

A Study of Maternal and Fetal Outcome in Patients with First Trimester PV Bleeding in a Tertiary Care Centre

Dr. Pratiksha Gaikwad¹, Dr. Vivek Karale², Dr. Rohidas Chavan³,
Dr. Shyamkumar Sirsam⁴, Dr. Rutuja Sawalsurkar⁵

¹Junior Resident, Department of OBGY, GMC Akola)

E Mail ID: [pratikshagaikwad28\[at\]gmail.com](mailto:pratikshagaikwad28[at]gmail.com)

Mobile: 8983445606

²Assistant Professor, Department of OBGY, GMC Akola

Mobile: 9822925255

³Professor and Head, Department of OBGY, GMC Akola

Mobile: 9822694404

⁴Associate Professor, Department of OBGY, GMC Akola

Mobile: 9922857349

⁵Junior Resident, Department of OBGY, GMC Akola (Corresponding Author)

Mobile: 7498894694

Abstract: Background: First trimester is a dynamic period which spans ovulation, fertilization, implantation and organogenesis. A healthy first trimester is necessary for normal development of fetus. Vaginal bleeding in first trimester requires further assessment in order to identify normal or abnormal development of the pregnancy or a pathologic condition that requires intervention. Aims and Objectives: To study how first trimester bleeding affects pregnancy and see its maternal and fetal outcomes. Materials and Methods: This observational study was conducted at Government Medical College, Akola- Maharashtra. 100 pregnant women attending hospital from January 2021 to December 2021 with history of first trimester pv bleeding were included after permission from the Institutional Ethics Committee, and consent from the patients & was evaluated regarding risk factors, and complications. SPSS version 20 was used for statistical analysis. Results: In patients with first trimester bleeding, it was observed that there is significant risk of pregnancy loss. And though pregnancy continued there may arise complications like preterm labour, PROM, PPROM, preeclampsia, abruption, IUGR. Conclusion: First trimester pv bleeding is associated with adverse maternal and fetal outcomes. Vigilant assessment and timely prompt measures taken can reduce the adverse outcomes.

Keywords: PV bleeding, Mode of Delivery, Abortions, First trimester

1. Introduction

Pregnancy is one of the most significant events in a woman's life. Many pregnant women experience bleeding and spotting during the first trimester. However, not all first trimester bleeding or spotting is dangerous, but medical assessment is essential.

It has been reported that 50% of women presenting to an emergency room with vaginal bleeding will go on to have a normal pregnancy and is a relatively common event in the first trimester, reported to occur in 16% to 25% of all pregnancies.¹⁻³

Vaginal bleeding can be a normal sign of implantation of pregnancy or it may be pathological. Main causes of pathological bleeding in first trimester are miscarriage (threatened, inevitable, incomplete or complete), ectopic pregnancy, molar pregnancy and local lesions of the vagina or cervix.

First-trimester vaginal bleeding has been associated with pregnancy outcome such as abortion in first half of

pregnancy and in later half of pregnancy it can be associated with increased risk of pre-eclampsia, antepartum haemorrhage (Placenta Previa, abruption), PPROM/PROM, pre term delivery. The perinatal outcomes include preterm delivery, low birth weight, IUGR and IUFD.⁴

It is known also that maternal age, systemic diseases such as diabetes mellitus, hypothyroidism, infertility treatment, thrombophilia, maternal weight and uterine structural anomalies increase the risk of abortus imminens.⁵

2. Materials and Methods

This was a hospital-based observational study conducted on 100 pregnant women who came with complaints of pv bleeding in first trimester, and were followed up to 6 weeks postpartum. The study has been approved by the Institutional Ethics Committee. After explaining the purpose of the study in the vernacular language, those who agreed and consented to take part in the study were included. The patient's identity and details were kept confidential.

