International Journal of Health Sciences and Research
[Indexed, Peer-Reviewed Journal]
Volume 15; Issue: 12; December 2025
Website: www.ijhsr.org
Original Research Article *ISSN: 2249-9571*

Maternal and Foetal Outcome of Placenta Previa in a State Teaching Hospital

Priti Medda[1], Kalyan Kumar Baidya[2], Suhrita De Roy[3]

[1]Department of Obstetrics and Gynaecology, Chittaranjan Seva Sadan College of Obstetrics, Gynaecology and Child Health Kolkata, West Bengal, India,
[2]Department of Obstetrics and Gynaecology, Chittaranjan Seva Sadan College of Obstetrics, Gynaecology and Child Health Kolkata, West Bengal, India,
[3]Department of Obstetrics and Gynaecology, Chittaranjan Seva Sadan College of Obstetrics, Gynaecology and Child Health Kolkata, West Bengal, India

Corresponding Author: Kalyan Kumar Baidya

DOI: https://doi.org/10.52403/ijhsr.20251203

ABSTRACT

Background: Obstetric hemorrhage is one of the most common causes of maternal morbidity and mortality worldwide. About one third of the all cases of ante partum hemorrhage belong to placenta previa. It is the major cause of obstetric and perinatal morbidity and mortality.
Aims and Objective: Aim is to assess maternal and fetal outcome of Placenta Previa.
Material and Methods: In this prospective observational study 73 pregnant women at gestational age 20 weeks or more with diagnosed placenta previa by ultrasonography attending outpatient department or emergency over a period of 18 months were enrolled. History taking, clinical examination and laboratory investigation was carried out as per study proforma. Analysis of maternal outcome and perinatal outcome was done. Statistical analysis was done by SPSS software with p-value=0.05.
Results: Among 73 women, 32.9% belonged to age group > 30 years, 43.8% belonged to low socio-economic group and 70.3% cases were multi-gravidas. Incidence of type 1 placenta was 57.5%. History of previous c-section was the most common risk factor (46.6%) followed by history of previous D&E (16.4%). Commonest mode of delivery was emergency c-section (79.5%). 68.5% cases required blood transfusion, 42.5% cases required ICU admission and 12.3% cases require obstetric hysterectomy. 4.1% cases developed hypovolemic shock, 2.7% cases developed DIC. 57.5% of the newborns were of low birth weight, 11% units developed sepsis and 13.7% developed RDS.
Conclusion: Placenta previa is associated with significant maternal, fetal and neonatal complications. It is a big challenge to the Obstetricians and neonatologists to overcome it.

Keywords: Placenta previa, obstetric hysterectomy, DIC, NICU admission

INTRODUCTION

Obstetric hemorrhage is one of the most common causes of maternal morbidity and mortality worldwide. About one third of the all cases of ante partum hemorrhage belong to placenta previa. It is the major cause of third trimester bleeding. It is the major cause of obstetric and perinatal morbidity and mortality. Placenta previa is defined as implantation of placenta in lower uterine segment, overlying or approaching internal cervical os. Placenta previa affects approximately 0.4-0.5% [1] of all labors. Placenta previa refers to the location of

placenta that overlies or is proximate to the internal Os of the cervix. The Latin word previa means going before and in this sense the placenta goes before the fetus into the birth canal.

It is further classified into four types according to William's as below. Each of the first three types is subdivided into-

type A and B, depending on whether the placenta mainly lies on the anterior or posterior wall respectively.

Type 1 - Low lying placenta: The major part of the placenta is attached to the upper segment and only the lower margin encroaches onto the lower segment.

Type 2 - Marginal placenta previa: The placenta reaches the margin of the internal Os, but does not cover it.

Type 2a - Anterior type.

Type 2b -posterior type.

It is also called Stallworthy's dangerous placenta because placenta gets compressed between the head and the sacral promontory causing fetal distress.

Type 3 - Incomplete or partial placenta previa: The placenta partially covers the Os, but does not cover it completely after full cervical dilatation.

Type 4 - Complete or central placenta previa: The placenta is almost centrally placed over internal Os and likely to cover it even at full dilatation.

