

## Outcome Assessment of Pregnancy in First Trimester Vaginal Bleeding: An Observational Study

Vandana Kumari<sup>1</sup>, Reshita<sup>2</sup>, Roopam Sinha<sup>3</sup>

<sup>1</sup>Senior Resident, Department of Obstetrics and Gynecology, Patna Medical College and Hospital, Patna, Bihar, India

<sup>2</sup>Senior Resident, Department of Obstetrics and Gynecology, Patna Medical College and Hospital, Patna, Bihar, India

<sup>3</sup>professor and unit head, Department of Obstetrics and Gynecology, Patna Medical College and Hospital, Patna, Bihar, India

Received: 12-03-2024 / Revised: 17-04-2024 / Accepted: 28-05-2024

Corresponding Author: Dr. Reshita

Conflict of interest: Nil

### Abstract

**Aim:** The aim of the present study was to assess the pregnancy outcomes in first trimester vaginal bleeding.

**Methods:** The present study was a sectional- analytical research that was performed on 50 pregnant women with vaginal bleeding in the first trimester of pregnancy in the Department of Obstetrics and Gynecology, Patna Medical College and Hospital, Patna, Bihar, India for the period of one year.

**Results:** Majority of the women belonged to 25-34 years of age and 36 women had moderate bleeding in current pregnancy. According to parity, 56% belonged to 0, 34% had history of bleeding and 16% had history of abortion. Premature labor and placental abruption were the obstetric complications noted in the women. 20% underwent abortion and 56% delivered through NVD.

**Conclusion:** Considering the results of present study and first trimester bleeding can be a predicting factor in terms of mother and infant consequences of pregnancy and it is necessary to increase the knowledge of pregnant women in this regard for closer care. Also, because the clinical interventions of attentive physician has important role in not only the continuance of pregnancy but also reducing the fetal complications in these high risk pregnancies, precise management and planning by physicians is required.

**Keywords:** Vaginal bleeding, Pregnancy outcomes, First trimester

This is an Open Access article that uses a funding model which does not charge readers or their institutions for access and distributed under the terms of the Creative Commons Attribution License (<http://creativecommons.org/licenses/by/4.0>) and the Budapest Open Access Initiative (<http://www.budapestopenaccessinitiative.org/read>), which permit unrestricted use, distribution, and reproduction in any medium, provided original work is properly credited.

### Introduction

First trimester bleeding is one of the common complications during pregnancy which affects almost 16-25% of all pregnancies. [1,2] The presumptive symptom of threatened miscarriage is the history of vaginal bleeding in early pregnancy with closed cervix. Meta-analysis indicates that vaginal bleeding increases the risk of pregnancy complications by twofold. [3] Vaginal bleeding may herald the initiation of spontaneous abortion, or it can be a sign of implantation of pregnancy, or it can be a pathological sign indicating gestational trophoblastic disease or ectopic pregnancy.

Vaginal bleeding during early pregnancy needs further evaluation to identify normal or abnormal pregnancy or any pathological condition which requires immediate intervention. [4,5] It is hypothesized that vaginal bleeding in first trimester may be an indication of an underlying placental dysfunction, which may manifest later on with

adverse outcomes like first or second trimester abortion, pre-eclampsia, preterm delivery, premature rupture of membranes, intrauterine growth restrictions and intra uterine death. [6]

Maternal age, systematic diseases like diabetes mellitus, hypothyroidism, infertility treatment, thrombophilia, maternal weight and uterine structural anomalies reported to raise the chances of abortion. Although first trimester vaginal bleeding is a painful symptom, very little studies have been done scrupulously to explore the prevalence and predictors of bleeding. There is wide variations in estimates of prevalence of early pregnancy bleeding ranging from 7% to 24% have been reported in published literatures. Wide range in estimates is possibly due to variation in study design. [7]

Comprehensive understanding about current pregnancy outcome following 1st trimester vaginal bleeding is very much pertinent not only to pregnant mothers but also to her attending obstetrician to plan

adequate antenatal care and early intervention to reduce the maternal and perinatal complications. To evaluate adverse foetal outcomes following first trimester vaginal bleeding, several primary studies have been attempted, but a couple of them have remarked on adverse maternal outcome. [8]

The aim of the present study was to assess the pregnancy outcomes in first trimester vaginal bleeding.

### Materials and Methods

The present study was a sectional- analytical research that was performed on 50 pregnant women with vaginal bleeding in the first trimester of pregnancy in the Department of Obstetrics and Gynecology, Patna Medical College and Hospital, Patna, Bihar, India for the period of one year.