Inclusion criteria

- Patients willing to give written informed consent
- Months of amenorrhoea of less than 3 months
- Positive pregnancy test
- Per vaginal bleeding
- Previous regular menstrual cycles
- Absence of cervical and vaginal pathology

Exclusion criteria:

- Non-consenting patients.
- Patient with vaginal bleeding following MTP
- Patients with history of bleeding tendency
- All patient with more than 12 completed weeks of gestation

Proper detailed history of the patient was taken and detailed examination was done. Appropriate clinical photographs were taken. Patients follow up was recorded. General and Obstetrics examination was done including relevant investigations necessary for follow up.

The history of vaginal bleeding was categorized as no. of episodes of vaginal bleeding. Ultrasound scans were done in all included participants. Patients were followed prospectively and outcomes were studied. Fetal outcomes were categorized as miscarriage (loss of pregnancy before 24 completed weeks of pregnancy), ectopic pregnancy (pregnancy outside uterine cavity), molar pregnancy (disorganized proliferation of trophoblastic tissue), placenta previa (placenta attached to lower uterine segment), preterm birth (birth before 37 completed weeks of pregnancy), healthy term infant (birth after 37 completed weeks of pregnancy).

Maternal and perinatal outcome were assessed in terms of first trimester miscarriage, second trimester miscarriage, preterm labour, full term labour, mode of delivery, weight of the baby, maturity and APGAR scoring.

Statistical Analysis

Quantitative data was presented with the help of Mean and Standard deviation. Comparison among the study group was done with the help of unpaired 't' test as per results of normalcy test.

Qualitative data was presented with the help of frequency and percentage table. Association among the study groups is assessed with the help of Fisher's test, Student 't' test and Chi square test. 'p' value less than 0.05 is taken significant.

The Chi square statistic was used for testing relationships on categorical variables. Student t-test was used to compare the means of a normally distributed interval dependent variable for two independent groups. The Fisher's exact test was used when we wanted to conduct a Chi-square test, but one or more of cells had an expected frequency of five or less.

Appropriate statistical software, including but not restricted to MS-Excel. SPSS version 20 was used for statistical analysis. Graphical representation was done in MS-Excel 2010.

3. Results**Distribution of patients according to Age**

Majority of the patients (36%) were in the age group of ≤ 20 years followed by 28% in the age group of 21-25 years, 20% in the age group of 26-30 years and 16% in the age group of >30 years. The mean age of patients was 24.08 ± 5.34 years.

Distribution of patients according to Gravida

64 (64%) patients were primigravida while 26 (26%) and 10 (10%) patients were G2 and $\geq G3$ respectively

Table 1: Distribution of patients according to Age

Age (years)	N	%
≤ 20 years	36	36%
21-25 years	28	28%
26-30 years	20	20%
>30 years	16	16%
Total	100	100%
Mean \pm SD	24.08 \pm 5.34	

Table 2: Distribution of patients according to Gravida

Gravida	N	%
Primigravida	64	64%
G2	26	26%
$\geq G3$	10	10%
Total	100	100%

Distribution of patients according to Outcome with First Trimester Bleeding

Among 100 (100%) patients with per vaginal bleeding in first trimester of pregnancy, 32 (32%) cases ended in abortion of which 7 (7%) cases each were ectopic pregnancy and incomplete abortion, 6 (6%) cases were missed abortion, 4 (4%) cases were molar pregnancy, 3 (3%) cases each were complete abortion and inevitable abortion and 2 (2%) cases were blighted ovum. 68 (68%) patients continued their pregnancy.