Posterior is slightly more common and more dangerous, because it discourages engagement of the head more often and the placenta is likely to be compressed in labor impairing placental perfusion.

The most characteristic event in placenta previa is sudden, painless and apparently causeless hemorrhage, which usually does not appear until near end of second trimester. Incidence of placenta previa is estimated to be 4 to 5 per 1000 pregnancies [2]. There are several factors, especially obstetrical, which has been found to be associated with placenta previa. Advancing maternal age, multi-parity, previous cesarean delivery, previous abortions, previous history of placenta previa etc.; has been associated with increased risk of placenta previa. Placenta previa is considered high risk pregnancy because of the adverse maternal outcome like postpartum hemorrhage, cesarean hysterectomy, and increased need for blood transfusion. Higher risk of preterm birth, low Apgar score, congenital malformation increases the perinatal morbidity and mortality. Maternal and fetal morbidity and mortality from placenta previa is considerable and associated with high demands on health care resources because Placenta previa can cause severe hemorrhagic bleeding during the pregnancy or/and at the time of delivery. It can be one of the obstetrician's worst nightmares which are associated with severe maternal morbidity and one of the major causes of maternal death. In the women who were deliver previously by caesarean section or any abdominal surgery in past, there is an increase incident of morbidly adherent placenta. The rising trend of caesarean section has led to dramatic increase in incidence of placenta Previa and Morbidly adherent placenta (MAP) in last few decades. Ultrasound has good diagnostic accuracy in diagnosis of placenta previa but in some patients, MAP is diagnosed intraoperatively and hence has catastrophic outcomes. Obstetric hemorrhage is major contributor of these maternal deaths with placenta previa along with MAP now being the major culprits. Morbidity with placenta previa and MAP can significantly be reduced if diagnosed antenatal.

The number of cases of Placenta Previa and its complications are increases day by day and it is the major cause of increase incidence is cesarean sections and other causes such as myomectomy, uterine perforation, and advanced maternal age, short interval between two pregnancy, placenta previa, and sub mucous myoma. Since over the last two decades, combined with increasing maternal age and parity. Morbidly adherent Placenta is a life - threatening condition which is 90% associated with postpartum hemorrhage, disseminated intravascular coagulopathy

(DIC), Anemia, multiple D&Cs and multiple organ failure. Morbidly adherent placenta (MAP) is the most commonly associated with placenta previa in women who previously delivered by caesarean section or in other words previous scare is the common side of placenta adhesion.

The aim of our study to identify the women who have placenta previa and find out different maternal complications during pregnancy, frequencies of placental position, mode of delivery, management and fetal outcomes in Placenta Previa (PP) mothers.

MATERIALS & METHODS

Study setting: Tertiary care teaching hospital.

Place of study: Dept. of Obstetrics and Gynaecology, Chittaranjan Seva Sadan College of Obstetrics, Gynaecology and Child Health, Kolkata 700026.

Time frame: April 2021 – October 2022 (18 months)

Study population: Pregnant woman who had ultrasound documented placenta previa irrespective of parity coming to the emergency department, Out Patient Department or admitted in anti-natal ward of as per inclusion and exclusion criteria noted below.

Study design: Prospective Observational Study

Sample size: Total sample size was 73.

Inclusion criteria: All antenatal patients with gestational age beyond 20 weeks already diagnosed as placenta previa by ultrasonography irrespective of age, parity, type of placenta previa.

Exclusion criteria: Antenatal women unwilling to give consent for the study, Antenatal women with normally situated placenta and other causes of antepartum hemorrhage.

Total 73 Antenatal mothers fulfilling the inclusion criteria were included in the study after obtaining informed consent. Diagnosis of placenta previa was based on ultrasonography; calculation of gestational age was determined by last menstrual period and first trimester ultrasound. Data was collected regarding delivery data – presentation of the foetus, mode of delivery, gestational age at delivery, neonatal data – birth weight, APGAR score at one minute and five minutes, NICU admissions and maternal complications – postpartum hemorrhage, need for postpartum blood transfusion and peripartum hysterectomy. An analysis of maternal mortality and morbidity with respect to development of hypovolemic shock, DIC, anaemia, acute kidney injury, septicaemia and maternal death was done.

