

TO EVALUATE PREGNANCY OUTCOME OF PATIENTS WITH FIRST TRIMESTER VAGINAL BLEEDING

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ABSTRACT

Introduction: Vaginal bleeding during obstetrics can cause anxiety and increase pregnancy complications. First trimester bleeding, primarily caused by molar pregnancy, implantation bleeding, miscarriages, ectopic pregnancy, and cervical pathology, results in nearly half of pregnancies. Early pregnancy bleeding poses a threat to embryo development. **Aims:** The study aims to investigate the etiological factors, prevalence, and pregnancy outcomes of patients experiencing first trimester vaginal bleeding. **Methodology:** This study, conducted at a tertiary care center, involved pregnant women with first-trimester vaginal bleeding. The population included singleton pregnant women, those with multiple pregnancies, and those who did not consent. Data was collected through a structured questionnaire, clinical assessments, and laboratory investigations. **Results:** The study reveals first trimester vaginal bleeding is primarily caused by anatomical abnormalities, infections, endocrine factors, chromosomal anomalies, unexplained cases, ectopic pregnancies, and autoimmune causes, with most successful pregnancies ending in abortion. **Discussion:** Vaginal bleeding in the first trimester of pregnancy affects 16-25% of women, leading to emergency admissions and ultrasounds. Early diagnosis is crucial for saving life. **Conclusion:** The study found that 72.3% of pregnancies continued, with 67% continuing till term, with full-term deliveries common. Early monitoring of bleeding is crucial for improved maternal and fetal outcomes..

INTRODUCTION

Vaginal bleeding during obstetrics can cause anxiety and increase the risk of other pregnancy complications. Pregnancies complicated by bleeding typically progress beyond 20 weeks, with 15% experiencing ectopic pregnancy, 0.2% vesicular mole, and 30% miscarriage. [1]

20% of pregnant women experience vaginal bleeding before 12 weeks, causing maternal anxiety and potentially leading to unfavorable outcomes for both mothers and fetuses. [2]

First trimester vaginal bleeding, primarily caused by molar pregnancy, implantation bleeding, miscarriages, ectopic pregnancy, and cervical pathology, results in nearly half of pregnancies involving bleeding. [3,4]

Early pregnancy bleeding poses a significant threat to embryo development, often caused by abortion, ectopic pregnancy, and molar pregnancy. It can indicate implantation, spontaneous abortion, or pathologic conditions like ectopic pregnancy or gestational trophoblastic disease. [5]

Pregnancy outcomes are influenced by gestational age and bleeding intensity, leading to poor outcomes for both mother and fetus. Abortion risk factors include maternal age, uterine abnormalities, and diabetes. Early pregnancy hemorrhage prevalence varies widely, from 7% to 24%, possibly due to research design variations. [6]

To plan prenatal care and prevent complications, expectant women and physicians should understand the pregnancy outcome after first trimester vaginal bleeding. While studies have assessed fetus effects, few mention mother effects. [7]

Women with bleeding in the first trimester of pregnancy are more likely to develop bleeding in the second and third trimesters due to placenta previa, disruption, and unknown causes. This can lead to growth failure, low birth weight, and poor obstetric outcomes. [8]

The research aims to investigate the etiological factors and pregnancy outcomes of patients experiencing first trimester vaginal bleeding.

AIM AND OBJECTIVES

The study aims to investigate the etiological factors, prevalence, and pregnancy outcomes of patients experiencing first trimester vaginal bleeding.

METHODOLOGY

Study Setting

This study was conducted in the Department of Obstetrics and Gynecology at a tertiary care center.

Study Period

The study was carried out over a period of one and a half years.

Study Population

The study included pregnant women who attended the Department of Obstetrics and Gynecology with first-trimester vaginal bleeding.

Inclusion Criteria

The study includes pregnant women in their first trimester with vaginal bleeding, willing to participate and provide informed consent, and those with a singleton pregnancy.

Exclusion Criteria

The study excluded women with multiple pregnancies, known uterine or adnexal pathology, bleeding disorders, or those who did not consent to participate.

