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Pregnancy Outcome in Women Presenting with Per Vaginal Bleeding in First Trimester of Pregnancy

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Abstract

Background: The first trimester of pregnancy, from the last menstrual period to the end of the 13th week, is a critical period marked by significant changes and rapid development. Vaginal bleeding occurs in 16-25% of pregnancies and is linked to a higher risk of complications. Causes include implantation bleeding, miscarriages, ectopic pregnancy, cervical pathology, and molar pregnancy. Miscarriages affect about 20% of pregnancies, while ectopic pregnancies affect 1.1%. Bleeding can cause anxiety but does not always result in pregnancy termination, and it increases the risk of complications such as preterm delivery, low birth weight, and maternal complications, necessitating close monitoring.

Aim of the study: This study aims to assist general physicians, emergency department doctors, and obstetricians in managing the uncertainties associated with early pregnancy bleeding and to improve counseling practices.

Methods: This prospective observational study was conducted at the Department of Obstetrics and Gynecology (indoor and outdoor) in Bangabandhu Sheikh Mujib Medical University, Dhaka from January 2023 December 2023. Seventy-five pregnant women with first-trimester bleeding were enrolled and analyzed over one year from (start) to (end). Participants had amenorrhea, a positive pregnancy test, and bleeding within the first 12 weeks. Clinical history and gynecological exams were done at the booking visit, with follow-up in antenatal clinics and repeated ultrasounds as needed.

Result: This study involved 75 participants, focusing on women with first-trimester vaginal bleeding. Most women (52%) were aged 30-35 years, with a mean BMI of 25.71±2.53 kg/m². Parity distribution was 52% primigravida and 48% multigravida. 52% had no relevant conception history; 38.67% conceived spontaneously, 6.67% used IVF, and 2.67% IUI. Previous complications included first-trimester bleeding (26.67%) and missed abortion (4%). Specific conditions were rare. Multiple bleeding episodes were reported by 64%, with 40% having fresh bleeding. Premature labor was the most common complication (28%). Full-term delivery occurred in 40% of cases, with 13.33% experiencing IUGR or preterm delivery.

Conclusion: This study highlights the diverse outcomes of pregnancies with first-trimester vaginal bleeding, ranging from full-term deliveries to complications and losses. Emphasizing the importance of individualized care and early intervention, it suggests developing specific management protocols and conducting long-term follow-ups to improve maternal and fetal health outcomes.

Keywords: Pregnancy outcome; per vaginal bleeding; First trimester of pregnancy

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Introduction

The first trimester of pregnancy is the period from the first day of the last menstrual period to the end of the 13th week of gestation. It is a time of significant changes and rapid development for both the mother and the baby [1]. Vaginal bleeding in the first trimester is a frequent occurrence, affecting 16-25% of all pregnancies [2]. Meta-analyses show that vaginal bleeding is linked to a twofold higher risk of additional complications during pregnancy [3]. Bleeding per vagina in the first trimester can be caused by several factors. Implantation bleeding, miscarriages (threatened, inevitable, incomplete and complete miscarriage), ectopic pregnancy and cervical pathology are the major factors besides molar pregnancy leading to first-trimester vaginal bleeding [4,5]. Approximately 20% of pregnancies result in miscarriage, while 1.1% are affected by ectopic pregnancy [6]. Molar pregnancy is a rare cause of early pregnancy bleeding, occurring in 0.14% of cases. It is more prevalent among Asian populations, with an incidence rate of 0.2% compared to lower rates in non-Asians [7]. Although ectopic pregnancy is a less common cause, it is associated with maternal mortality, and the mortality rate is 0.2/1000 [6]. Vaginal bleeding in early pregnancy can cause significant anxiety for both the mother and her family. The outcome, however, is often determined by factors such as the gestational age at the time of bleeding, the underlying cause, and the severity of the bleeding [2]. Bleeding in early pregnancy does not always terminate the pregnancy [8]. About half of the patients who have vaginal bleeding in early pregnancy will have an abortion within 20 weeks of gestation [9]. Factors such as maternal age, systemic conditions like diabetes mellitus and hypothyroidism, infertility treatments, thrombophilia, maternal weight, and structural abnormalities of the uterus have been reported to increase the risk of abortion [10]. The patients whose pregnancy continues have an increased risk of developing complications later on [9]. Pregnant patients who experience early pregnancy bleeding and carry the pregnancy beyond viability are at higher risk of complications, including preterm delivery, low birth weight, perinatal morbidity and mortality, and the birth of babies who are small for their gestational age [11,12]. Maternal complications can include antepartum hemorrhage, manual removal of the placenta, and cesarean delivery [13].