Statistical Analysis

It was performed with help of Epi Info (TM) 7.2.2.2 EPI INFO is a trademark of the Centers for Disease Control and Prevention (CDC).

RESULT

In this study among 73 antenatal women, 45.2% belonged to age group 26-30 years (Fig-1), 86.3% of the cases were booked, 43.8% belonged to low socio-economic group and 70.3% cases were multi-gravidas.

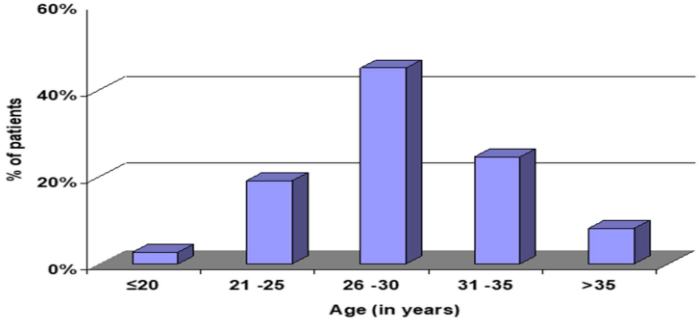

Figure 1: Showing 45.2% patients were with age between 26 – 30 years

Incidence of type 1 placenta was mostly seen in study (57.5%) (Fig-2) and there were 3 cases of adherent placenta.

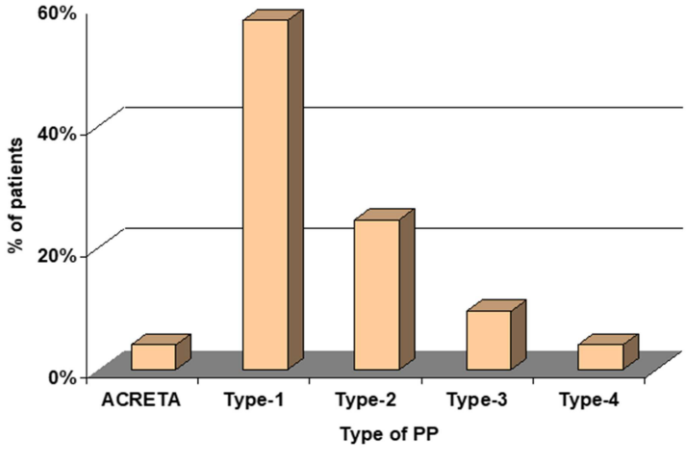

Figure 2: Showing Type-1 (57.5%) placenta previa

History of previous c-section is the most common risk factor seen associated (46.6%) with placenta previa, followed by history of previous D&E (16.4%). Commonest mode of delivery was emergency c-section (79.5%) (Fig-3).

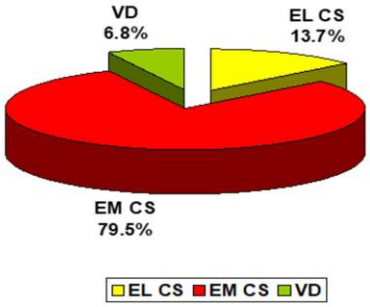

Figure-3: Showing commonest mode of delivery was emergency c-section (79.5%)

68.5% of the cases require blood transfusion. 42.5% cases require ICU admission, 12.3% cases require obstetric hysterectomy, 4.1% cases develop hypovolemic shock, 2.7% cases develop DIC and 2.7% were complicated with renal failure (Table-1).

Table 1: showing maternal complications associated with placenta previa

Complication of mothers	Number	Percentage (%)
Cs hysterectomy	9	12.3
DIC	2	2.7
Fever	5	6.8
HG shock	3	4.1
PPH	14	19.2
Renal failure	2	2.7
Wound infection	3	4.1
Nil	35	47.9
Total	73	100

Unfortunately, there were 2 maternal deaths. 57.5% of the newborns were of low birth weight, 37.1% babies had poor 1min APGAR score, 11% units developed sepsis, 13.7% developed RDS (Fig-4).

