III). Dr Prasad Usha, M. D *et al*., in their study reported APGAR at birth was 8-10 in 63.09% cases, 5-7 in 25% cases and <5 in 11.9% cases. Birth weight was <1.5 kg in 15.47% neonatal and followed by 1.5-2.5 kg in 25.52% and >2.5kg in 50% neonatal. NICU Admission was required in 39.28% of cases. Under perinatal deaths, early neonatal deaths occurred in 7.14% of cases and stillbirth happened in 2.38% of cases [38].

CONCLUSION AND RECCOMENDTION

Placenta previa is the main cause of maternal and perinatal morbidity and mortality. It prevails in nearly 0.9% of all deliveries. Most of the patients in Bangladesh are from rural areas and are unaware of the importance of antenatal visits due to illiteracy and low socioeconomic status. Increasing use of primary C/S causes an increased incidence of placenta previa. Efforts should be taken to bring morbidity and mortality rates low through accurate diagnosis, spacing pregnancies, proper family planning, antenatal registration during pregnancy, use of routine USG, appropriate management and timely delivery and timely referral of high-risk patients to tertiary care centres. The

rural public should be made aware to avail of the facilities provided by the Government. Neonatal care should be improved to reduce neonatal morbidity and mortality in premature delivery due to placenta previa. This attempt may help in better outcomes for both mother and neonatal in all high-risk pregnancies.

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