

**Study of Maternal and Perinatal Outcomes in Pregnant Women with First Trimester Vaginal Bleeding**Nadella Mounika<sup>1</sup>, Kesari Sravani<sup>2</sup><sup>1,2</sup>Assistant Professor, Department of Obstetrics and Gynaecology NRI, Medical College, Chinnakakani, Andhra Pradesh-522508

Received: 25-07-2023 / Revised: 28-08-2023 / Accepted: 30-09-2023

Corresponding author: Dr. Kesari Sravani

Conflict of interest: Nil

**Abstract:****Background:** Vaginal bleeding during the first trimester of pregnancy is associated with spontaneous abortion, ectopic pregnancy or preterm labour and a low birth weight foetus, and 50% of vaginal bleeding had a normal pregnancy.**Method:** 150 pregnant women with first-trimester vaginal bleeding were studied. General and Obstetrical examinations were carried out. Blood examination included Hb%, CT, BT, ABO Grouping, "Rh" typing, HIV, syphilis, HCV, HBsAg, OGTT, TSH, and urine analysis in every patient. USG was performed to determine the period of gestation, cardiac activity, the size of the sub-chorionic hemomatoma, the adnexal mass, and the free fluid.**Results:** The clinical manifestations were: 36 (24%) were aged between 18-25, 78 (52%) were aged between 26-35, 36 (24%) were >35 years old. In the bleeding volume study, 111 (74%) had spotting, 33 (22%) had moderate, and 6 (4%) had a high volume of bleeding. No parity in 84 (56%), 1 in 42 (28%), 2 in 15 (10%), or 51 (34.1%) had a history of previous bleeding. 21 (14%) had a history of abortion, 36 (24.1%) had premature rupture of membranes, 21 (14%) had placental abruption, 6 (4%) had IU death, and 6 (4%) had IU growth retardation. 30 (20%) had abortions, 57 (38%) had normal vaginal deliveries, 63 (42%) had caesarean sections, 18 (12%) had a poor 5 minute Apgar score, and 24 (16%) were admitted to the NICU.**Conclusion:** In the present pragmatic study, it is revealed that vaginal bleeding in first trimester of pregnancy will have complications during pregnancy and foetal complications. Hence, such cases, if not treated, may lead to morbidity and mortality for both mother and foetus.**Keywords:** obstetrical complications, volume of bleeding, threatened abortion, APGAR score.

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**Introduction**

First trimester bleeding is a common complication that affects 20–25% of all pregnancies. Vaginal bleeding in the first trimester of pregnancy is associated with spontaneous abortion / miscarriage, ectopic implantation, hydatiform mole, preterm delivery, and low birth weight. It is reported that 50% of women who undergo an emergency due to vaginal bleeding will go on to have a normal pregnancy [1]. Vaginal bleeding is a relatively common event in the first trimester, reported to occur in 15% to 25% of all pregnancies [2,3]. It was also reported that vaginal bleeding is associated with many other complications during pregnancy. Vaginal bleeding can be a normal sign of implantation of pregnancy, may herald the initiation of spontaneous abortion, or may be the sign of a pathological condition such as ectopic pregnancy or gestational trophoblastic disease [4]. Vaginal bleeding after confirmation with a positive pregnancy test requires further assessment in order to identify normal or abnormal development of

pregnancy or pathological condition that requires a complete evaluation of previous histories of abortion, bleeding during pregnancy, volume of bleeding in the current pregnancy, and placental abruption. Hence, an attempt was made to evaluate the causes of vaginal bleeding and outcomes of pregnancies.