Table 3: Distribution of patients according to Outcome with First Trimester Bleeding

Outcome with First Trimester Bleeding	N	%
Ectopic pregnancy	7	7%
Incomplete abortion	7	7%
Missed abortion	6	6%
Molar pregnancy	4	4%
Complete abortion	3	3%
Inevitable abortion	3	3%
Blighted ovum	2	2%
Threatened abortion	68	68%
Total	100	100%

Distribution of patients according to Maternal Outcome

23 (34.1%) patients presented with preterm labour while 10 (14.6%) and 9 (13.2%) patients had Preterm premature rupture of membranes (PPROM) and Pregnancy Induced Hypertension (PIH) respectively. 7 (10.3%) patients had Premature rupture of membranes (PROM) while 4 (5.8%) and 2 (2.9%) patients had Placenta previa and Severe PIH + Abruptio Placenta respectively. 13 (19.1%) patients had no complications.

Distribution of patients according to Mode of Delivery

12 (17.7%) and 23 (33.8%) patients had full term normal delivery and preterm vaginal delivery respectively while 31 (45.6%) patients delivered by Lower Segment Caesarean Section (LSCS). Instrumental delivery was performed in 2 (2.9%) patients.

Table 4: Distribution of patients according to Maternal Outcome

Maternal Outcome	N	%
Preterm labour	23	34.1%
Premature rupture of membranes	10	14.6%
Pregnancy Induced Hypertension	9	13.2%
Preterm premature rupture of membranes	7	10.3%
Placenta previa	4	5.8%
Severe PIH + Abruption Placenta	2	2.9%
No complications	13	19.1%
Total	68	100%

Table 5: Distribution of patients according to Mode of Delivery

Mode of Delivery	N	%
Full Term Normal Delivery	12	17.7%
Preterm vaginal delivery	23	33.8%
LSCS	31	45.6%
Instrumental Delivery	2	2.9%
Total	68	100%

Distribution of neonates according to Birth Weight

The birth weight of 4 (5.9%) neonates was ≤ 1.5 kgs while it was in the range of 1.6-2.0 kgs and 2.1-2.5 kgs for 11 (16.2%) and 26 (38.2%) neonates respectively. 21 (30.9%) and 6 (8.8%) neonates weighed in the range of 2.6-3 kgs and >3 kgs respectively.

Table 6: Distribution of neonates according to Birth Weight

Birth Weight	N	%
≤ 1.5 kgs	4	5.9%
1.6-2.0 kgs	11	16.2%
2.1-2.5 kgs	26	38.2%
2.6-3 kgs	21	30.9%
>3 kgs	6	8.8%
Total	68	100%

Distribution of neonates according to Perinatal Morbidity

The rate of perinatal morbidity was 45.4%. The most common perinatal morbidity was Prematurity (33.8%) followed by Neonatal jaundice (5.8%), Meconium aspiration syndrome (2.9%) and Still birth (2.9%).

Table 7: Distribution of neonates according to Perinatal Morbidity

Perinatal Morbidity	N	%
Prematurity	28	41.2%
Neonatal jaundice	4	5.8%
Meconium aspiration syndrome	2	2.9%
Still birth	2	2.9%
Normal	32	47%
Total	68	100%

Distribution of neonates according to Neonatal Outcome

There were 10 (14.7%) neonatal death and 2 (2.9%) still birth in our study.

Table 8: Distribution of neonates according to Neonatal Outcome

Neonatal Outcome	N	%
Alive	56	82.4%
Neonatal Death	10	14.7%
Still birth	2	2.9%
Total	68	100%

4. Discussion

A hospital based observational study was conducted with 100 patients to study maternal and fetal outcome in patients with per vaginal bleeding in first trimester of pregnancy.

In the present study, majority of the patients (36%) were in the age group of ≤ 20 years followed by 28% in the age group of 21-25 years, 20% in the age group of 26-30 years and 16% in the age group of >30 years. The mean age of patients was 24.08 ± 5.34 years. This is similar to the studies of Kamble PD et al⁶, Amirkhani Z et al, Bhatu JJ et al⁷, Bala N et al⁸ and Naskar A et al⁹.

In our study, 64 (64%) patients were primigravida while 26 (26%) and 10 (10%) patients were G2 and $\geq G3$ respectively.