All women with vaginal bleeding in first trimester of pregnancy whose pregnancy was confirmed chemically were studied. Women with chronic medical complication including diabetes and

hypertension and women with a history of infertility or missed obstetrical history were excluded from the study. The study was confirmed by the research deputy of Azad University. After taking a written informed consent, patients were kept under surveillance until delivery and the consequence of pregnancy was evaluated by close observation on the process of pregnancy and prenatal care. Sonography was performed for all women in the 8-10 weeks intervals. The women were visited every two weeks in the first 6 months of pregnancy, weekly in the 7th and 8th months as weekly and two times per week in the last month of pregnancy.

The age of pregnancy at the time of bleedings, the volume of bleeding, the history of previous pregnancies, the co-existing diseases, the length and duration of pregnancy and the birth weight were recorded. Data were analyzed using SPSS- 11 software and P- value  $\leq$  5% was defined as significant.

### Results

**Table 1: Obstetrical characteristics of studied women**

Variables		n (%)
Age (Year)	15-24	13 (26%)
	25-34	27 (54%)
	>35	12(20%)
Bleeding volume in current pregnancy	Spotting	2 (4%)
	Moderate	36 (72%)
	High	12 (24%)
Parity	0	28 (56%)
	1	15 (30%)
	2	5 (10%)
	>2	2 (4%)
History of bleeding in previous pregnancies	Yes	17 (34%)
History of abortion	Yes	8 (16%)

Majority of the women belonged to 25-34 years of age and 36 women had moderate bleeding in current pregnancy. According to parity, 56% belonged to 0, 34% had history of bleeding and 16% had history of abortion.

**Table 2: Obstetrical complications in women with first trimester vaginal bleeding**

Obstetrical complications	n (%)
Premature labor	12 (24%)
Premature rupture of membrane	4 (8%)
Placental abruption	7 (14%)
Intra uterine death	1 (2%)
Intra uterine growth retardation	1 (2%)

Premature labor and placental abruption were the obstetric complications noted in the women.

**Table 3: Pregnancy outcome in women with first trimester vaginal bleeding**

Pregnancy outcomes	n (%)
Abortion	10 (20%)
Termination of pregnancy	5 (10%)
Normal vaginal delivery	28 (56%)
Cesarean section	16 (32%)
Forceps assisted	6 (12%)
Minute 5 APGAR score < 7	7 (14%)
Admission in NICU	10 (20%)

20% underwent abortion and 56% delivered through NVD.

### Discussion

Vaginal bleeding in the first trimester of pregnancy is associated with spontaneous abortion/miscarriage, ectopic implantation, hydatidiform mole, preterm delivery, and low birth weight. It has been reported that 50% of women presenting to an emergency room with vaginal bleeding will go on to have a normal pregnancy. [9] Vaginal bleeding can be a normal sign of implantation of the pregnancy, may herald the initiation of spontaneous abortion, or may be the sign of a pathologic condition such as ectopic pregnancy or gestational trophoblastic disease. Vaginal bleeding after confirmation with a positive pregnancy test requires further assessment in order to identify normal or abnormal development of the pregnancy or a pathologic condition that requires intervention. [10,11]

Three major reasons for first trimester bleeding are spontaneous abortion, EP and trophoblastic diseases in the pregnancy. In the study of Dogra et al [11] it is reported that the most common causes for first semester bleeding are abortion and EP, and there were observable genetic disorders in more than 50% of spontaneous abortions. Majority of the women belonged to 25-34 years of age and 36 women had moderate bleeding in current pregnancy. According to parity, 56% belonged to 0, 34% had history of bleeding and 16% had history of abortion. Premature labor and placental abruption were the obstetric complications noted in the women. 20% underwent abortion and 56% delivered through NVD. A study by Saraswat et al which was a meta-analysis also suggested a higher incidence of preterm labor and premature rupture of membranes, but a similar study done by Strobino et al did not show any significant association between first trimester bleeding and preterm labour. [12,13] Placental abruption occurs in approximately 2% of all the pregnancies and the most common cause is first trimester bleeding. The hematoma that collects in between the chorionic plate and the uterus gradually increases in size and separates the placenta and causes heavy bleeding and eventually leads to abruption.