**Material and Method**

150 (one hundred and fifty) pregnant women visited the obstetrics and gynaecology department of NRI Medical College Hospital in Chinakakani, Andhra Pradesh-522508 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, 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, and 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 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 - 36 (24%) were aged between 18-25 years, 78 (52%) were aged between 26-35 years, and 36 (24%) were > 35 years of age.
2. Bleeding volume in current pregnancy: 111 (74%) had spotting, 33 (22%) had moderate bleeding, and 6 (4%) had high (score) bleeding.
3. Parity - 84 (56%) had 0 parity, 42 (28%) had 1 parity, 15 (10%) had 2 parity, and 9 (6%) had >2 parity.
4. History of previous bleeding – 51 (34%) yes, 99 (66%) No
5. History of abortion – 21 (14%) Yes, 129 (86%) No

**Table-2:** Study of obstetrical complications in patients with the first trimester Bleeding: 36 (24%) premature labour, 9 (6%) premature rupture of membrane, 21 (14%) placental abruption, 6 (4%) intrauterine death, 6 (4%) intrauterine growth retardation, and 72 (48%) had no complication.

**Table-3:** Study of pregnancy outcomes in patients with trimester vaginal bleeding: 30 (20%) abortion, 15 (10%) termination of pregnancy, 57 (38%) normal vaginal delivery, 63 (42%) caesarean section, 18 (12%) poor minute 5 APGAR score, and 24 (16%) admitted to the NICU.

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

Manifestation	Age	No. of patients (150)	Percentage
a) Age	18-25	36	24%
	26-35	78	52%
	> 35	36	24%
b) Bleeding volume in current pregnant	Spotting	111	74%
	Moderate	33	22%
	High	6	4%
c) Parity	0	84	56%
	1	42	28%
	2	15	10%
	> 2	9	6%
d) History of previous bleeding	Yes	51	34%
	No	99	66%
e) History of abortion	Yes	21	14%
	No	129	86%

