Journal of Research in Medical and Dental Science
2022, Volume 10, Issue 10, Page No: 001-006

Available Online at: www.jrmds.in
eISSN No.2347-2367: pISSN No.2347-2545

First Trimester Vaginal Bleeding and its Consequences on the Current Gestation

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ABSTRACT

Vaginal bleeding which occurs early in pregnancy is a normal sign of implantation of the pregnancy or it could herald the initiation of an abortion. It could also be associated to pathologic condition such as ectopic pregnancy/gestational trophoblastic disease. In this study, we focused on the effects of first trimester vaginal bleeding and its outcome of the current gestation and the results concluded that those who experience vaginal bleeding during the first trimester of pregnancy face a high risk of abortion, and those who continue to carry the pregnancy are at greater risk of adverse maternal and neonatal outcomes

Key words: Abortion, Gestation, Vaginal bleeding

HOW TO CITE THIS ARTICLE: Niranjani S, Reshmi S, Aravinda Hariram, Minthami Sharon, First Trimester Vaginal Bleeding and its Consequences on the Current Gestation, J Res Med Dent Sci, 2022, 10 (10): 001-006.

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E-mail: reshu9191@gmail.com
Received: 29-Jul-2022, Manuscript No. JRMDS-22-53400;
Editor assigned: 01-Aug-2022, PreQC No. JRMDS-22-53400 (PQ);
Reviewed: 16-Aug-2022, QC No. JRMDS-22-53400;
Revised: 30-Sep-2022, Manuscript No. JRMDS-22-53400 (R);
Published: 10-Oct-2022

INTRODUCTION

Vaginal bleeding in pregnancy's a frequently occurring symptom that complicates 16-25% of pregnancies. In the past many years concerns for maternal and foetal well-being have made obstetricians focus more on early pregnancy. Meta-analysis indicates that vaginal bleeding increases the risk of complications during pregnancy [1]. Vaginal bleeding that occurred after confirming with UPT +ve requires a confirmatory ultrasound to identify an extra uterine early. Many times, the woman present to clinic with complaints of amenorrhea and bleeding and for these patients an ultrasound scan is done to confirm not only the viability but also its location [2].

When a pregnant woman in early weeks of gestation has bleeding, it may cause distress and anxiety for the women about the progress of pregnancy. This can be difficult time for the women because of uncertainty of the aftermath, lack of precautionary measures and emotional toil of pregnancy loss. Few studies have evaluated the outcomes rather than the viability at term. The end result of on-going pregnancies after vaginal bleeding is of relevance to mothers and their obstetricians in planning their antenatal care [3]. This study is to identify effects of 1st trimester vaginal bleeding on maternal and perinatal outcomes.

MATERIALS AND METHODS

In this study, 200 patients with first trimester were observed to evaluate the pregnancy following threatened abortion and identify the possible risk factors causing abortion.

Inclusion criteria

- Singleton pregnancy
- Intrauterine pregnancy
- Vaginal bleeding <13+6 weeks

Exclusion criteria

- Ectopic pregnancy
- Chronic hypertension
- Diabetes mellitus
- Thrombophilia
- Smoker
- Previous congenital malformations in their children
- History of trauma or surgery to cervix
- Cervical incompetence
- Congenital uterine anomalies
- Uterine fibroids or local pathologies like cervical polyp, erosion, vaginal growth

Statistical method of analysis

Statistical analysis was done using computer SPSS IBM Version 23. Using this software range, 't' values and 'p' values were calculated. *Chi-square* test was applied to find the association between two categorical variables. P-Value

<0.05 was considered to be significant in the study. Mann-Whitney U test was used to test the significance of association between quantitative variables.

RESULTS

Patients were categorized under the following headings to measure the outcomes.

Table 1: Frequency of patients who aborted and continued.

Outcome	Frequency	Percent
Patients who continued	89	44.5
Patients who aborted	111	55.5
Total	200	100

Table 1 show the total number of patients who presented with first trimester vaginal bleeding in my study that is 200. Out of these 200 patients, 111 patients who presented with first trimester vaginal bleeding aborted while 89 patients continued.

Table 2: Age distribution.

Outcome	Age			Total
	19-24	25-34	>/=35	
Patients who continued	35	48	6	89
	39.30%	53.90%	6.70%	100.00%
Patients who aborted	24	78	9	111
	21.60%	70.30%	8.10%	100.00%
Total	59	126	15	200
	29.50%	63.00%	7.50%	100.00%

Table 2 shows the frequency of patients across different age groups who continued and aborted pregnancy after first trimester vaginal bleeding. There is a significant association between patient who aborted and patient who continued with different age groups with P-value <0.05, *Chi-square* value 7.464 and DF 2. Effect size for the test is given by PHI-coefficient. Abortion rates were highest in the age group 25-34 years was highest, which was 70.3%. It was noted that as the maternal age increased abortion rates were higher with first trimester vaginal bleeding.

Table 3: Distribution based on type of gravida.

