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Original Research Article

# Study of Maternal and Perinatal Outcomes in Pregnant Women with First trimester Vaginal Bleeding in North Karnataka Population

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**Abstract:**

**Background:** Although first trimester vaginal bleeding had normal pregnancy in 50% of cases, vaginal bleeding during the first trimester was associated with spontaneous abortion, miscarriage or ectopic pregnancy, and low birth weight foetuses; hence, it had to be managed meticulously to prevent mortality of the foetus and morbidities in pregnant women.

**Method:** 100 (one hundred) pregnant women with first-trimester vaginal bleeding were studied. Detailed history, Physical and obstetrical examinations were carried out. Blood investigations —CBC, ABO, "Rhtyping," BT, CT, HIV, HBsAg, VDRL, HCV, FBS, TSH, and beta-HCG, and urine analysis was carried out in every patient. USG was performed to determine the period of gestation, cardiac status, the size of the sub-chorionic hemomatoma, the adnexal mass, and the free fluid.

**Results:** The bleeding volume was 22% spotting, 74% had moderate bleeding, and 4% of patients had heavy bleeding. Nulliparity was observed in56%, 1 in 28%, 2 in 10%,>2 in 6% of the patients. History of bleeding was in 34% and history of abortion was 14% patients, 24% premature labour, 6% PROM, 14% placental abruption, 4% was IU death, 4% was IU growth retardation, 48% patients had no complication, 14% had abortion, 8% had termination of pregnancy, 26% had normal vaginal delivery, 30% had caesarean delivery, 10 had poor minute 5 APGAR score, 12% had NICU admission.

**Conclusion:** It is concluded that vaginal bleeding during the first trimester has diagnostic value for maternal and foetal complications, and it is a challenge for obstetricians and gynaecologist to evaluate and treat efficiently to prevent morbidity and fetal mortality.

**Keywords:** First Trimester, Maternal and Fetal, Vaginal Bleeding, Intra Uterine Death.



## Introduction

First trimester vaginal bleeding occurs during the first 12 weeks of pregnancy and by default constitutes threatened abortion until a non-threatening cause is identified [1]. Threatened abortion is a common complication that affects about 25% of all pregnant women [2].

There are various causes of first-trimester vaginal bleeding: obstetrics and non-obstetrics. Obstetric causes include abortion, ectopic pregnancy, gestational trophoblastic disease, and non-obstetric causes include cervical erosion, polyps, malignancy, and ruptured varicose veins. The complications can be pre-term delivery or premature rupture of membrane (PROM). Placenta praevia, placental abruption, pre-eclampsia, anaemia, post-partum haemorrhage, and perinatal complications like intra-uterine growth retardation (IUGR), prematurity, low birth weight, and birth asphyxia [3].

First-trimester vaginal bleeding has been associated with an increased risk of poor obstetric outcomes. Bleeding causes stress and anxiety for the mother as an outcome of pregnancy [4]. Hence, it is a challenge for obstetricians and gynaecologists to diagnose and manage to prevent maternal or foetal mortalities and morbidities because 50% of vaginal bleeding was normal during pregnancy; hence, an attempt is made to evaluate the various clinical manifestations to rule out the cause of first-trimester vaginal bleeding.

## Material and Method

100 (one hundred) pregnant women who visited department of obstetrics and Gynaecology, Faculty of Medical Science, Khaja, Banda Nawaz University, Kalaburgi, Karnataka-585104 were studied.

**Inclusive Criteria:** Pregnant women with a history of bleeding per vaginum during the first trimester were selected for the study.

**Exclusion Criteria:** Women with chronic medical complications, including diabetes mellitus, hypertension, a history of infertility, antipsychotic therapy, and immune compromised patients with thrombophilias, were excluded from the study.

**Method:** A detailed obstetrical history was taken regarding the period of amenorrhoea, amount of vaginal bleeding (spotting, moderate, or heavy), colour of bleeding, association with pain, and any other complaint.

A general physical examination and an obstetrical examination were carried out on every patient. Investigations like haemoglobin, bleeding time, clotting time, ABO Rh typing, HIV, serological tests for syphilis, HBsAg, HCV, urine complete, OGTT, serum TSH, and beta HCG were carried out in all patients.

