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Fetomaternal Outcome of Placental Abruption at a Tertiary Care Hospital in Maharashtra

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Abstract: ***Placental abruption, a significant obstetric complication, leads to both maternal and neonatal morbidity and mortality. It involves the premature separation of the placenta from the uterine wall, causing hemorrhage before the fetus is delivered. While the global incidence of placental abruption is approximately 1%, it rises to as high as 5% in India. The exact cause remains unclear, but various risk factors have been identified, including gestational hypertension, multiple gestation, advanced maternal age, chorioamnionitis, premature rupture of membranes, polyhydramnios, thrombophilia, trauma, and maternal smoking. Aim: To study the Fetomaternal outcome of Placental Abruption. Material and methods: This retrospective cross - sectional study, conducted at Dr. Vitthalrao Vikhe Patil Pravara Rural Hospital, Loni, from April to October 2024, focused on patients with placental abruption after 28 weeks of gestation. The study included 54 cases of abruption from 5787 deliveries (0.93%). Data on patient history, risk factors, clinical course, mode of delivery, and complications such as shock, DIC, and postpartum hemorrhage were collected. Maternal outcomes were analyzed based on ICU stay duration and complications. Data was analyzed using Microsoft Excel 21. Results: This study, conducted between April and October 2024, reviewed 54 cases of placental abruption out of 5787 deliveries, making up 0.93% of total cases. Most affected women were in the 21 - 24 years and ≥30 years age groups, with 44.4% being primigravida. Additionally, 66.6% of women were unbooked, and pregnancy - induced hypertension and pre - eclampsia were the leading risk factors, present in 42.59% of cases. Cesarean section was performed in 51.85% of cases, while vaginal delivery occurred in 48.14%. Postpartum hemorrhage was the most common complication, and only one case required an obstetric hysterectomy. Most patients (90.7%) were treated in the wards, with 9.3% requiring ICU care. In terms of fetal outcomes, 50% experienced intrauterine death, while 35.18% had live births. Conclusion: Placental abruption is a serious complication with various risk factors, though its occurrence is often unpredictable. Early identification through proper antenatal care can help mitigate risks. Timely management, especially in tertiary care centers, and appropriate use of blood products can reduce maternal morbidity and mortality. Perinatal mortality is often due to intrauterine fetal demise and preterm delivery, but with improved neonatal care, survival rates for preterm infants have significantly increased.***

Keywords: Placental abruption, Maternal complications, fetal outcomes, risk factors, pregnancy complications

1. Introduction

Placental abruption is characterized by the acute onset and rapid progression of symptoms, typically presenting with a clinical triad of abdominal pain, abnormal uterine tenderness, and vaginal bleeding after the 20th week of gestation.1 While ultrasonography can be used as a diagnostic tool, studies indicate that it only detects 50% of cases involving clots. Maternal complications can be severe, including hemorrhagic shock, disseminated intravascular coagulation (DIC), renal failure, ischemic necrosis of distal organs, and even death.2 Fetal complications may include hypoxia, anemia, growth restriction, prematurity, neurodevelopmental issues, and fetal death.3The condition poses significant risks to both mother and fetus, emphasizing the need for timely diagnosis and management.4This study aimed to evaluate the clinical profile of patients with placental abruption and assess both maternal and perinatal outcomes at Dr. Vitthalrao Vikhe Patil Pravara Rural Hospital, Loni. Early diagnosis and intervention were key factors in improving survival rates for both mother and fetus.

Aim: To study the Fetomaternal outcome of Placental Abruption.

2. Material and Methods

This retrospective cross - sectional study was conducted at Dr. Vitthalrao Vikhe Patil Pravara Rural Hospital, Loni, Maharashtra, from April to October 2024, to evaluate placental abruption cases. The study included women admitted with suspected abruption after 28 weeks of gestation, diagnosed clinically with vaginal bleeding, abdominal tenderness, and confirmed after delivery. The exclusion criteria encompassed cases with gestational age under 28 weeks, placenta previa, and bleeding due to local genital tract lesions. Among 5787 deliveries, 54 cases of placental abruption (0.93%) were identified. Detailed data on patient history, pre - existing risk factors, mode of delivery, clinical course, and complications such as shock, DIC, and postpartum hemorrhage were collected. Maternal outcomes were assessed based on ICU stay duration and the presence of complications, with data analyzed using Microsoft Excel 21.

3. Results

In this study, conducted between April and October 2024, out of 5787 deliveries, 54 women were diagnosed with placental abruption, representing 0.93% of the total cases. Most affected women were in the age groups of 21 - 24 years and ≥30 years. Primigravida women accounted for 44.4% of the cases, while 66.6% of the women were unbooked cases. Pregnancy - induced hypertension and pre - eclampsia were the major risk factors, accounting for 42.59% of the cases. Cesarean section was the mode of delivery in 51.85% of the cases, while vaginal delivery occurred in 48.14%.