Outcome	Parity		Total
	Primigravida	Multigravida	
Patients who continued	21	68	89
	23.60%	76.40%	100.00%
Patients who aborted	73	38	111
	65.80%	34.20%	100.00%
Total	94	106	200
	47.00%	53.00%	100.00%

Table 3 illustrates the type of Gravida. It has been found that there is a significant difference between Parity and patients who aborted and patients who continued with a P-value 0.001, *Chi-square* value 35.263 and DF 1. There is a moderate relationship with PHI-coefficient 0.420. 73% patients who aborted were primiparous. Primigravids who presented with first trimester vaginal bleeding had higher chances of abortion.

Table 4: Distribution based on gestational age.

Outcome	Gestational age			Total
	<6 weeks	7-10 weeks	>10 weeks	
Patients who continued	4	67	18	89
	4.50%	75.30%	20.20%	100.00%
Patients who aborted	64	35	12	111
	57.70%	31.50%	10.80%	100.00%
Total	68	102	30	200
	34.00%	51.00%	15.00%	100.00%

Table 4 shows the number of patients across different gestational age. There is significant association between different groups of gestational age and abortion. Women in the gestational age group <6 weeks are at a greater risk of abortion when they present with vaginal bleeding. The P-value is 0.001, *Chi-square* value is 62.57 and DF is 2. There is a strong association found with PHI-coefficient 0.559. 57.7% of patients <6 weeks aborted.

Table 5: Amount of bleeding.

Outcome	Amount of bleeding			Total
	Mild	Moderate	Heavy	
Patients who continued	76	13	0	89
	85.40%	14.60%	0.00%	100.00%
Patients who aborted	25	51	35	111
	22.50%	45.90%	31.50%	100.00%
Total	101	64	35	200
	50.50%	32.00%	17.50%	100.00%

Table 5 illustrates the association between the amount of bleeding and viability. There is a significant association between the amount of bleeding and the groups. The tendency to abort was higher in women with moderate and heavy bleeding. The P-value is <0.001, *Chi-square* is 81.886 and DF 2. There is a strong relationship with PHI-coefficient 0.640. 31.5% of women with heavy bleeding aborted.

Table 6: Duration of bleeding.

Outcome	Duration of bleeding (days)				Total
	1-2	3-4	5-6	≥ 7	
Patients who continued	24	52	10	3	89
	27.00%	58.40%	11.20%	3.40%	100.00%
Patients who aborted	45	51	11	4	111
	40.50%	45.90%	9.90%	3.60%	100.00%
Total	69	103	21	7	200
	34.50%	51.50%	10.50%	3.50%	100.00%

Table 6 shows the relation between duration of bleeding and viability of the pregnancy. No significant association between duration of bleeding and the groups was noticed in my study. 45.9% aborted when they presented with 3-4 days of bleeding. The P-value 0.240, *Chi-square* 4.23 and DF 3 and PHI coefficient 0.143.

Table 7: Abdominal pain.

Outcome	H/O ABDOMINAL PAIN		Total
	Absent	Present	
Patients who continued	22	67	89

	24.70%	75.30%	100.00%
Patients who aborted	18	93	111
	16.20%	83.80%	100.00%
Total	40	160	200
	20.00%	80.00%	100.00%

Table 7 illustrates the presence and absence of abdominal pain. A statistically significant difference was noted in women who presented with abdominal pain and vaginal bleeding. P-value <0.05. Women with abdominal pain and vaginal bleeding have a higher risk of abortion.

Table 8: Ultrasound.

Outcome	Ultrasound						Total
	Blighted Ovum	Complete Abortion	Incomplete Abortion	Missed Abortion	Inevitable Abortion	Threatened Abortion	
Patients who continued	0	0	0	0	0	89	89
	0.00%	0.00%	0.00%	0.00%	0.00%	100.00%	100.00%
Patients who aborted	19	15	25	31	21	0	111
	17.11%	13.51%	22.52%	27.92%	18.91%	0.00%	100.00%
Total	19	15	25	31	21	89	200
	9.50%	7.50%	12.50%	15.50%	10.50%	44.50%	100.00%

Table 8 shows the proportion of abortion and threatened miscarriage in Ultra sonogram. No statistical difference was noted in the study group with P-value being 6.15. Out of the 111 patients who aborted 27.92% of the patients had features of missed abortion in USG. Out of the 89 patients diagnosed with threatened abortion in USG, 12.35% had sub-chorionic haemorrhage.

Table 9: Management of first trimester vaginal bleeding.

Outcome	Management			Total
	Medical management of miscarriage	Surgical management of miscarriage	Conservative management	
No Complication	65	41	86	192
	33.90%	21.40%	44.80%	100.00%
Complication	2	4	3	9
	22.20%	44.40%	33.30%	100.00%
Total	67	45	89	201
	33.30%	22.40%	44.30%	100.00%

Table 9 illustrates the management of first trimester vaginal bleeding and its complications. There is a significant association between management and complications with P-value <0.023, *Chi-square* 2.623 and DF 2. There is a small relationship with PHI-coefficient. 44.4% of patients who underwent surgical management of miscarriage had the highest number of complications.