Ultrasonography was done in all patients at the time of admission to determine the site of pregnancy, period of gestation, cardiac activity, size of sub-chorionic haemorrhage, adnexal mass, and free fluid, if any. Patients were followed regularly until delivery. Maternal outcomes like abortion, preterm delivery, preterm premature rupture of membranes, placenta previa, placental abruption, preeclampsia, anaemia, post-partum haemorrhage, and perinatal outcomes like intrauterine growth retardation, preterm low birth weight, birth asphyxia, and foetal death were recorded.

The duration of the study was from May 2021 to June 2023.

**Statistical analysis:** Various clinical manifestations like age groups, parity, bleeding volume, previous history of bleeding abortions, obstetrical complications, and pregnancy outcomes were classified by percentage. The statistical analysis was carried out using SPSS software.

## Observation and Results

**Table 1:** Clinical Manifestation of Obstetrical Patients

1. Age: 24% were aged between 18-25 years, 52% were 26-35 years, and 24% were > 35 years.
2. Bleeding volume: 22% had spotting, 74% had moderate bleeding, and 4% had a heavy bleeding.
3. Parity: 56% had nulliparity, 28% had 1 parity, 10% had 2 parity, and 6% had >2 parity.
4. History of previous bleeding: 34% had a previous history of bleeding.
5. 14% had a history of abortion.

**Table 2:** Study of obstetrical complications in patients with the first trimester bleeding: 24% had premature labour, 6% had premature rupture of membrane (PROM), 14% had placental abruption, 4% had intrauterine death, 4% had intrauterine growth retardation, and 48% had no complication.

**Table 3:** Study of pregnancy outcomes in patients with first trimester vaginal bleeding: 14% abortion, 8% termination of pregnancy, 26% normal vaginal delivery, 30% caesarean section, 10% poor minute 5 APGAR score, and 12% admitted to the NICU.

**Table 1: Clinical manifestation of obstetrical patients (No. of Patients: 100)**

| Manifestation | Age | No. of patients | Percentage |
|---|---|---|---|
| a) Age | 18-25 | 24 | 24% |
| | 26-35 | 52 | 52% |
| | > 35 | 24 | 24% |
| b) Bleeding volume in current pregnant | Spotting | 22 | 22% |
| | Moderate | 74 | 74% |
| | Heavy | 4 | 4% |
| c) Parity | 0 | 56 | 56% |
| | 1 | 28 | 28% |
| | 2 | 10 | 10% |
| | > 2 | 6 | 6% |
| d) History of previous bleeding | Yes | 34 | 34% |
| | No | 66 | 66% |
| e) History of abortion | Yes | 14 | 14% |
| | No | 86 | 86% |