Additionally, heavy bleeding during pregnancy increases the risk of fetal growth restriction, preterm premature rupture of membranes (PPROM), and placental abruption [14]. Therefore, it is necessary to identify women with vaginal bleeding in early pregnancy so that they can be followed up closely for any adverse maternal and perinatal outcomes [9]. The objective of this study was to assess the consequences for women presenting with vaginal bleeding during the first trimester of pregnancy. This study aims to assist general physicians, emergency department doctors, and obstetricians in managing the uncertainties associated with early pregnancy bleeding and to improve counseling practices.

Methodology & Materials

This prospective observational study was carried out on 75 pregnant women presenting with complaints of first-trimester bleeding at the Department of Obstetrics and Gynecology (indoor and outdoor) in Bangabandhu Sheikh Mujib Medical University, Dhaka from January 2023 December 2023. The study spanned for one year from (start) to (end). Patients with a history of amenorrhea and positive pregnancy test with bleeding per vaginum in the first trimester, i.e., first 12 weeks of pregnancy.

In this study, clinical history was taken, followed by a gynecological examination of the participants during the booking visit. The participants were followed up in the antenatal clinic, and repeat ultrasound scans were done if required. The study's design is to study the relationship between variables. The Independent variable of this study was a history of prevaginal bleeding, and the dependent variable was pregnancy outcome. A performance was designed to collect information, and the patient followed until the pregnancy was terminated.

Inclusion criteria:

Less than three months of amenorrhea, positive urine pregnancy test, bleeding per vaginum in the first 12 weeks of pregnancy, and no previous history of cervical and vaginal pathology patients were included in the study.

Exclusion criteria:

Participants refused to give consent; all patients presenting beyond 12 weeks of pregnancy patients with known bleeding tendencies were excluded from the study.

Statistical Analysis

All data were presented in a suitable table or graph according to their affinity. A description of each table and graph was given to understand them clearly. All statistical analyses were performed using the statistical package for the social science (SPSS) program and Windows. Continuous parameters were expressed as mean±SD and categorical parameters as frequency and percentage. The student's t-test made comparisons between groups (continuous parameters). Categorical parameters compared by Chi-Square test.

Result

This study was conducted on 75 participants. The majority of the women (52.00%) presenting with per vaginal bleeding in the first trimester were between the ages of 30-35 years, accounting for the group. Women under the age of 30 comprised 30.67%, while 14.67% of the participants were between 36-40 years. The mean BMI of the participants was 25.71 ± 2.53 kg/m^2. Regarding parity, 52% of the women were

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primigravida, while the remaining 48% were multigravida (Table 1). 52.00% of the women had no applicable history related to their mode of conception, while 38.67% conceived spontaneously. Assisted reproductive techniques such as IVF were used by 6.67% of the women, and 2.67% had conceived through IUI. In terms of complications in previous pregnancies, 26.67% of the women reported a history of bleeding in the first trimester, while 4.00% had experienced a missed abortion. Specific conditions such as anencephaly, oligohydramnios, placenta previa, and preterm premature rupture of membranes (PPROM) were reported by 1.33% of the participants (Table 2). Most of the women with vaginal bleeding conceived spontaneously (72%), and 28% utilized assisted reproductive techniques (Figure 1). Table 3 shows that multiple episodes of bleeding were reported by 64% of women. 40% of those with bleeding had fresh bleeding, and 60% had brownish discharge. The most common complication is premature labor, which accounts for 28.00% of the cases. Other complications involve premature membrane rupture (8.00%), placental abruption (13.33%), intrauterine death (2.67%), and intrauterine growth (4.00%) (Table 4). 30.67% of women with first-trimester vaginal bleeding had an abortion, whereas 2.67% experienced fetal death. Full-term delivery was achieved in 40.00% of cases, with 13.33% each having intrauterine growth retardation (IUGR) or preterm delivery (Table 5).

Table 1: Demographic profile and parity of the study group (n=75)

Variables	Frequency (n)	Percentage (%)
Age group (years)		
<30	23	30.67
30-35	39	52
36-40	11	14.67
> 40	2	2.67
BMI [kg/m^2] Mean ± SD	25.71 ± 2.53	
Parity		
Primi	39	52
Multi	36	48

Table 2: Relation of significant past events with bleeding in first trimester in present pregnancy

History of Previous Pregnancy		Frequency (n)	Percentage (%)
Mode of Conception	IUI	2	2.67
	IVF	5	6.67
	Spontaneous	29	38.67
	Not applicable	39	52
Missed Abortion		3	4
Bleeding in First Term		20	26.67
Anencephaly		1	1.33
Oligohydraminos		1	1.33
Placenta Previa		1	1.33
PPROM		1	1.33

Table 3: Frequency of bleeding among study population (n=75)

History of Bleeding		Frequency (n)	Percentage (%)
Frequency of Bleeding	Once	27	36
	More than once	48	64
Type of Bleeding	Brownish	45	60
	Fresh	30	40