The study used a purposive sampling technique to select subjects who met inclusion and exclusion criteria for first trimester vaginal bleeding. Patients attending the OPD who presented with first-trimester vaginal bleeding were evaluated for eligibility. Data was collected using a

structured questionnaire, clinical assessment, and laboratory investigations. Demographic details, obstetric history, medical history, and details of current pregnancy were collected. Clinical assessments included physical examination, obstetric ultrasound, and monitoring for complications during antenatal care. Laboratory investigations included hemoglobin levels, thyroid function tests, and blood glucose levels. Fetal and maternal outcomes were assessed, including complications during antenatal care, mode of termination, and mode of delivery. Variables included maternal age, gestational age, bleeding volume, past obstetric history, medical history, complications during antenatal care, and fetal complications. Statistical analysis was performed using SPSS software, with a p-value of <0.05 considered statistically significant. The study followed ethical principles and obtained written informed consent from participants.

RESULTS

Table 1: The etiological factors for first trimester vaginal bleeding and their prevalence

Variables	Cases	Percentage
Chromosomal Anomalies	14	14.9%
Infections	15	16.0%
Autoimmune	8	8.5%
Anatomical abnormalities (Uterine + cervical)	21	22.3%
Endocrine	14	14.9%
Unexplained	11	11.7%
Teratogenic	4	4.3%
Ectopic Pregnancy	5	5.3%
Trauma	1	1.1%
Radiation exposure	1	1.1%
Total	94	100.0%

Table 1 reveals etiological factors for first trimester vaginal bleeding, with anatomical abnormalities (22.3%) being the most common, followed by infections (16.0%), endocrine factors, and chromosomal anomalies (14.9%), unexplained cases (11.7%), ectopic pregnancies (5.3%), and autoimmune causes (8.5%).

Table 2: Cases distribution according to outcome of pregnancy

Outcome of Pregnancy	No. of Cases	Percentage
Aborted	26	27.7%
Continued Pregnancy	68	72.3%

Table 2 shows a majority of successful pregnancies (72.3%) in the study, with all cases announcing their abortion within 24 weeks of gestation.

Table 3: Distribution of cases according to diagnosis in abortion

Diagnosis	No. of Cases	Percentage
complete abortion	1	3.8%
missed abortion	10	38.5%
incomplete Abortion	2	7.7%
Ectopic	5	19.2%
Congenital fetal anomalies	8	30.8%
Total	26	100.0%

Table 3 shows a distribution of abortion cases based on diagnosis, with missed abortions accounting for 38.5%, complete abortions accounting for 3.8%, ectopic pregnancies accounting for 19.2%, and congenital fetal anomalies accounting for 30.8%.

Table 4: Age wise distribution of the cases

Age group	No. of Cases	Percentage
18 - 21 years	26	27.7%
22-25 years	39	41.5%
26-29 years	21	22.3%
30-33 years	8	8.5%
Total	94	100.0%

Table 4 shows age distribution of cases, with most aged 22-25 years. Out of 94 cases, 41.5% were aged 22-25, 27.7% 18-21, 22.3% 26-29, and 8.5% 30-33 years.

Table 5: Distribution of cases according to gravida

Gravida	No. of Cases	Percentage
One	53	56.4%
Two	29	30.9%
Three	9	9.6%
More than three	3	3.2%
Total	94	100.0%

Table 5 shows that the majority of cases were classified as gravida One, with 56.4% of the study population experiencing only one pregnancy, followed by 29.8% of women with two pregnancies, and 9.6% of those with three pregnancies.

Table 6: Distribution of cases according to past obstetrics history

Part obstetrics History	No. of Cases	Percentage
History of threatened abortion (<12 weeks)	31	33.0%
History of complete abortion	14	14.9%
History of preterm	5	5.3%

Table 6 reveals that 33.0% of cases had a history of threatened abortion, 14.9% had a complete abortion, and 5.3% had a history of preterm births.

Table 7: Case distribution according to comorbidities

Comorbidity	No. of Cases	Percentage
Anemia	38	40.4%
Thyroid disorder	7	7.4%
Gestational Diabetes Mellitus	12	12.8%

Table 7 reveals anemia (40.4%) as the most prevalent condition among cases, followed by thyroid disorders (7.4%) and gestational diabetes mellitus (12.8%).