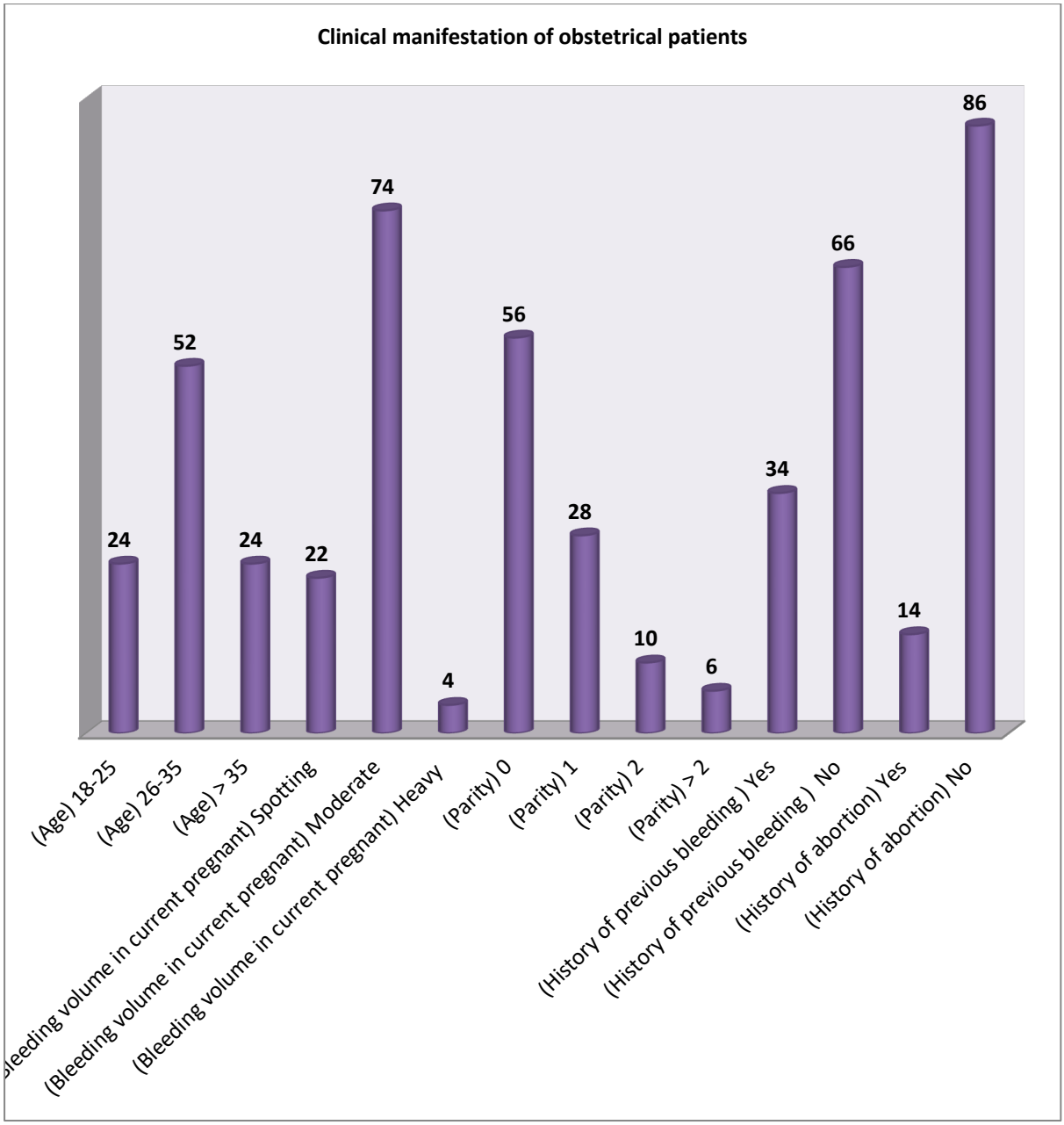


**Figure 1: Clinical manifestation of obstetrical patients**

**Table 2: Study of obstetrical complications in patients with first trimester bleeding** (No. of Patients: 100)

| Complications | No. of patients | Percentage (%) |
|---|---|---|
| Premature Labour | 24 | 24% |
| Premature rupture of membrane | 6 | 6% |
| Placental abruption | 14 | 14% |
| Intra Uterine death | 4 | 4% |
| Intra uterine growth retardation | 4 | 4% |
| No complications | 48 | 48% |