Saraswat et al. performed a systematic- review and demonstrated that first trimester bleeding has no effect on rout of delivery. [14] But some other studies have shown that possibility of cesarean section in women with bleeding is more than others. The results of our study show the same status. With regard to previous studies, it is apparent that due to several disorders of placenta in the pregnant women with first trimester bleeding, the length of pregnancy in these women is less and the possibility of premature delivery is more. [15] In the other word, such pregnancies developed growth failure and

newborn has low birth weight due to premature delivery.<sup>16</sup> Many studies agreed with low birth weight of newborns and Apgar of 5 minute less than 7 in pregnancies with first trimester bleeding but various results are reported about mortality rate of newborns. [16,17]

### Conclusion

Considering the results of present study and first trimester bleeding can be a predicting factor in terms of mother and infant consequences of pregnancy and it is necessary to increase the knowledge of pregnant women in this regard for closer care. Also, because the clinical interventions of attentive physician has important role in not only the continuance of pregnancy but also reducing the fetal complications in these high risk pregnancies, precise management and planning by physicians is required.

### References

1. Farrell T, Owen P. The significance of extra chorionic membrane separation in threatened miscarriage. *Br J ObstetGynaecol.* 1996;103:926-8.
2. Bowe P, Murphy H. Complications of pregnancy following threatened abortion. *Irish J Med Sci.* 1987;156:328-9.
3. Ananth C, Savitz D. Vaginal bleeding and adverse reproductive outcomes: a meta-analysis. *Paediatric Perinatal Epidemiol.* 1994; 8:62-78.
4. Snell BJ. Assessment and management of bleeding in the first trimester of pregnancy. *J Midwifery Women's Health.* 2009; 54:483-91.
5. Dogra V, Paspulati RM, Bhatt S. First trimester bleeding evaluation. *Ultrasound Q.* 2005;21:69-85.
6. Weiss JL, Malone ED, Vidaver J. Threatened miscarriage: arisk factor for poor pregnancy out-come, a population-based screening study. *Am J Obstet Gynecol.* 2004; 190:745-50.
7. Hasan R, Baird DD, Herring AH, Olshan AF, Jonsson Funk ML, Hartmann KE. Patterns and predictors of vaginal bleeding in the first trimester of pregnancy. *Ann Epidemiol.* 2010 ;20(7):524-31.
8. Agrawal S, Khoiwal S, Jayant K, Agarwal R. Predicting adverse maternal and perinatal outcome after threatened miscarriage. *Open J Obstet Gynecol.* 2014;4:01-07.
9. Wittels KA, Pelletier AJ, Brown DF, Camargo Jr CA. United States emergency department visits for vaginal bleeding during early pregnancy, 1993-2003. *American Journal of Obstetrics and Gynecology.* 2008 May 1;198 (5):523-e1.

10. Snell BJ. Assessment and management of bleeding in the first trimester of pregnancy. *Journal of midwifery & women's health*. 2009 Nov 1;54(6):483-91.
11. Dogra V, Paspulati RM, Bhatt S. First trimester bleeding evaluation. *Ultrasound quarterly*. 2005 Jun 1;21(2):69-85.
12. Saraswat I, Bhattacharya S, Maheshwari A, Bhattacharya S. Maternal and perinatal outcome in women with threatened miscarriage in the first trimester: a systematic review. *BJOG*. 2010;117:245-57.
13. Strobino B, Pantel-Silverman J. Gestational vaginal bleeding and pregnancy outcome. *Am J Epidemiol*. 1989;129(4):806-15.
14. 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: An International Journal of Obstetrics & Gynaecology*. 2010 Feb;117(3): 245-57.
15. Weiss JL, Malone FD, Emig D, Ball RH, Nyberg DA, Comstock CH, Saade G, Eddleman K, Carter SM, Craigo SD, Carr SR. Obesity, obstetric complications and cesarean delivery rate—a population-based screening study. *American journal of obstetrics and gynecology*. 2004 Apr 1;190(4):1091-7.
16. Harlev A, Levy A, Zaulan Y, Koifman A, Mazor M, Wiznitzer A, Faizayev E, Sheiner E. Idiopathic bleeding during the second half of pregnancy as a risk factor for adverse perinatal outcome. *The Journal of Maternal-Fetal & Neonatal Medicine*. 2008 Jan 1;21(5):331-5.
17. Riahinejad S, Motamedi N, Saadat N, Mostofiniya M, Toghiani A. Effect of vaginal bleeding in first trimester of pregnancy on pregnancy outcomes. *Journal of Isfahan Medical School*. 2011 Oct 23;29(156):1462-8.