



BLEEDING IN FIRST TRIMESTER AND IT'S IMPACT ON FETUS: A PROSPECTIVE STUDY

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ABSTRACT **Introduction:** First trimester bleeding is a concern for both clinician and the patient. 50% patients with bleeding in first trimester loss their pregnancy and If pregnancy continues serious fetal complications may develop later on. **Objectives:** The study aims to find fetal outcome in patients with first trimester bleeding. **Method:** This prospective observational study was done at M.L.N medical college, Prayagraj among patients with bleeding per vagina at ≤ 12 weeks of gestation for a period of one year. All of them were followed till delivery to see any fetal complication developed or not. **Results:** In this study, we included 204 patients, majority were multigravida and between 25-29 years age group. Among them, pregnancy loss occurs in 103 cases. 101 cases who continued pregnancy, majority delivered at term 62 (61.39%). Neonatal complications include LBW in 26 (25.74%), NICU admission 20 (19.80%), stillbirth and early neonatal death in 4 (3.96%) patients each, APGAR score < 7 at 5 mins in 4 (3.96%) and birth asphyxia in 2 (1.98%) patients. **Conclusion:** Pregnancies with bleeding in first trimester should be considered as high-risk pregnancy. Close monitoring and vigilant care to be given to reduce the risk of complications.

KEYWORDS : vaginal bleeding; fetal outcome

INTRODUCTION

The first trimester of pregnancy is a vital phase composed of key physiological processes such as ovulation, fertilization, implantation and development of vital organs (organogenesis). Prevalence of bleeding in first trimester varies, with reported rates ranging from 15% to 25%.^{1,2} For both clinicians & expectant parents, early bleeding often triggers anxiety due to the uncertainty surrounding its cause and potential outcomes.³ Studies indicate that fetal loss can have significant emotional and psychological consequences, increasing the likelihood of emotional wellness issues such as anxiety, depression, and post-traumatic stress disorder (PTSD) in mothers.^{4,5} Managing the emotional and psychological aspects, along with the medical aspects, is important for ensuring good health of both mother and fetus. There are several reasons of early pregnancy bleeding including obstetric and non-obstetric causes. Obstetric causes include implantation bleeding, threatened abortion, missed abortion, complete abortion, incomplete abortion, gestational trophoblastic disease, ectopic pregnancy and non-obstetric causes include any local cervical or vaginal pathology. Aim of this study is to observe the effects of bleeding in first trimester on fetus.

MATERIALS AND METHODOLOGY

An observational study was conducted at department of obstetrics and gynecology, M.L.N Medical college, Prayagraj for a span of one year from April 2023 to March 2024. All the patients who presented with first trimester bleeding at less than 12 weeks of gestation were the study population. Patient with USG confirmed intrauterine pregnancy and who were willing to participate were included in this study. Pregnant women not willing to participate, all patients > 12 completed weeks, molar pregnancy, multiple pregnancies, teenage pregnancy, any congenital anomalies of uterus, any SOL distorting the uterine cavity, local cervical pathology like polyp or erosion and any vaginal lesion causing bleeding, a woman with chronic disease like diabetes, hypertension, bleeding disorder, hepatic diseases and cardiovascular diseases were excluded.

The sample size for the present study was calculated as per the following formula $N = 4pq/E^2$ (B.K Mahajan, medical biostatistics, 8th edition) Where p = prevalence of first trimester bleeding, $q = 1 - p$, E = Allowable error, from previous study (Amirkhani et al., 2013) it was seen that vaginal bleeding in 15-25% of all pregnancies. For sample size calculation we have taken 15% as prevalence rate for the sake of adequate sample size. Hence $p = 0.15$, $q = 0.85$, at 0.05 allowable error, sample size is given by $n = 4 \times 0.25 \times 0.85 / (0.05)^2 = 204$.

Data Collection Procedure

The information from these patients was documented at antenatal OPD.

Ethical Consideration:

The research was initiated after getting the required permission from the institutional ethics committee.

Plan For Data Analysis:

The data was validated and inputted into a Microsoft Excel spreadsheet and all analysis was conducted using Microsoft office 2021.

RESULT

There were 204 patients out of which majority of the patients belong to younger age group (< 30 yrs). Among them, 90 (44.12%) patients were belonging to age group 25-29 years which is highest and followed by 54 (26.47%) patients of age group 20-24 years. There were 18 (8.82%) patients of age group more than 35 years following 42 (20.59%) patients of age group 30-34 years. The mean age of patients were 27.53 years with standard deviation 4.39 years and range from 20 years to 42 years.

Table 1: Age Distribution (n=204)

Age Group	Number of Patients	Percentage
20-24	54	26.47%
25-29	90	44.12%
30-34	42	20.59%
> 35	18	8.82%
Total	204	100.00%
Mean $\pm$ SD (Range) Age- 27.53 $\pm$ 4.39 (20-42) years		

Table 2: Parity Distribution Of Patients (n=204)

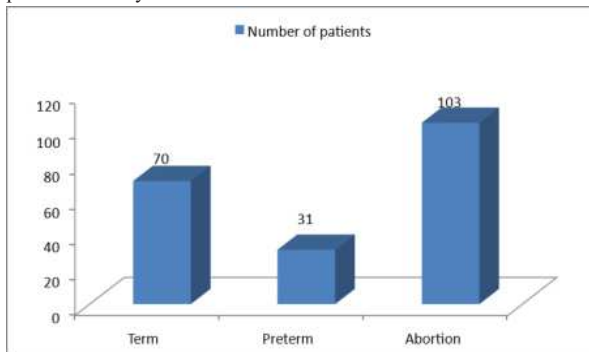
Parity		No of patients	Percentage
Primigravida	G1	54	26.47%
Multigravida	G2	56	27.45%
	G3	48	23.53%
	$\geq G4$	46	22.55%
Total		204	100.00%

Table-2 shows that 150 (73.53%) patients were multigravida in which 56 (27.54%) patients were 2nd gravida, 48 (23.53%) patients were 3rd gravida and 46 (22.55) patients were more than or equal to 4th gravida. Whereas, 54 (26.47%) patients were primigravida.