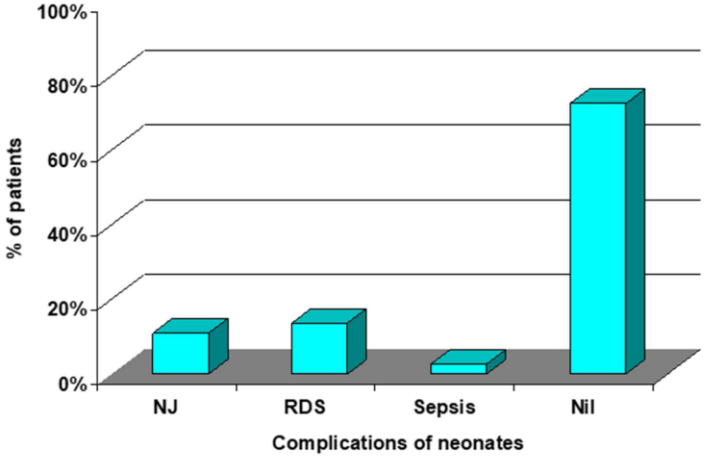

Figure 4: Showing neonatal complications RDS (13.7%) was higher

There were 3 cases of IUFD and 3 cases of post-natal deaths.

DISCUSSION

In this study, 32.9 % cases belong to age group > 30 years with mean age of 28.41 ± 4.76 SD. Shruthi Prasanth et al. (2016) [3] in a study reported that among 174 cases, 25.45% cases belonged to age group > 30 years. Tayyiba Wasim et al. (2020) [4] reported incidence of placenta previa in age group >30 years was 47.91%. Sarojini et al. 86.3% cases were booked, which was significantly high in the study population which was seen also in Yadava Pa et al. (2019) [5] among all the cases of placenta previa, 75% cases were booked cases. In this study 43.8% belonged to low socio-economic status group which was comparable to study by Tayyiba Wasim et al. (2020) [4] concluded that 34.37% belonged to low socio-economic status. 75.3% patients were multi-gravida which was similar to a study by Sarojini et al. (2016) [6] where placenta previa 80.2% were multigravidas. 49.3% of the patients were with gestational age between 31weeks-35 weeks at the time of diagnosis which was comparable to study by Sarojini et al. (2016) [6] 60.3% patients were diagnosed with placenta previa at gestational age between 31weeks to 35 weeks and by Seema Dwivedi et al. (2018) [7] concluded in their study that 46.9% of placenta previa are diagnosed at period of gestation 31weeks-35weeks. 57.5% cases has type 1 placenta previa, and there were 3 cases of Placenta Accreta. Seema Dwivedi et al. (2018) [7] concluded that type 1 placenta previa was present in 48.1% of cases and Yadava PA et al. (2019) [5] concluded that 23% of the cases has the type 1 placenta previa. In this study previous c-section (46.6%) is the most common risk factor. 16.4% had history of previous D&E. 9.6% had history of placenta previa in previous pregnancy. 2.7% patients have history of uterine anomaly. Similar study by Seema Dwivedi et al. (2018) [7] 33.17% had history of previous c-section, 14.9% had history of D&E, 5.72% had history of placenta previa in previous pregnancy and Sarojini et al. (2016) [6] 36.7% had history of previous c-section, 7.5% had history of D&E. In this study the commonest mode of delivery was by c-section (93.2%). 13.7% c-sections were elective and 79.5% were emergency c-sections. 6.8% delivered vaginally which was comparable with study by Seema Dwivedi et al. (2018) [7] most of the