In the present study, among 100 (100%) patients with per vaginal bleeding in first trimester of pregnancy, 32 (32%) cases ended in abortion of which 7 (7%) cases each were ectopic pregnancy and incomplete abortion, 6 (6%) cases were missed abortion, 4 (4%) cases were molar pregnancy, 3 (3%) cases each were complete abortion and inevitable abortion and 2 (2%) cases were blighted ovum. 68 (68%) patients continued their pregnancy. First-trimester bleeding is not only associated with miscarriage and abortion but also with a higher rate of pregnancy complications. First trimester bleeding is often a sign of threatened abortion.

It was observed in our study that 23 (34.1%) patients presented with preterm labour while 10 (14.6%) and 9 (13.2%) patients had Preterm premature rupture of membranes (PPROM) and Pregnancy Induced Hypertension (PIH) respectively. 7 (10.3%) patients had Premature rupture of membranes (PROM) while 4 (5.8%) and 2 (2.9%) patients had Placenta previa and Severe PIH + Abruption Placenta respectively. 13 (19.1%) patients had no complications. This is similar to the studies of Kamble PD et al, Bala N et al and Bhatu JJ et al.

Bleeding during first trimester was associated with increased risk of preterm delivery. Because of impaired implantation and invasive trophoblasts, spontaneous abortion may occur in early pregnancy while preterm delivery, PPROM, Placenta previa and Severe PIH + Abruption Placenta may happen in later period.

Also, it was observed that pvbledding in first trimester often results in prematurity, low birth weight, increased NICU admission, still birth.

5. Conclusion

First trimester vaginal bleeding may be normal physiological bleeding of implantation or pathological it should be

addressed properly to avoid adverse effects in mother as well as baby.

References

- [1] Evrenos A, Güngör A, Gülerman C, Cosar E. Obstetric outcomes of patients with abortus imminens in the first trimester. *Arch Gynecol Obstet*. 2014;289(3):499- 504. doi:10.1007/s00404-013-2979-5.
- [2] Lykke JA, Dideriksen KL, Lidegaard O, Langhoff-Roos J. First trimester vaginal bleeding and complications later in pregnancy. *Obstet Gynecol*. 2010;115(5):935-944. doi: 10.1097/AOG.0b013e3181da8d38.
- [3] Saraswat L, Bhattacharya S, Maheshwari A, Bhattacharya S. Maternal and perinatal outcome in women with threatened miscarriage in the first trimester: a systematic review. *BJOG*. 2010;117:245-257. doi:10.1111/j.1471-0528.2009.02427.x.
- [4] Signore CC. Second trimester vaginal bleeding : correlation of ultrasonographic findings with perinatal outcome. *Am J ObstetGynecol*. 1996;178(2).
- [5] Amirkhani Z, Akhlaghdoust M, Abedian M, Salehi GR, Zarbati N, Mogharehabed M, et al. Maternal and perinatal outcomes in pregnant women with first trimester vaginal bleeding. *J Fam Reprod Health*. 2013;7(2):57.
- [6] Kamble PD, Bava A, Shukla M et al. First trimester bleeding and pregnancy outcome. *Int J Reprod Contracept ObstetGynecol*2017;6:1484-1487.
- [7] Bhatu JJ, Prajapati DS. A study of feto-maternal outcome in bleeding per vaginum in first trimester of pregnancy. *Int J Reprod Contracept ObstetGynecol*2020;9:1191-1195.
- [8] Bala N, Kaur N, Shifali A et al. A study of maternal outcome in first trimester bleeding. *Int J Reprod Contracept ObstetGynecol*2020;9:2104-2112.
- [9] Naskar A, Chowdhury R, Saha PK et al. Evaluation of Pregnancy Outcome in Women with First Trimester Vaginal Bleeding: A Longitudinal Study at a Tertiary Care Hospital, Kolkata, India. *Journal of Clinical and Diagnostic Research*. 2022;16(9): QC11-QC16.