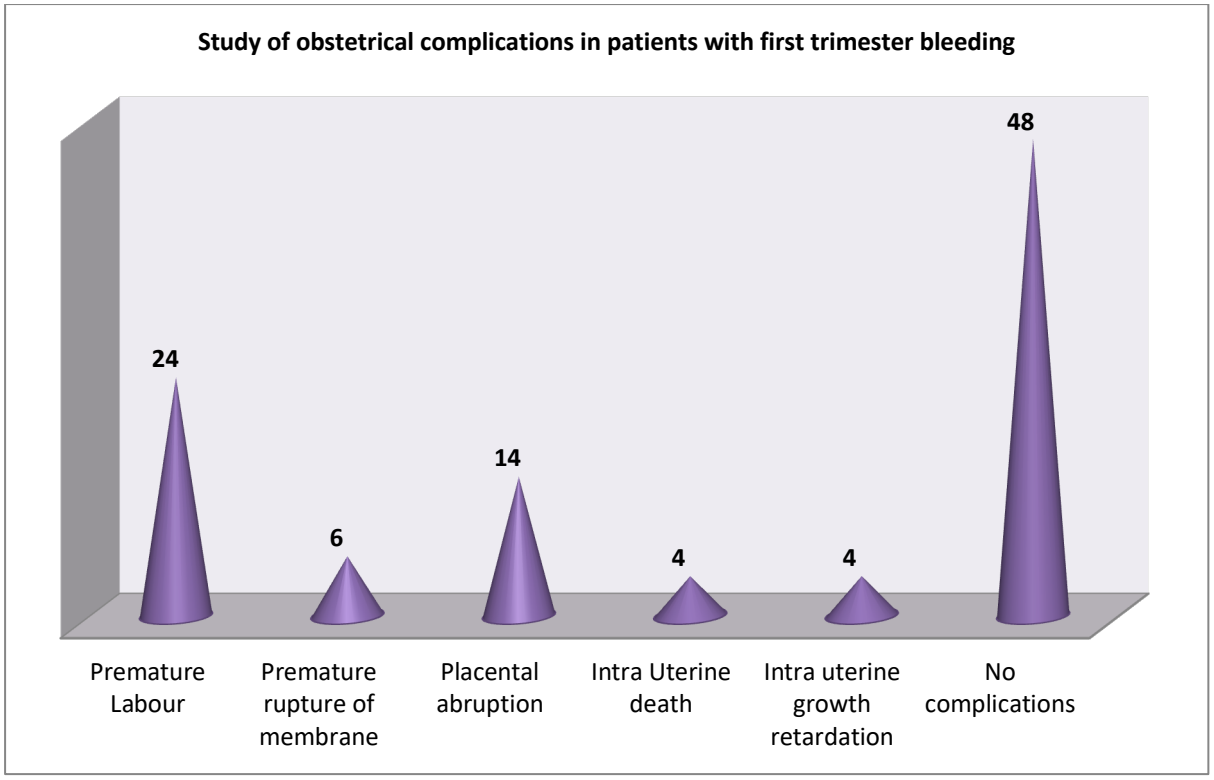


**Figure 2: Study of obstetrical complications in patients with first trimester bleeding**

**Table 3: Study of pregnancy outcomes in patients with first trimester vaginal Bleeding (No. of Patients: 100)**

| Pregnancy outcome | No. of patients | Percentage (%) |
|---|---|---|
| Abortion | 14 | 14% |
| Termination of pregnancy | 8 | 8% |
| Normal vaginal delivery | 26 | 26% |
| Caesarean section | 30 | 30% |
| Poor Minute 5 APGAR score | 10 | 10% |
| Admission in NICU | 12 | 12% |

