Section: Obstetrics and Gynecology

Original Research Article

FETOMATERNAL OUTCOME IN PREGNANT WOMEN PRESENTING WITH FIRST -TRIMESTER VAGINAL BLEEDING:AN OBSERVATIONAL STUDY

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Received *: 11/02/2026*
Received in revised form *: 21/03/2026*
Accepted *: 06/04/2026*

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DOI: 10.70034/ijmedph.2026.2.718

Source of Support: Nil,
Conflict of Interest: None declared

Int J Med Pub Health
2026; 16 (2); 4375-4378

ABSTRACT

Background: First-trimester vaginal bleeding is a common obstetric complication occurring in approximately 20–25% of pregnancies. Although many pregnancies continue normally, early pregnancy bleeding is associated with increased risks of miscarriage, preterm delivery, fetal growth restriction, and other adverse obstetric outcomes. The objective is to determine the fetomaternal outcomes in pregnant women presenting with vaginal bleeding during the first trimester.

Materials and Methods: A prospective observational study was conducted among 170 pregnant women with ≤14 weeks gestation presenting with vaginal bleeding at the Obstetrics and Gynaecology Outpatient Department of ESIC Model Hospital, Jaipur. Detailed clinical history, examination, ultrasonographic findings, and laboratory investigations were recorded. Patients were followed throughout pregnancy to determine maternal and fetal outcomes. Data were analyzed using descriptive statistics.

Results: Among the study participants, the majority of women were aged 21–30 years (58.8%). Threatened abortion was the most common diagnosis (62.4%). Miscarriage occurred in 32.9% of cases, while 67.1% continued pregnancy beyond the first trimester. Among continuing pregnancies, complications included preterm delivery (14.7%), pregnancy-induced hypertension (10.3%), and intrauterine growth restriction (8.8%). Live birth occurred in 82.5% of continuing pregnancies, while low birth weight was observed in 18.4% of neonates.

Conclusion: First-trimester vaginal bleeding is significantly associated with adverse pregnancy outcomes including miscarriage, preterm birth, and fetal growth restriction. Early diagnosis, careful monitoring, and timely management may improve maternal and fetal outcomes.

INTRODUCTION

Vaginal bleeding during the first trimester of pregnancy is one of the most common and alarming symptoms encountered in obstetric practice. Approximately 20–25% of pregnant women experience bleeding during early pregnancy, making it a significant clinical concern for both patients and healthcare providers.[1] While many pregnancies proceed normally despite early bleeding, it may indicate underlying pathology and is often associated with adverse maternal and fetal outcomes.

The causes of first-trimester bleeding are diverse and include obstetric conditions such as threatened abortion, inevitable abortion, incomplete abortion, missed abortion, ectopic pregnancy, and molar pregnancy.[2] Non-obstetric causes include cervical lesions, infections, trauma, and hormonal disturbances. Accurate diagnosis requires careful evaluation through clinical examination, ultrasonography, and laboratory testing.

Several studies have shown that women with first-trimester bleeding are at a higher risk of complications later in pregnancy. These complications include miscarriage, preterm birth,

placental abruption, preeclampsia, intrauterine growth restriction (IUGR), and low birth weight infants.[3] The severity and duration of bleeding are also important prognostic indicators of pregnancy outcome.

Threatened abortion is the most common presentation among women with early pregnancy bleeding. Although the cervix remains closed and the fetus may still be viable, the condition indicates an increased risk of pregnancy loss.[4] Studies have shown that approximately 30–50% of women presenting with threatened abortion may eventually miscarry.[5]

Advances in diagnostic techniques, particularly transvaginal ultrasonography and serum beta-human chorionic gonadotropin (β-hCG) estimation, have improved the evaluation and management of early pregnancy complications. These tools help differentiate viable pregnancies from those likely to result in miscarriage or ectopic implantation.[6]

Early identification of high-risk pregnancies allows clinicians to provide appropriate counselling and management, thereby improving pregnancy outcomes. Despite its high prevalence, the impact of first-trimester bleeding on maternal and fetal outcomes varies widely among populations and healthcare settings.

In developing countries, limited access to early antenatal care and diagnostic facilities may contribute to delayed diagnosis and poorer outcomes. Therefore, it is important to study the pattern and consequences of first-trimester bleeding in different populations to improve clinical management and preventive strategies.