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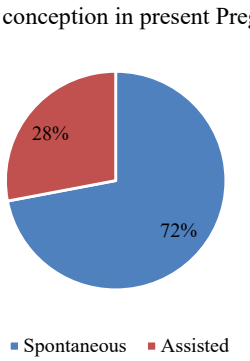

Figure 1: Mode of conception in present pregnancy with bleeding in first trimester

Table 4: Obstetrical complications

Variables	Frequency (n)	Percentage (%)
Premature Labour	21	28
Premature membrane rupture	6	8
Placental abruption	10	13.33
Intrauterine death	2	2.67
Intrauterine growth retardation	3	4
No Complication	10	13.33

Table 5: Analysis of the pregnancy outcome

Final Outcome	Frequency (n)	Percentage (%)
Abortion	23	30.67
Fetal Death	2	2.67
Full term Delivery (Normal/ LSCS)	30	40
IUGR	10	13.33
Pre-term delivery	10	13.33

Discussion

The present investigation is a prospective study encompassing 75 cases of women experiencing bleeding per vaginum during the first trimester or with a history of such bleeding. A significant proportion of participants (52.00%) were within the age range of 30-35 years. The mean age in this study was 34.31±2.17 years, aligning with findings from Zhila et al. (2013), who reported 53% of patients in the 25–34-year age group [15]. In contrast, Jasoliya et al. (2017) identified a predominance of participants under 20 years of age, while Kamble et al. (2017) noted that 52% of subjects were between 21-30 years old [16,17]. Additionally, the mean BMI was 25.71±2.53 kg/m², consistent with the findings of Kaur (2022) [18]. In terms of gravidity, 52.00% of the participants were primigravidae, while 48.00% were multigravidae, mirroring the results of Sarmalkar et al. (2016), which reported an identical distribution of 52% primigravidae and 48% multigravidae. Similarly, Zhila et al. (2013) found that 56.7% of their cohort were primigravidae, and 48% were multigravidae. In contrast, Kamble et al. (2013) reported a higher proportion of primigravidae (64%) compared to multigravidae (36%) [15,17,19]. The incidence of first-trimester bleeding in prior pregnancies was 26.67%, with 4.00% having experienced missed abortions in previous pregnancies. These findings are consistent with Zhila et al. (2013), who reported 33.3% of patients with first-trimester bleeding and 15% with a history of abortion [15]. Regarding conception, 72.00% of the participants in this study achieved spontaneous conception. In comparison, 28.00% required assisted conception of the 75 patients presenting with first-trimester bleeding, 64.00% experienced multiple episodes, with 60.00% reported altered bleeding, and 40.00% had fresh bleeding, findings that echo those of Vashisth (2020) [20]. Premature labor was the most common obstetric complication, occurring in 28.00% of cases. Placental abruption was the second most frequent complication, also accounting for 13.33% of cases, while 13.33% of patients reported no complications. Chandramathi et al. (2021) similarly reported these obstetric outcomes [21]. In terms of medical history, 34.66% of the study population had pre-existing conditions, with diabetes and thyroid disorders being the most prevalent at 17.33% each. Surgical history was unremarkable for 92.00% of patients. Regarding lifestyle factors, smoking was the most frequent personal habit, observed in 10.67% of patients, followed by alcohol use at 6.67%. Hasan et al. (2010) noted that BMI, smoking, and alcohol consumption were not significant predictors of bleeding in their study [22]. The incidence of abortion in this study was 30.67%, while 69.33% of patients progressed beyond the first trimester, which is in line with Rai et al. (2017), who reported an overall abortion rate of 34%. Conversely, Kamble PD et al. (2017) found that 84% of cases resulted in abortion [17,23]. Furthermore, 40.00% of cases resulted in full-term delivery (normal/LSCS) and 13.33% in pre-term delivery, a distribution similar to that observed by Vashisth (2020), who reported full-term and pre-term delivery rates of 40.7% and 12.3%, respectively [20].

Limitations of the study:

- Data collection was based on clinical records and patient reports, which might be subject to recall bias and incomplete information.
- The study did not include a control group of women without bleeding, which could provide a comparative perspective on pregnancy outcomes.

Conclusion And Recommendations

This study provides important insights into the outcomes of pregnancies affected by first-trimester vaginal bleeding. The findings reveal a spectrum of outcomes, including successful full-term deliveries, as well as various complications and pregnancy losses. This variability highlights the need for careful monitoring and individualized management strategies

for women experiencing early bleeding to improve overall pregnancy outcomes. Our findings underscore that while some women with first-trimester bleeding may experience favorable outcomes, others face significant risks such as miscarriage, pre-term delivery, or intrauterine growth retardation. Developing and validating specific management protocols for early pregnancy bleeding could optimize care and reduce complications.

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