Table 8: Case distribution according to complication during ANC period

Complication During ANC Period	No. of Cases	Percentage
PROM	19	20.2%
Premature labour/delivery	5	5.3%
Placenta previa	1	1.1%
Placental abruption	2	2.1%

PIH/Preeclampsia	26	27.7%
GDM	12	12.8%

Table 8 shows ANC case distribution by complication, with 20.2% diagnosed with PROM, 5.3% with labor or delivery, 1.1% with Placenta Previa, 2.1% with Placental Abruption, 27.7% with PHI or Preeclampsia.

Table 9: Distribution of cases according to fetal complications

Fetal Complications	No. of Cases	Percentage
Intra uterine death	2	2.1%
Intra uterine growth retardation	9	9.6%
Colour Doppler changes	22	23.4%
Premature delivery	5	5.3%

Table 9 reveals fetal complications, with 2.1% experiencing intrauterine death, 9.6% experiencing growth retardation, 23.4% experiencing color doppler changes, and 5.3% resulting in premature delivery.

Table 10: Age wise distribution of cases in patients with first trimester vaginal bleeding

Age group	Aborted		Continue Pregnancy		P value
	Cases	Percentage	Cases	Percentage	
18 - 21 years	7	26.9%	19	27.9%	0.921
22-25 years	12	46.2%	27	39.7%	
26-29 years	5	19.2%	16	23.5%	
30-33 years	2	7.7%	6	8.8%	
Total	26	100.0%	68	100.0%	

Table 10 reveals age-wise distribution of first trimester vaginal bleeding cases. In 18-21 years, 26.9% awaited an abortion, while 27.9% continued pregnancy. In 22-25 years, 46.2% awaited an abortion, while 39.7% continued pregnancy. In 30-33 years, 7.7% awaited an abortion. No significant difference found.

Table 11: Distribution of Gravida in patients with first trimester vaginal bleeding

Gravida	Aborted		Continued Pregnancy		P value
	Cases	Percentage	Cases	Percentage	
One	14	53.8%	39	57.4%	0.971
Two	8	30.8%	21	30.9%	
Three	3	11.5%	6	8.8%	
More than three	1	3.8%	2	2.9%	
Total	26	100.0%	68	100.0%	

P value not significant

Table 11 reveals that 53.8% of patients with first trimester vaginal bleeding aborted, while 39.4% continued pregnancy. The remaining cases, 30.8%, 11.5%, and 2.9%, had more than three pregnancies, with no significant difference in outcomes.

Table 12: Comparison of past obstetrics history among patients with first trimester vaginal bleeding

Past obstetrics History	Aborted		Continued Pregnancy		P value
	Cases	Percentage	Cases	Percentage	
History of threatened abortion (<12 weeks)	17	65.4%	14	20.6%	<0.001*

History of complete abortion	4	15.4%	10	14.7%	0.934
History of preterm	1	3.8%	4	5.9%	0.693

*P value significant

Table 12 reveals a significant association between past obstetrics history and first trimester vaginal bleeding. A history of threatened abortion (65.4%) led to 17 aborted pregnancies, while 14.6% continued pregnancy. Complete abortion (15.4%) and preterm births (3.8%) led to 4 aborted pregnancies, while 5.9% continued pregnancy. No significant difference was found.

Table 13: Comparison of comorbidities among patients with first trimester vaginal bleeding

Medical History	Aborted		Continued Pregnancy		P value
	Cases	Percentage	Cases	Percentage	
Anemia	14	53.8%	24	36.8%	0.101
Thyroid disorder	2	7.6%	5	7.3%	0.728
Gestational Diabetes Mellitus	7	26.9	5	7.3%	0.011

Table 13 reveals a statistically significant association between anemia and abortion rates in pregnancies resulting in abortion. Anemia was the most common reason for abortion, followed by thyroid disorders. However, gestational diabetes mellitus was the most common reason for abortion, with 26.9% of cases aborting.