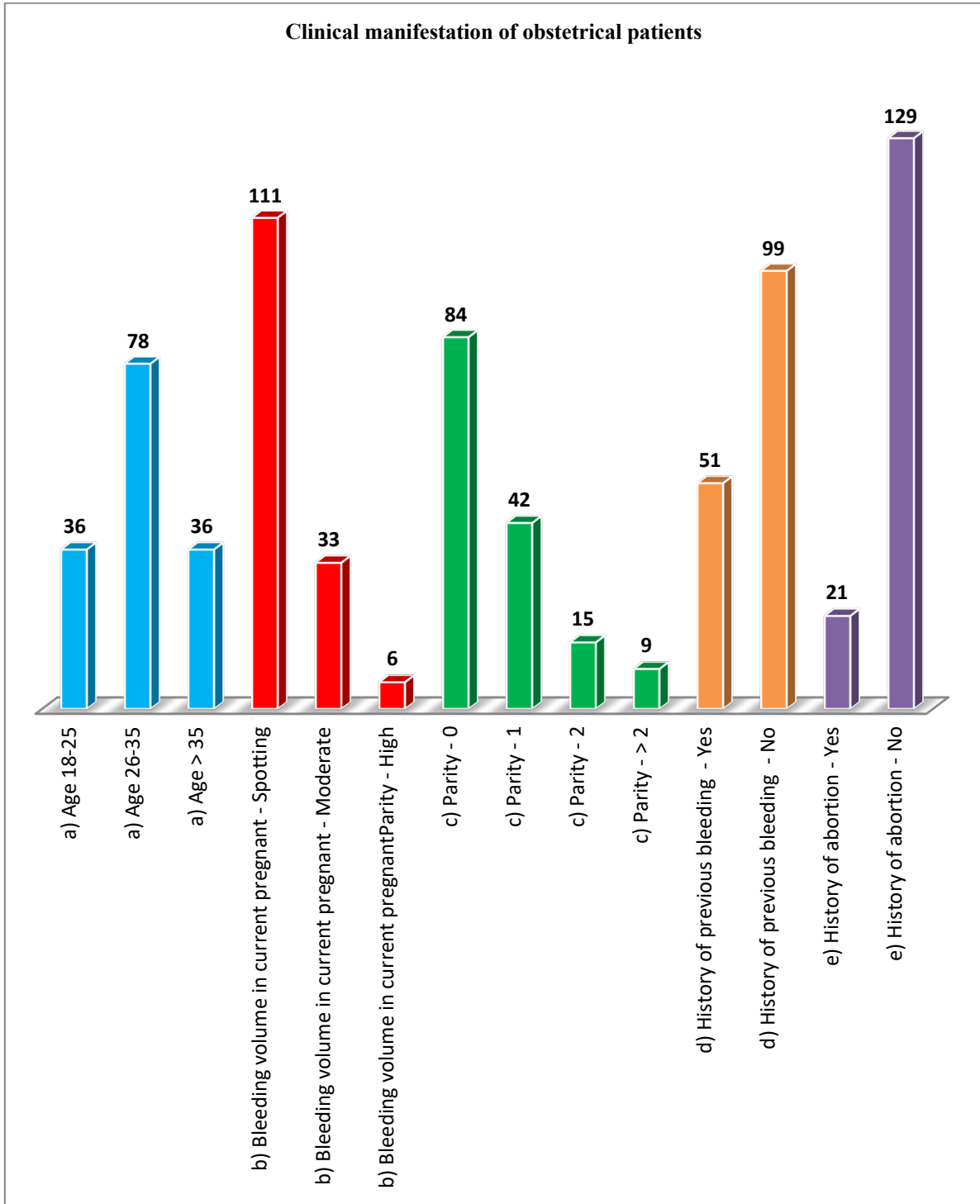


Figure 1: Clinical manifestation of obstetrical patients

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

Complications	No. of patients (150)	Percentage (%)
Premature Labour	36	24
Premature rupture of membrane	9	6
Placental abruption	21	14
Intra Uterine death	6	4
Intra uterine growth retardation	6	4
No complications	72	48

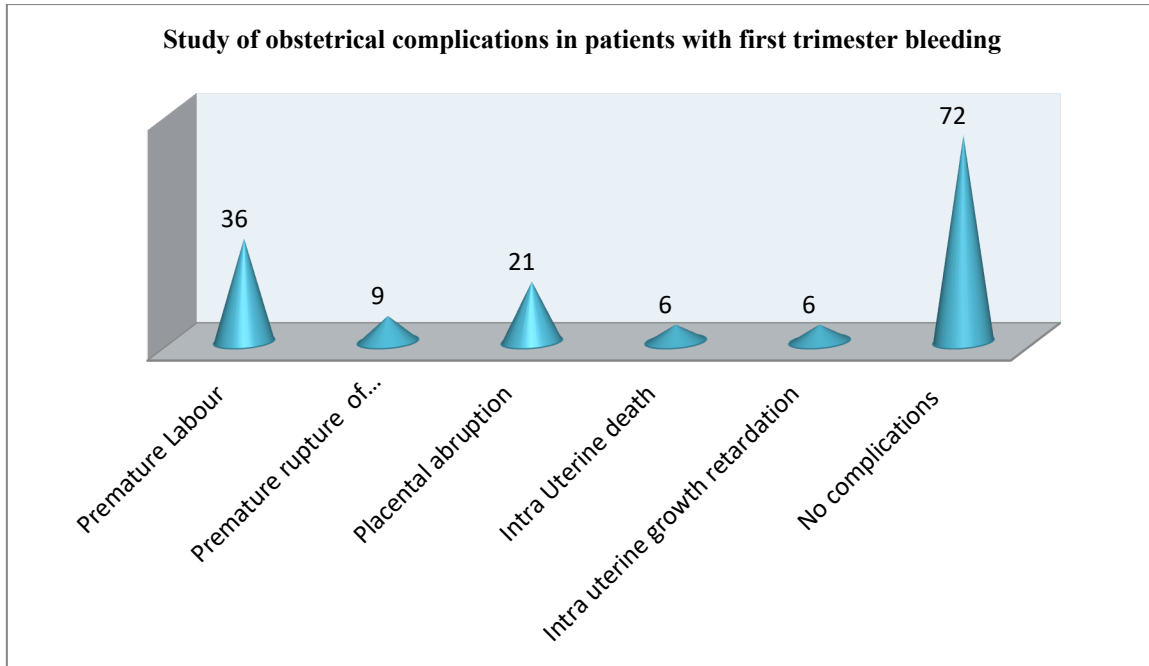


Figure 2: Study of obstetrical complications in patients with first trimester bleeding

Table 3: Study of pregnancy outcomes in patients with first trimester vaginal bleeding