Table 10: Complications of first trimester miscarriage.

Complications	Frequency	Percent
No complication	70	63.06%
Anaemia	29	26.12%
Sepsis	7	6.30%
ICU admissions	3	2.70%
DIC	1	0.90%

Multiple Transfusions	1	0.90%
Total	111	100.00%

Table 10 shows the complications of first trimester miscarriage. Out of the 111 patients who had a first trimester miscarriage 63.06% had no complications, 26.12% had anaemia, which was the most common.

Table 11: Consequences in those who continued pregnancy after first trimester vaginal bleeding (threatened abortion).

Outcome	Frequency	Percent
No complication	34	38.20%
Second trimester abortions	2	2.25%
Hypertensive disorders of pregnancy	21	23.59%
APH	5	5.61%
Anaemia	11	12.35%
Preterm labour	4	4.94%
PPROM	7	7.86%
PROM	2	2.24%
Manual Removal of Placenta	0	0.00%
PPH	3	3.37%
Total	89	100.00%

Table 11 shows the consequences of threatened abortion in the first trimester. 38.20% patients had no complications. 23.59% patients had hypertensive disorders of pregnancy which was the most common complication. Among those who had hypertensive disorders of pregnancy, 42.85% had gestational hypertension, 33.33% had Non-severe preeclampsia, 14.28% had severe pre-eclampsia, 4.76% patients had eclampsia and the remaining 4.76% patients had HELLP syndrome. The second most common complication was anaemia and it constituted 12.35% patients. 5.61% patients were reported to have ante partum haemorrhage. No patients in this study had the complication of manual removal of placenta.

Table 12: Perinatal morbidity.

Outcome	Frequency	Percent
Foetal Growth Restriction	17	19.54%
LBW	32	36.78%
Prematurity	29	33.33%
NICU Admission	41	47.12%
Respiratory distress		
APGAR <7 at 5 mins	9	10.3%
APGAR >7 at 5 mins	78	89.86%

Table 12 illustrates the perinatal morbidity. 47.12% of the neonates had NICU Admission, 36.78% had LBW, 33.33% were born premature and 19.54% were growth restricted. 89.86% had an APGAR <7 at 5 minutes, 10.3% had an APGAR <7 at 5 minutes.

DISCUSSION

It is a well-known fact that 1st trimester bleeding affects about 25% of pregnancies and 50% of affected pregnancies has a spontaneous miscarriage. The current study shows that first trimester vaginal bleeding is not only associated with abortions but also poor pregnancy outcomes. Results from this study confirm the findings from the other authors that threatened abortion is

associated with an increased risk of certain adverse complications namely hypertensive disorders of pregnancy, APH, Anaemia, Preterm Labour, PPROM, PROM, and PPH.

Also the study support the fact that first trimester vaginal bleeding indicates an placental dysfunction that manifests later in pregnancy in the form of different adverse effects related to placental pathologies like hypertensive disorders of pregnancy, abruption placenta, MROP after delivery and many more. In the current study, 65.8% patients who aborted were primigravida and 34.2% were multigravida. Most patients who aborted were primigravidas. This was similar in previous study where 56.7% patients were primigravidas and 43.3% were multigravidas [4]. Out of the 200 cases with FTVB, 52% of cases had previous H/O abortion and for 48% of the patients it was their first episode. There was no significant association between vaginal bleed and H/O abortions. The probability of resulting in an abortion increased as the amount and duration of bleeding increased especially when the bleeding was associated w/t abdominal pain [5]. Similar outcomes were not observed in the current study. Pregnant women with heavy bleeding landed with either a complete or incomplete miscarriage. And those who presented with bleeding and abdominal pain had a strong association with abortion than those did not. 83.8% of patients who presented with abdominal pain, aborted [6]. At the end of 1st trimester, 55.5% pregnancies got aborted and only 44.5% pregnancies continued. Among the 55.5% of pregnancies that aborted, 33.3% pregnancies underwent medical management and 22.4% underwent uterine curettage. Blood was transfused in 4.5% of them.

In the present study only 38.20% of pregnancies had no complications. Most common consequence encountered in the current study was the hypertensive disorders of pregnancy (23.59%). Among that group 42.85% had gestational hypertension, 33.33% had non-severe preeclampsia, 14.2% severe pre-eclampsia, 4.76% had eclampsia and the remaining 4.76% had HELLP syndrome. In previous study, FTVB was predictor of poor perinatal outcome [7]. There was a significant association between FTVB and FGR, LBW and neonatal admissions. Poor perinatal outcome due to first trimester was observed in the current study.

CONCLUSION

The results of this prospective study proved that first trimester vaginal bleeding is associated with a high risk of abortion and in those who continued the pregnancy were at a higher risk of adverse maternal and neonatal outcome. Thus, these women should be counselled and advised to attend their routine antenatal check-up regularly. Also, the clinicians should be alert and pick up early signs of these complications. Pregnant women who present with first trimester bleeding should be treated as high risk. This helps facilitate decision making regarding management, mode, place and time of delivery which will inevitably improve pregnancy outcome.

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