Table 3: Patients Distribution According To Gestational Age At Bleeding (n=204)

Gestational Age (in Weeks) Up To 12 Weeks At Bleeding	Number of patients	Percentage
<6	16	7.84%
6-9	136	66.67%
>9	52	25.49%
Total	204	100.00%

Most of the patients 136 (66.67%) had bleeding at 6-9 weeks of gestation followed by 52 (25.49%) patients who had bleeding at >9 weeks. Additionally, 16 (7.84%) patients had bleeding at less than 06 weeks which is least among all groups (Table -3). From fig 1, it can be observed that most of the patients 103 (50.49%) had aborted while 70 (34.31%) patients had term pregnancy and 31 (15.20%) patients had preterm delivery.

**Fig 1- Distribution Of Patients On The Basis Of Pregnancy Outcome****Table 4: Patients Distribution According To Fetal Outcome Who Had Continued Pregnancy (n=101)**

Fetal outcome	Number of patients	Percentage
Normal	63	62.38%
Low Birth Weight	26	25.74%
Birth Asphyxia	2	1.98%
APGAR Score <7 at 5 mins	4	3.96%
Still Birth	4	3.96%
NICU admission	20	19.80%
Early neonatal death	4	3.96%

According to table-4, 63 (62.38%) patients had normal outcome followed by the low birth weight in 26 (25.74%) patients and NICU admission in 20 (19.80%) patients. Additionally, Stillbirth, early neonatal death and APGAR score <7 at 5 minutes each were in 04 (3.96%) patients while birth asphyxia was in 02 (1.98%) patients. Here one or more babies had presented with one or more than one complication.

DISCUSSION

In present study, maximum patients with first trimester bleeding were in the early reproductive age group (< 30 years), within which 90 (44.12%) patients belong to 25-29 years age group, 54 (26.47%) patients were of 20-24 years while a small percentage of patients fell within 30-34 years (20.59%) and 8.82% were > 35 years age group which aligns with previous studies, by *Arora S et al.*,⁶ and *Naskar A et al.*,⁷ However, contrasting findings reported by *Arafa et al.*,⁸ where bleeding is mostly seen in women > 33 years of age and more than 90% of the study population were 33 years of age.

In our study, 73.53% patients were multigravida while only 26.47% patients were primigravida. The results coincide with the study of *Patel S et al.*,⁹ and *Hasan R et al.*,¹⁰ that is 66% and 66.1% respectively. In contrast, *Ghosh M et al.*,¹¹ in their study reported that majority 116 (61.05%) out of 190 were primigravida and rest 74 (38.95%) were multigravida. Similar views also shared by *Amirkhani Z et al.*,²

In our study, 136 (66.67%) patients had bleeding between 6-9 weeks of gestation. This occurs because, during this time, there is transition of progesterone production by corpus luteum to placenta. If the placenta does not produce enough progesterone, there may be a temporary decrease in progesterone level, which could lead to vaginal bleeding and interfere with the successful maintenance of pregnancy. Therefore, bleeding at this stage of pregnancy may indicate that the early placenta has not developed optimally.¹² We also observed that 25.49% patients had bleeding at < 9 weeks. Whereas, 7.84% patients had bleeding at

<6wks. Even similar result reported by *Hasan R et al.*,¹⁰ and *Hokabaj S et al.*,¹² in their study. In contrast, a study conducted by *Ghosh M et al.*,¹¹ reported that most of the patient experienced bleeding at less than 7 wks. Whereas, *Arora S et al.*,⁶ reported majority of the first trimester vaginal bleeding patient presented between 8-10 weeks of gestation.

In our observation, it was seen that maximum patients with first trimester bleeding, (50.49%) patients had abortion while rest 101 patients had continued pregnancy. Out of 101 patients, 69.30% patients had continued till term while 30.69% patients had preterm delivery. These results resembling with the result of *Barik S et al.*,¹³ said that term delivery was 77.7% and 22.3% had preterm delivery.

In the present study 65.35% neonates had no complication at birth. Whereas, 25.74% babies had low birth weight and 16.83% babies need NICU admission due to low birth weight, birth Asphyxia and low APGAR score (< 7 at 5 mins). *Dr. Chandramathi P et al.*,¹⁴ reported 27% low birth weight and *Awolola Olalekan Olugbenga.*,¹⁵ also seen that 20.83% neonate had low birth weight and showed a strong relationship between early-pregnancy bleeding and LBW which is quite similar to our study. Although, *Kanmaz AG et al.*,¹⁶ reported low birth weight incidence of 15.8% and NICU admission incidence 11% differ from our results.

From our study it was observed that early neonatal death was seen in 3.96% of neonate due to low APGAR score and low birth weight. Similarly, *Arora S et al.*,⁶ and *Mulik V et al.*,¹⁷ revealed that 2.7% and 2.11% of the patients had neonatal death respectively.

CONCLUSION

The study of first trimester bleeding provides critical insights into the cause of bleeding, how it affects fetus during pregnancy and neonate after delivery and also helps the clinicians to plan proper management to cope up with stress, anxiety of the parents as well as subsequent complications that can developed later in pregnancy. A multicentre approach including large sample size and study of long duration may confirm the findings of our study.

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