Pregnancy outcome	No. of patients (150)	Percentage (%)
Abortion	30	20
Termination of pregnancy	15	10
Normal vaginal delivery	57	38
Caesarean section	63	42
Poor Minute 5 APGAR score	18	12
Admission in NICU	24	16

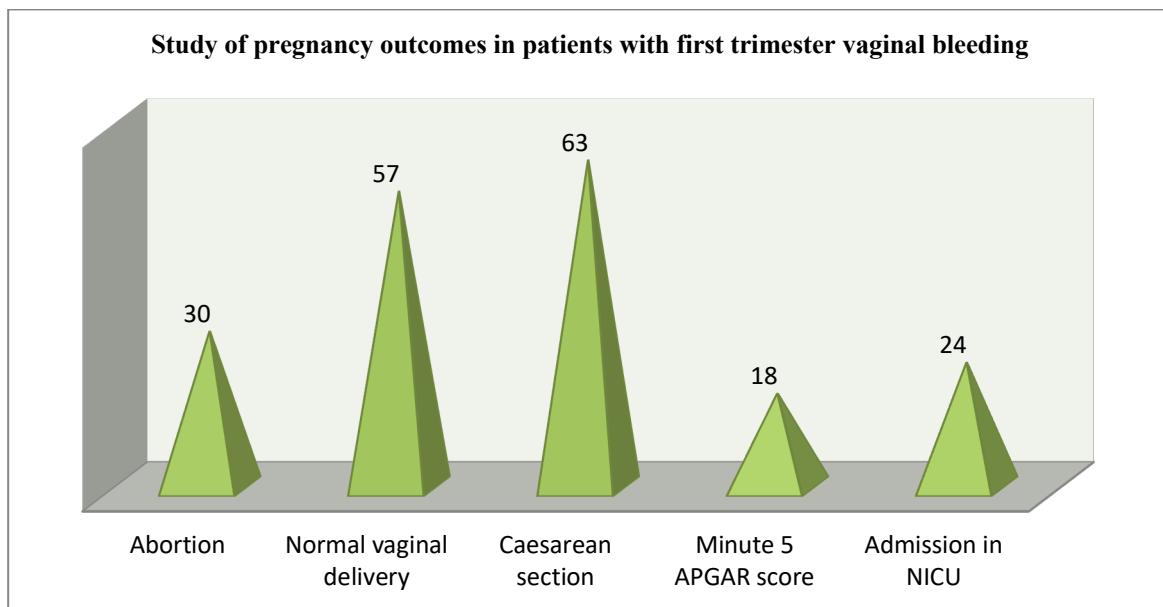


Figure 3: Study of pregnancy outcomes in patients with first trimester vaginal bleeding

**Discussion**

Present study of maternal and perinatal outcome in pregnant women with first trimester vaginal bleeding in Andhra Pradesh population. The clinical manifestations (A) Age – 36 (24%) were aged between 18-25, 78 (52%) were aged between 26-

35, 36 (24%) were > 35 years. (B) Bleeding volume study in current pregnancy 111 (74%) had spotting, 33 (22%) had moderate bleeding, and 6 (4%) had severe bleeding. (C) 84 (56%) had zero parity, 42 (28%) had 1, 15 (10%) had 2, 9 (6%) had >2, 51 (34%) had a previous history of bleeding,

and 21 (14%) had a history of abortion (Table 1). The obstetrical complications were: 36 (24%) had premature labour, 9 (6%) had premature rupture of membrane, 21 (14%) had placental abruption, 6 (4%) had intra-uterine death and 6 (4%) had intra-uterine growth retardation (Table 2). The outcomes of the pregnancy in patients with first trimester vaginal bleeding were: 30 (20%) had abortion, 57 (38%) had normal vaginal delivery, 63 (42%) had caesarean section, 18 (12%) had a poor minute 5 APGAR score, and 24 (16%) 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 cytotrophoblast 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].

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, antepartum

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, the small number of patients, we have limited results.

The present study was approved by the Ethical Committee of NRI Medical College Hospital, Chinnakakani, Andhra Pradesh (522508).

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