Postpartum hemorrhage was the most common complication associated with placental abruption in this study. Only one out of the 54 cases required an obstetric hysterectomy. A majority, 90.7%, of the patients received care in the general wards, while 9.3% required ICU admission. In terms of fetal outcomes, intrauterine death was observed in 50% of the cases, while 35.18% of the cases resulted in a live birth.

The following table provides a consolidated summary of the maternal characteristics, risk factors, complications, and fetal outcomes observed in this study.

Table 1: Summary of Findings

Sr. No	Parameter	**Categories**	**No. (%)**
1	Age Group (Years)	≤20	14.8%
		21 - 24	29.6%
		25 - 29	25.9%
		≥30	**29.6%**
2	Parity	Primigravida	44.4%
		Multigravida	**55.6%**
3	Risk Factors	PIH & Pre - eclampsia	**42.59%**
		Previous LSCS	20.37%
		Preterm Premature ROM	5.55%
		Unexplained	31.48%
4	Booked Status	Booked	33.3%
		Unbooked	**66.6%**
5	Mode of Delivery	Vaginal	48.14%
		Cesarean Section	**51.85%**
6	Complications	Postpartum Hemorrhage	18.51%
		DIC	14.81%
		Acute Renal Failure	11.11%
		Shock	12.96%
		Blood Transfusion	**37.03%**
		Obstetric Hysterectomy	1.85%
7	Level of Care Required	General Ward	**90.7%**
		ICU	9.3%
8	Fetal Outcome	Live Birth	35.18%
		Fresh Stillbirth	14.81%
		Intrauterine Death	**50%**

4. Discussion

This study, conducted between April and October 2024, analyzed 54 cases of placental abruption out of 5787 deliveries, representing 0.93% of total cases. Most affected women were in the age groups of 21 - 24 years and ≥30 years, with primigravida women accounting for 44.4% of cases. Additionally, 66.6% of the women were unbooked cases, and pregnancy - induced hypertension and pre - eclampsia were the major risk factors, accounting for 42.59% of cases. Cesarean section was the mode of delivery in 51.85% of cases, while vaginal delivery occurred in 48.14%. Postpartum hemorrhage was the most common complication, and only one case required an obstetric hysterectomy. Most patients (90.7%) received care in the wards, with 9.3% requiring ICU admission. In terms of fetal outcomes, 50% of cases had intrauterine death, while 35.18% resulted in live births.

In the present study, the incidence of placental abruption was 0.93%, which is comparable to the global incidence of 1%. In the present study, 29.6% of cases belonged to the age group of 21 - 24 years, and another 29.6% were ≥30 years old, consistent with findings by Cande Ananth et al.3, who observed an increased risk in younger women due to poor socio - economic conditions, while women above 35 years are at higher risk. Abruption was seen in 44.4% of primigravida, with 55.6% being multigravida, similar to Fernandes JC's [1]study, which reported 46.15% primigravida and 53.84% multigravida cases. Additionally, 66.6% of the cases were unbooked, in agreement with Choudhary et al. 's [4]study, which reported 66.94% unbooked cases. Hypertensive disorders were found in 42.59% of cases, which aligns with studies by Varalakshmi et al.4 (44%). Furthermore, 20.3% of cases had a history of previous cesarean section, similar to the 17.9% reported by Gandotra et al.[6]

In the present study, 20.3% of cases had a history of previous cesarean section, which is similar to the 17.9% reported by Gandotra et al.6 Cesarean delivery occurred in 51.85% of cases, which aligns with findings by Choudhary et al.4 (45.97%) and Fernandes et al.1 (49.23%). Regarding fetal outcomes, 35.18% of cases had live births, contrasting with Fernandes et al. 's study[1] (64.17%) and Sengodan et al. 's [7]study (69.8%). In the present study, 50% of cases had intrauterine deaths at the time of admission, and the high number of unbooked pregnancies suggests late arrival at the tertiary healthcare center, which serves as a referral center. Postpartum hemorrhage was reported in 18.51% of cases, which is consistent with Fernandes et al.1 (16.92%) and Sengodan et al.7 (19.6%) studies.

In the present study, 37.03% of cases received blood and blood products, which is higher than the 20% reported by Saquib et al., [8] but lower than Patel et al. 's[10] finding of 95% and Wasnik et al. 's [9]75%. Acute renal failure occurred in 11.11% of cases, similar to Choudhary et al., [4] who reported 10.48%. Only one case required obstetric hysterectomy. Most patients recovered in the wards, with only 9.2% requiring ICU care. Notably, no maternal mortality was recorded in our study.

5. Conclusion

Placental abruption is a significant obstetric complication with various known risk factors, though its occurrence remains unpredictable. Early identification of these risk factors through adequate antenatal care can help mitigate some risks. Treatment depends on the gestational age and severity of the abruption. Timely diagnosis and management, especially in a tertiary care center, along with appropriate use of blood and blood products, can significantly reduce maternal morbidity and mortality. Perinatal mortality and morbidity primarily result from intrauterine fetal demise and

preterm delivery, but with advanced neonatal intensive care, the survival rates of preterm babies have greatly improved.

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