The present study was conducted to evaluate the fetomaternal outcomes among pregnant women presenting with first-trimester vaginal bleeding attending the obstetrics outpatient department of a tertiary care hospital.

Objectives

Primary Objective

To determine the fetomaternal outcomes in pregnant women presenting with vaginal bleeding during the first trimester.

Secondary Objectives

To determine the etiology of first-trimester bleeding.

To evaluate the association between bleeding and pregnancy complications.

To assess neonatal outcomes among continuing pregnancies.

MATERIALS AND METHODS

Study Design: Prospective observational study.

Study Setting: Department of Obstetrics and Gynaecology, ESIC Model Hospital, Jaipur.

Study Duration: Study conducted over 18 months.

Study Population: Pregnant women presenting with vaginal bleeding within the first 14 weeks of gestation.

Sample Size: The calculated sample size was 154, and after adding 10% attrition, the final sample size was 170 participants.

Inclusion Criteria

- Pregnant women with ≤14weeks gestation
- Positive pregnancy test
- Vaginal bleeding during early pregnancy
- Willing to participate in the study

Exclusion Criteria

- Gestation more than 14 weeks
- Known chronic medical illness
- Patients unwilling to give consent

Data Collection

Detailed clinical information was obtained using a structured proforma including:

- Maternal age
- Gravidity and parity
- Duration and severity of bleeding
- Associated symptoms (pain, clots)
- Ultrasonographic findings

All patients underwent:

General and obstetric examination

- Ultrasound evaluation
- Laboratory investigations including hemoglobin and β-hCG levels.
- Participants were followed until delivery or pregnancy termination to assess maternal and fetal outcomes.

Statistical Analysis: Data were entered into Microsoft Excel and analyzed using descriptive statistics. Results were presented as frequencies, percentages, and tables.

RESULTS

A total of 170 pregnant women with first-trimester vaginal bleeding were included in the study.

Maternal Age Distribution: The majority of participants belonged to the 21–30 years age group (58.8%), which corresponds to the peak reproductive age [Table 1].

Table 1: Age Distribution of Study Participants

Age groups (years)	Number	Percentage(%)
<20	18	10.6
21-25	50	29.4
26-30	50	29.4
31-35	32	18.8
>35	20	11.8

Most cases occurred in women aged 21–30 years, indicating that early pregnancy bleeding is common among women in the active reproductive age group.

Obstetric Diagnosis: Threatened abortion was the most common diagnosis among patients presenting with bleeding [Table 2].

Table 2: Causes of First Trimester Bleeding

Diagnosis	Number	Percentage (%)
Threatened abortion	106	62.4
Missed abortion	22	12.9
Incomplete abortion	18	10.6
Inevitable abortion	12	7.1
Ectopic pregnancy	8	4.7
Molar pregnancy	4	2.3

Threatened abortion accounted for nearly two-thirds of cases, consistent with findings reported in previous studies [7].

Pregnancy Outcome: Out of 170 women, 56 experienced miscarriage while 114 pregnancies continued beyond the first trimester [Table 3].

Table 3. Pregnancy Outcome

Outcome	Number	Percentage(%)
Miscarriage	56	32.9
Pregnancy continued	114	67.1

These findings suggest that although early pregnancy bleeding increases the risk of miscarriage, the majority of pregnancies can still progress normally with proper management.

Maternal Complications in Continuing Pregnancies
Among the pregnancies that continued, several maternal complications were observed [Table 4].

Table 4: Maternal Complications

Maternal complications	Number	Percentage (%)
Pre term labour	17	14.7
Pregnancy induced hypertension	12	10.3
Placental abruption	6	5.2
Premature rupture of membrane	8	7
No complications	71	62.3

Preterm labour was the most common complication among continuing pregnancies.

Neonatal Outcome: Among the continuing pregnancies, neonatal outcomes were evaluated [Table 5].

Table 5: Neonatal Outcomes

Neonatal outcome	Number	Percentage (%)
Live birth	94	82.5
Low birth weight	21	18.4
NICU admission	14	12.3
Still birth	5	4.4

Low birth weight and NICU admission were the most frequent neonatal complications.

DISCUSSION

First-trimester vaginal bleeding remains a major cause of anxiety for pregnant women and a diagnostic challenge for clinicians. The present study aimed to evaluate the fetomaternal outcomes associated with early pregnancy bleeding.