patients delivered by c-section 85.5%. 74.8% were emergency c-sections and 10.6% were elective c-sections. Sarojini et al. (2016) [6] also concluded that 85.8% cases delivered by caesarean delivery & 14.2% delivered by vaginal route. In this study 19.2% cases were complicated with PPH, 12.3% cases required caesarean hysterectomy. 6.8% cases had fever, 4.1% had wound infection, 4.1% cases complicated with hemorrhagic shock, 2.7% cases had DIC & other 2.7% had renal failure. Jigar K Thakkar et al. (2018) [8] showed that 11.2% cases suffered from PPH 6.5% underwent obstetric hysterectomy, 3.7% had hemorrhagic shock, 1.9% had fever & 2.8% were complicated with wound infection. Yadava PA et al. (2019) [5] in a study concluded that 17.04% cases were complicated with post-partum hemorrhage, 7.95% cases underwent obstetric hysterectomy. 3.4% had fever, 3.4% cases had wound infection, 11.36% cases were complicated with hypovolemic shock, 3.4% cases had DIC, and 2.7% had renal failure. This study is comparable with Yadava PA et al. (2019) [5] where post-partum hemorrhage is most common complication occurred (17.4%) as in 19.2% cases PPH were present in this study. In this study 42.5% required ICU admission which was comparable with study by Tayyiba Wasima et al. (2020) [4] where 36% cases required ICU admission. In this study 68.5% cases required blood transfusion which was similar with Seema Dwivedi et al. (2018) [7] study where 68.3% of cases required blood transfusion. Aditi Mahesh Kunte et al. (2021) [9] concluded 44.11% required one unit of transfusion, 41.185 required 2-3 units of blood transfusion and 14.71% required more than 3 units of blood transfusion. In this study 2.7% maternal mortality was observed which was comparable to the study of Alaqueli et al. (2018) [10] study, maternal mortality was 3.9% and Tayyiba Wasim et al. (2020) [5] maternal mortality is 3.57%. 57.5% of neonates were of low birth weight comparable with Tayyiba Wasim et al. (2020) [4] concluded that 53.73% babies had birth weight < 2.5kg. 37.1% of the newborn had low 1min Apgar score & 14.3% had low 5min Apgar score was comparable with study of Krupa BM et al. (2021) [11] where it was concluded that 46.2% of the newborn had low 1min APGAR score and 33% newborn has low 5min APGAR score. In this study 13.7% of the neonates had respiratory distress syndrome. 11% had neonatal jaundice, 27% had sepsis. Ahsete Adere et al. (2020) [12] concluded in their study that 14.9% of the neonates had respiratory distress syndrome, 1.3% had neonatal jaundice. 27.4% of the neonates required NICU admission similar with study of Aditi Mahesh Kunte et al. (2021) [9] concluded 29.42% of neonates required NICU admission and Sarojini et al. (2016) [13] concluded 30.2% of neonates required NICU admission. Perinatal Mortality rate in this study is 8.2%. Out of total 6 perinatal deaths, 3 were IUFDS (4.1%) 3 were post-natal deaths (4.1%) which was comparable with study of Aditi Mahesh Kunte et al. [9] (2021) 8.82% of neonates did not survive and Shruthi Prasanth et al. (2016) [14] concluded that 1.72% was perinatal mortality rate.

CONCLUSION

Antepartum haemorrhage in third trimester is a grave obstetric emergency. Managing a case of placenta previa is challenging for an obstetrician as there is increased risk of maternal and perinatal mortality and morbidity.

Advancing maternal age, multiparity, prior caesarean sections and prior abortions were found to have significant association with placenta previa. An increase in the incidence of these risk factors probably contributes to a rise in the number of pregnancies complicated with placenta previa.

Women who had placenta previa in previous pregnancy were at increased risk of placenta previa in current pregnancy. Clinicians should consider this factor when counselling their patients. Sonographic diagnosis of

low-lying placenta is very important to detect asymptomatic cases, which may cause major management challenges when presented as an emergency.

The detection of placenta previa should encourage a timely delivery in order to reduce the associated maternal and perinatal complications. Thus, a good antenatal care and early diagnosis correction of anaemia in first and second trimester, ultrasonography and antenatal care in tertiary care facilities where the blood transfusion facilities and ICU care is available will decrease the perinatal and maternal complications.

Author's Contribution:

PM- Literature survey, design of study, implementation of study protocol, data collection, data analysis, manuscript preparation and submission of article; KKB- Concept, design, clinical protocol, manuscript preparation, editing, and review Manuscript. SDR- Design of study, statistical analysis, interpretation and review Manuscript.

Declaration by Authors

Ethical Approval: Clearance from the institutional Ethics Committee of Chittaranjan Seva Sadan College of Obstetrics, Gynaecology and Child Health, Kolkata was duly taken prior to start of the study.