Table 14: Distribution of cases according to mode of delivery in continued pregnancies

Mode of Delivery	No. of Cases	Percentage
Preterm	5	7.4%
Normal vaginal delivery	4	5.9%
LSCS	1	1.5%
Full term	63	92.6%
Normal vaginal delivery	38	55.9%
LSCS	25	36.7%
Total	68	100.0%

Table 14 reveals that 7.4% of live births were preterm, with 63 cases (92.6%) being full-term. Normal vaginal delivery was used in 5.9% of preterm deliveries, while 55.9% were full-term.

Table 15: Distribution of cases according to APGAR score at 1 minute

APGAR score @ 1min	No. of Cases	Percentage
Less than 7	7	10.3%
More than or equal to 7	61	89.7%
Total	68	100.0%

Table 15 reveals a distribution of cases based on APGAR score at 1 minute, with a higher score indicating better outcomes, while a lower score indicates potential distress or immediate medical intervention.

Table 16: Distribution of cases according to birth weight

Birth Weight	No. of Cases	Percentage
<2500 gm	19	27.9%
2500 - 3500 gm	45	66.2%
>3500 gm	4	5.9%
Total	68	100.0%

Table 16 reveals that 66.2% of cases were normal, with 27.9% having a birth weight below 2500 grams, and 5.9% having a birth weight above 3500 grams.

Table 17: Distribution of cases according to admission in NICU

Admission in NICU	No. of Cases	Percentage
Required	12	17.6%
Not Required	56	82.4 %
Total	68	100.0%

Table 17 shows 68 cases, with 82.4% not requiring NICU admission, and 17.6% requiring admission due to medical conditions or concerns, indicating favorable initial neonatal health outcomes.

DISCUSSION

During the first trimester of pregnancy, ovulation, fertilisation, implantation, and organogenesis occur, with vaginal bleeding affecting 16-25% of pregnant women. [9]

First trimester bleeding, causing obstetrical emergency admissions and ultrasounds, can be caused by various reasons like ectopic gestation, incomplete abortion, missed abortion, or gestational tephoblastic disease. [4]

A meta-analysis reveals that vaginal bleeding increases the risk of additional pregnancy problems, with less than 50% developing healthily beyond 20 weeks, 10-15% having ectopic pregnancies, 0.2 percent having hydatidiform moles, and 30% miscarrying. [10]

Pregnant women experiencing bleeding can experience tension, anxiety, and emotional impact due to uncertainty, lack of preventive measures, and emotional impact. Vaginal bleeding during the first trimester is linked to poor pregnancy outcomes. [8]

Pregnant women and obstetricians should consider the outcome of continued pregnancies after the first firmest bleeding, especially in ectopic pregnancy, as timely identification is crucial for saving life. [4]

Transvaginal ultrasonography is a crucial diagnostic tool for patients experiencing first trimester vaginal bleeding, identifying normal or pathological conditions and enabling early intervention. [11]

The study analyzed 94 cases of first trimester vaginal bleeding, focusing on etiological factors and pregnancy outcomes. Results showed anatomical abnormalities accounted for 22.3% of cases, infections accounted for 16.0%, endocrine factors and chromosomal anomalies accounted for 14.9%, unexplained cases comprised 11.7%, ectopic pregnancies occurred in 5.3%, autoimmune causes accounted for 8.5%, and teratogenic factors, trauma, and radiation exposure were noted. [12-16]

The study found that 68 out of 94 cases (72.3%) continued pregnancy, while 27.7% aborted. This is a higher percentage than the 2019 study by HS Kavyashree et al [17], which found that 32% of 200 participants had viable pregnancies and were threatened with abortion. The majority of cases (68%), including 123 cases (61.5%) abortion, 4 cases (4%) ectopic gestation, and 2.5 cases (2.5%) molar gestations, were non-viable.