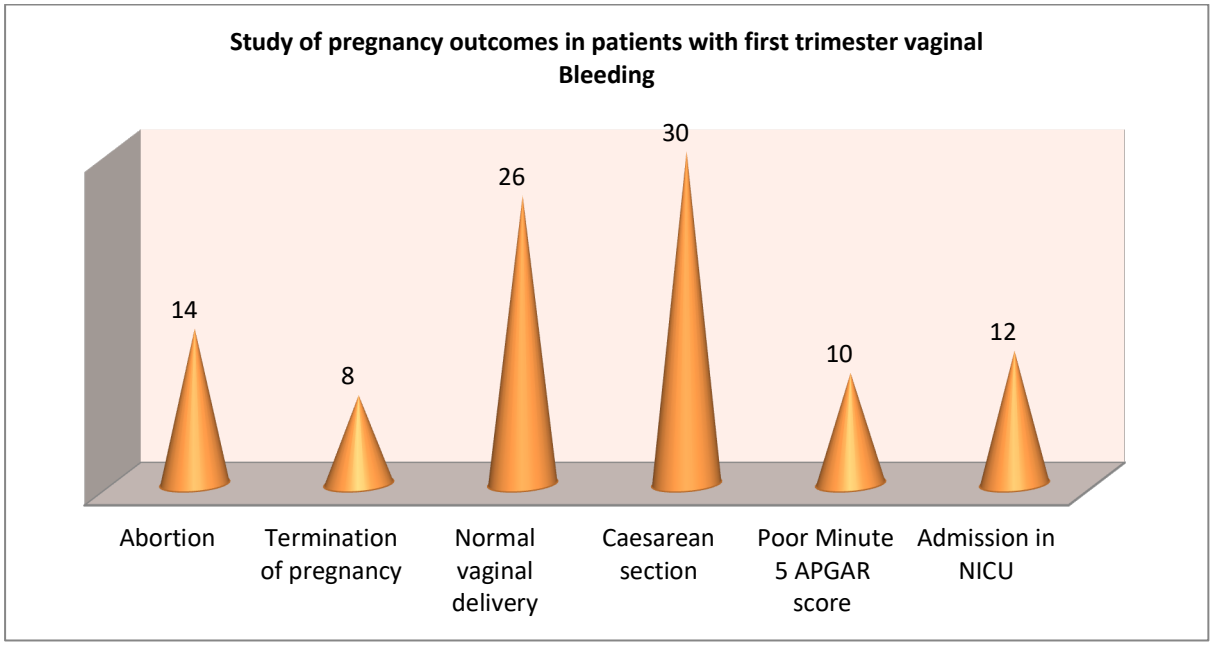


**Figure 3: Study of pregnancy outcomes in patients with first trimester vaginal Bleeding**

## Discussion

Present study of maternal and perinatal outcomes in pregnant women with first trimester vaginal bleeding in the north Karnataka population. The clinical manifestations included Age: 24% were 18–25 years old, 52% were 26–35 years old, and 24% were more than 35 years old. Bleeding volume: 22% of pregnant women had only spotting, 74% had moderate bleeding, and 4% had heavy bleeding. 56% were nulliparous, 28% had 1 parity, 10% had 2, 6% had more than 2 parity. 34% had a history of bleeding, and 14% had a history of abortion (Table 1). 24% had premature labour, 6% had PROM, 14% had placental abruption, 4% had intra-uterine death, 4% had intra-uterine growth retardation, and 48% of pregnant women had no complications (Table 2).

In the study of pregnancy outcomes in patients with first trimester vaginal bleeding, 14% had abortion, 8% had termination of pregnancy, 26% had normal vaginal delivery, 30% had caesarean delivery, 10% had a poor minute 5 APGAR score, and 12% were admitted to the NICU (Table 3). These findings were more or less in agreement with previous studies [5,6,7].

The reason for the association between first-trimester bleeding and adverse pregnancy outcomes is poorly understood because sometimes bleeding in the first trimester may be associated with a chronic inflammatory reaction in the decidua. It is also known that, in about two-thirds of early pregnancy failures, there is evidence of defective placentation, characterised by thinner and fragmented trophoblast cells and reduced cyto-trophoblast invasion of spiral arterioles, leading to vaginal bleeding during pregnancy.

It is reported that vaginal bleeding during the first trimester is associated with an increased risk of low birth weight, preterm birth, still birth weight, death, and congenital malformations in infants [8]. If untreated, it may lead to a threatened miscarriage. It was also noted that spontaneous pregnancy loss occurs in the first trimester with vaginal bleeding followed by heavy bleeding [9].

Some studies define the first trimester up to the 12th week, while some authors claim the first trimester up to the 14th week of pregnancy. Vaginal bleeding is associated with intrauterine infection, and foetal anoxia has been suggested as a teratogen in pregnancies complicated by early bleeding [10,11].

Placental infarction, decidual haemorrhage, and necrosis accompanying vaginal bleeding may lead to intrauterine infection, placental abnormality, and poor foetal growth. Threatened abortion is the result of severe intrauterine infection, but non-infectious vaginal bleeding was also reported in many cases. It is also reported that the quantity of vaginal bleeding cannot predict maternal or foetal complications.

## Summary and Conclusion

In the present study of maternal and perinatal outcomes in pregnant women with first trimester vaginal bleeding, there was an increased risk for spontaneous pregnancy loss and adverse pregnancy outcomes like preterm birth, anteprartum haemorrhage, inter-uterine growth retardation, low birth weight, perinatal mortality, and admission to the neonatal intensive care unit, but there was no significant increase in incidence of preeclampsia or anaemia.

Such pregnancies demand an early approach to an obstetrician and gynaecologist with a well-equipped medical centre so that the predicted risk can be reduced or prevented. However, the present study demands further pathophysiological, genetic, nutritional, and hormonal studies because the exact pathogenesis of vaginal bleeding during early pregnancies is still unclear.

### Limitation of study:

Owing to the tertiary location of the present hospital and the small number of patients, we have limited results.

The present study was approved by the Ethical Committee of the Faculty of Medical Science, Khaja, Banda Nawaz University, Kalaburgi, Karnataka-585104.

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