Acknowledgement: I am especially thankful to Dr. Suhrita De Roy, my guide and Dr. Kalyan kumar Baidya, my colelague for their encouragement, guidance and support.

I am also thankful to all other faculty, colleagues and juniors in the Department of Obstetrics and Gynaecology for their valuable suggestions and co-operation.

Source of Funding: There was no financial support concerning this work.

Conflict of Interest: There was no conflict of interest.

REFERENCES

1. Ananth CV, Wilox AJ, Cavitz DA, Bowes WA Jr, Luther ER. Effect of maternal age and parity on risk of uteroplacental bleeding in pregnancy. Intl J Obstet & Gynecol. 2006; 2:511-6.
2. Emily C Olive, Christine L, Roberts Charles S, Algert & Jonatha MM. Placenta previa: Maternal morbidity and place of birth. Aus & NZ J Obstet & Gynecol. 2005;45(6):499-504.
3. Shruthi Prasanth, Priyanka Mehta, KS Rajeshwari. Maternal and fetal outcome of placenta previa in a tertiary care institute: a prospective two-year study. Indian Journal of Obstetrics and Gynecology Research 2016;3(3):274-278.
4. Wasim T, Bushra N, Riaz S, Iqbal HI. Fetomaternal outcome in patients with placenta previa. Pak J Med Sci. 2020 Jul-Aug;36(5):952-957. doi: 10.12669/pjms.36.5.1647. PMID: 32704270; PMCID: PMC7372655.
5. Yadava PA, Patel RR, Mehta AS. Placenta previa: risk factors, feto-maternal outcome and complications. Int J Reprod Contracept Obstet Gynecol 2019; 8:4842-6.
6. Sarojini, Malini KV, Radhika. Clinical study of placenta previa and its effect on maternal health and fetal outcome. Int J Reprod Contracept Obstet Gynecol 2016; 5:3496-9.
7. Dwivedi S, Verma K, Jahan U, Malhotra V, Gupta S, Implications of placenta previa on pregnancy outcome: A prospective study. Indian J Obstet Gynecol Res 2018;5(1):91-97.
8. Singh R, Pradeep Y. Maternal and neonatal outcomes in morbidly adherent placenta:A developing country experience. Trop Doct. 2015;45(3):183–187. doi:10.1177/0049475515585639.
9. Aditi Mahesh Kunte, Vidya Manoj Jadhav. A study of fetomaternal outcome in placenta previa in tertiary care centre, Sangli. MedPulse International Journal of Gynaecology. April 2021; 18(1): 05-08.
10. Kassem GA, Alzahrani AK. Maternal and neonatal outcomes of placenta previa and placenta accreta: Three years of experience with a two-consultant approach. Int J Womens Health. 2013; 5:803–10.
11. Ann L Coker. Placenta accreta: Diagnosis, management and the molecular biology of the morbidly adherent placenta William. Physiol Behav. 2017; 176:139–48.
12. Ashete Adere, Abay Mulu, Fikremelekot Temesgen, "Neonatal and Maternal

Complications of Placenta Praevia and Its Risk Factors in Tikur Anbessa Specialized and Gandhi Memorial Hospitals: Unmatched Case-Control Study", Journal of Pregnancy, vol. 2020, Article ID 5630296, 9 pages, 2020.

13. Sarojini, Malini KV, Radhika. Clinical study of placenta previa and its effect on maternal health and fetal outcome. Int J Reprod Contracept Obstet Gynecol 2016; 5:3496-9.
14. Shruthi Prasanth, Priyanka Mehta, KS Rajeshwari. Maternal and fetal outcome of placenta previa in a tertiary care institute: a prospective two-year study. Indian Journal of Obstetrics and Gynecology Research 2016;3(3):274-278.

How to cite this article: Priti Medda, Kalyan Kumar Baidya, Suhrita De Roy. Maternal and foetal outcome of Placenta previa in a state teaching hospital. *Int J Health Sci Res.* 2025; 15(12):25-32. DOI: *10.52403/ijhsr.20251203*

******