The study analyzed early pregnancy bleeding cases, focusing on women aged 22-25 years old. The majority of cases were aged between 22 and 25 years old, with 41.5% of cases falling within this age group. The majority of patients were under the age of 30 years. The majority of cases were classified as gravida One, with 56.4% of cases experiencing only one pregnancy. The gravida Two category followed with 29 cases, indicating a significant representation of women with two pregnancies. Gravida Three accounted for 9 cases (9.6%), while "more than three"

pregnancies constituted a smaller proportion (3.2%). Bleeding volume and characteristics are associated with poor maternal and foetal outcomes. [18, 19]

The study by HS Kavyashree et al (2019) found that 60% of pregnancies were multi gravida, while 40% were primi gravida. Vaginal bleeding occurs in 15-25% of pregnancies, with half continuing the pregnancy. The most prevalent causes of first trimester bleeding are abortion and EP, with visible genetic abnormalities found in more than half of spontaneous abortions. Anemia was the most prevalent condition among the cohort, followed by thyroid disorders and Gestational Diabetes Mellitus. Premature rupture of membranes (PROM) was diagnosed in 19.2% of cases, followed by prenatal labor or delivery, placental abruption, and pregnancy-induced hypertension or preeclampsia in 27.7% of cases. Common complications included LBW, Placenta Previa, PROM, preterm labor, IUGR, IUD, and perinatal death. Intrauterine death and color doppler changes were common fetal problems in 22 cases (23.4%) and 5 cases (5.3%), respectively. The study emphasizes the need for vigilant monitoring and early interventions in pregnancies complicated by first-trimester bleeding. No significant difference in outcomes was found within age groups, gravidity categories, or among women with more than three pregnancies. [20,21]

The study by Yakıştıran B et al (2016) found that older mothers are more likely to have a history of threatened abortion. In pregnancies with a history of threatened abortion, 65.4% of cases resulted in abortion, while 20.6% continued pregnancy. Preterm birth rates were also higher in the case group, with a higher rate of abortion. The study also found an increased risk of preterm delivery and termination in pregnancies complicated by first-trimester haemorrhage. Anemia was found to be a significant factor in abortion rates, with 53.8% of cases having anemia and 36.8% continuing pregnancy. However, pregnancies with gestational diabetes mellitus showed significant differences, with 26.9% of cases aborting and only 7.3% continuing pregnancy. The study concluded that anaemia history had no significant effect on pregnancy outcomes. [22]

The study found that well-managed thyroid abnormalities did not significantly impact pregnancy outcomes, while pregestational diabetes was linked to higher miscarriage rates. In live births, 7.4% of cases were preterm, while 63.6% were full-term. The study also found that 67.7% of participants with viable pregnancies had term deliveries, 15.6% had preterm deliveries, and 17.2% had abortions. The study also found that 61.7% of cases had an APGAR score of 7 or more, suggesting generally favorable neonatal outcomes with minimal or no immediate medical intervention required. The study also found that neonates with first trimester haemorrhage had low birth weight and an APGAR score of 5 minutes less than 7 in pregnancies with first trimester haemorrhage. [23-27]

The study found that 66.2% of cases had normal birth weight, with a significant difference between preterm and term newborns. Preterm newborns had a mean birth weight of 2.645 ± 0.580 kg, while term newborns had a mean birth weight of 2.645 ± 0.580 kg. The majority of preterm newborns did not require NICU admission, suggesting favorable initial neonatal health outcomes without the need for intensive medical intervention. However, 17.4% of preterm neonates required NICU admission, indicating the need for specialized care due to various medical conditions. Ten newborns (16.7%) required NICU admission, suggesting a higher level of neonatal care due to complications associated with maternal vaginal bleeding in the first trimester. Diagnostic measures such as transvaginal ultrasound and serum β HCG levels are crucial for first trimester bleeding. Transvaginal sonograms of an intrauterine gestational sac

<16mm without an embryo may indicate a viable pregnancy, but miscarriage occurs in two-thirds of cases. [25, 28]

CONCLUSION

The study evaluated pregnancy outcomes in women experiencing first-trimester vaginal bleeding. It found that 72.3% of pregnancies continued, with 67% continuing till term. A history of threatened abortion and diabetes mellitus was associated with abortions. Full-term deliveries were common, with normal vaginal delivery being the most common mode. Early monitoring of bleeding is crucial for improved maternal and fetal outcomes.

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