In the current study, the majority of women were aged 21–30 years, which is similar to findings reported by Saraswat et al., who observed that most cases of early pregnancy bleeding occurred among women in their twenties.[8] This age group represents the peak reproductive period, explaining the higher frequency of cases.

Threatened abortion was the most common diagnosis in the present study, accounting for 62.4% of cases. Similar findings have been reported in other studies, where threatened abortion constituted the majority of early pregnancy bleeding cases.[9] The presence of vaginal bleeding with a closed cervix and viable fetus characterizes threatened abortion and requires close monitoring.

The overall miscarriage rate in this study was 32.9%, which is consistent with previous reports suggesting that approximately 30–40% of women with early pregnancy bleeding may experience pregnancy loss.[10] The risk of miscarriage is particularly high in cases with heavy bleeding, associated abdominal pain, or abnormal ultrasound findings.

Among pregnancies that continued beyond the first trimester, several maternal complications were observed. Preterm labour was the most common complication, occurring in 14.7% of cases. This finding supports previous studies that have

demonstrated a strong association between early pregnancy bleeding and preterm delivery.[11]

Pregnancy-induced hypertension was observed in 10.3% of patients, which may be related to placental dysfunction following early pregnancy complications. Placental abnormalities resulting from early bleeding may impair placental development and increase the risk of hypertensive disorders of pregnancy.[12]

Neonatal outcomes in this study also reflected increased risk among pregnancies complicated by first-trimester bleeding. Low birth weight was observed in 18.4% of neonates, which is comparable to results reported by Weiss et al.[13] Reduced placental perfusion and fetal growth restriction may contribute to this outcome.

NICU admission was required in 12.3% of neonates, indicating that early pregnancy bleeding may have long-term implications for neonatal health. However, despite these complications, the majority of pregnancies resulted in live births.

The findings of this study highlight the importance of early antenatal care and prompt evaluation of vaginal bleeding during pregnancy. Ultrasonography plays a critical role in determining pregnancy viability and identifying potential complications.

Proper counselling and close follow-up of patients presenting with first-trimester bleeding can help reduce anxiety and improve pregnancy outcomes. Women with early pregnancy bleeding should be considered a high-risk group and monitored accordingly.

CONCLUSION

First-trimester vaginal bleeding is a common obstetric problem associated with increased risk of miscarriage and adverse pregnancy outcomes. In the present study, threatened abortion was the most frequent diagnosis, and approximately one-third of pregnancies resulted in miscarriage.

Among continuing pregnancies, complications such as preterm labour, pregnancy-induced hypertension, and low birth weight were observed. Despite these risks, the majority of pregnancies resulted in live births with appropriate monitoring and management.

Early diagnosis, regular antenatal care, and timely intervention are essential to improve fetomaternal outcomes in pregnancies complicated by first-trimester bleeding.

REFERENCES

1. Cunningham FG, et al. Williams Obstetrics. 25th ed. New York: McGraw Hill; 2018.
2. Hasan R, et al. First-trimester vaginal bleeding and pregnancy outcome. Obstet Gynecol. 2009;114:860-867.
3. Saraswat L, et al. Pregnancy outcomes after first trimester bleeding. BJOG. 2010;117:245-252.
4. Everett C. Incidence and outcome of bleeding before the 20th week of pregnancy. BMJ. 1997;315:32-34.
5. Johns J, Jauniaux E. Threatened miscarriage as a predictor of pregnancy outcome. Obstet Gynecol. 2006;107:845-850.
6. Doubilet PM, Benson CB. First trimester ultrasound evaluation. Radiology. 2013;267:14-25.
7. Batzofin JH, et al. Outcome of early pregnancy bleeding. Obstet Gynecol. 1984;63:515-518.
8. Saraswat L, et al. Outcomes following threatened miscarriage. BJOG. 2010;117:245-252.
9. Johns J, Hyett J, Jauniaux E. Obstetric outcome after threatened miscarriage. Obstet Gynecol. 2003;102:483-487.
10. Hasan R, et al. Predictors of miscarriage in early pregnancy. Obstet Gynecol. 2010;115:1211-1218.
11. Weiss JL, Malone FD. Threatened abortion and risk of preterm delivery. Am J Obstet Gynecol. 2004;190:745-750.
12. Ananth CV, et al. Placental complications and pregnancy outcome. Obstet Gynecol. 2001;98:735-740.
13. Weiss JL, Malone FD. First trimester bleeding and neonatal outcomes. Am J Obstet Gynecol. 2004;190:745-750.