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Original ResearchArticle

First trimester bleeding and pregnancy outcome

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ABSTRACT

Background: The outcome of first trimester vaginal bleeding is a matter of debate. This study sought to determine the maternal and perinatal outcome in patients presenting with first trimester vaginal bleeding.
Methods: This prospective observational study was done on 1007 women with first trimester vaginal bleeding at a tertiary care hospital in Mumbai over a period of one year. A detailed history was taken and USG was done to confirm diagnosis. All these patients were evaluated for the outcomes including threatened abortions, spontaneous, complete or incomplete abortions, sub-chorionic hematoma, Intra-uterine Fetal Demise, missed abortions, second and third trimester bleeding, Intra-uterine Growth Restriction, premature rupture of membranes and preterm deliveries.
Results: Out of the 11835 confinements 1007 patients presented with first trimester vaginal bleeding. The incidence was highest (52.3%) in the age group of 21-30 years. 63.9% primigravidas presented with first trimester bleeding as compared to 36.1% of multigravidas. It was seen that 76.9% patients who presented before 6 weeks aborted whereas only 7% patients who presented after 10 weeks aborted. Out of the 163 patients that continued pregnancy after first trimester vaginal bleeding 1.8% had a second trimester abortion, 15.3% went into preterm labour 6.75% has premature rupture of membranes and 1.8% had antepartum hemorrhage.
Conclusions: According to the results of present study, first trimester vaginal bleeding predicts auxiliary maternal and fetal complications. Also, as the clinical intermediation has an important role in continuance of pregnancy and in reducing the fetal complications precise management and planning by physician is important.

Keywords: Abortions, First trimester bleeding, Preterm labor, Threatened abortion

INTRODUCTION

First trimester vaginal bleeding is a common symptom of pregnancy, complicating 16-25% of all pregnancies. Four major causes are miscarriage (threatened, inevitable, incomplete or complete), ectopic pregnancy, implantation bleeding of pregnancy and cervical pathology.[1] It constitutes a source of anxiety for the mother, family as well as the care providers. Outcome is likely to be affected by the gestational age at bleeding, cause of bleeding and severity of bleeding.[2] After taking a detailed history, physical and pelvic examination should be done and further, with the help of imaging techniques, diagnosis and plan of management is decided.[1]

Over 50% of pregnancies with first trimester bleeding end in pregnancy loss. If pregnancy continues poor maternal and foetal outcome such as preterm delivery, preterm premature rupture of membranes (PPROM), placental abruption, pre eclampsia and intra uterine growth restriction (IUGR) may occur. It is also known 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.[1] Emerging evidence suggests that it may be associated with poor foetal and maternal outcomes. Further it is hypothesized that first trimester bleeding may indicate an underlying placental dysfunction, which may manifest

later in pregnancy causing adverse outcomes such as increased risk of pre-eclamptic toxemias, preterm delivery, prelabour rupture of membranes(PROM), and IUGR.[3]

The purpose of this study was to investigate the effect of first trimester vaginal bleeding on maternal and perinatal outcomes.

METHODS

In this prospective observational study, 1007 patients with first trimester bleeding who were admitted to the department of Obstetrics and Gynecology at a tertiary care hospital in Mumbai between January 2015 to December 2015 were studied. All patients had a complete examination (general, physical and gynecological) at booking visit. The patients were followed up regularly in antenatal clinic and repeat ultrasound scans were done as required. In patients with sub chorionic-hematoma, scans were repeated weekly until resolution of hematoma.

Other inclusion criteria were normal body mass index, sure of dates, previous regular cycles, absence of cervical pathology and a single viable pregnancy confirmed on ultrasound. The amount of bleeding was noted at each visit.

Pregnant females with chronic hypertension, diabetes mellitus, syphilis, thrombophilia, smoker, history of recurrent miscarriage, previous congenital malformation in children, history of trauma or surgery during the present pregnancy, cervical incompetence, congenital uterine anomalies, uterine fibroids or local cervical pathology like cervical polyp or erosions were excluded from the study.

If spotting was found, it was considered as light. If bleeding was similar to patients' menstrual bleeding or more, it was considered heavy. In patients with heavy bleeding and presence of products of conception in the cervix and vagina (incomplete abortion); emergency investigations were sent and check curettage was performed. Ultrasonogram was performed for diagnosis, calculation of gestation age and to detect the presence of sub chorionic hematoma. Threatened, complete, missed abortion, inevitable abortion diagnosis was confirmed on ultrasonography. Patients with threatened miscarriage were managed with complete bed rest till 48 hours of cessation of bleeding, folic acid supplementation and tablet micronized progesterone 200mg BD. Such patients were registered, followed up prospectively at antenatal clinics and delivered at the same hospital.

RESULTS

In present study the incidence of patients with first trimester bleeding was 8.5%. 1007 women had first trimester bleeding and formed the study group, out of which 84% patients aborted and 16% patients continued pregnancy.

Table 1: Incidence.

Total number of patients with first trimester bleeding	1007
Total confinements	11835

In the study by Amirkhani et al 70% of pregnant women with first trimester vaginal bleeding continued their pregnancy.[4] In another study by Snell et al it was found that vaginal bleeding occurred in 15-25% of all pregnancies and half of them continued their pregnancy.[4]

Table 2: Age.

Age	Patients who aborted	Patients who continued pregnancy	Total	%
< 20	257	49	306	30.4
21-30	498	29	527	52.3
31-35	63	77	140	13.9
>35	26	8	34	3.4
Total	844 (83.9%)	163 (16.1%)	1007	

The overall adverse pregnancy outcome was higher in the age group of 21-30 years (52%), wherein 498 patients aborted out of 527 with first trimester vaginal bleeding. In the study by Amirkhani et al 53% patients were in the age group between 25-34 years of age.[4]

Table 3: Parity.

Parity/ obstetric history	Patients who aborted	Patients who continued pregnancy	Total	%
Primigravida	574	69	643	63.9
Multigravida	270	94	364	36.1

In present study 64% patients who came with first trimester bleeding were primigravidas and 36% were multigravidas. Amirkhani et al reported that 56.7% patients who presented with first trimester bleeding were primigravidas and 43.3% were multigravidas.[4]

Table 4: Gestational age.

Gestational age	Patients who aborted	Patients who continued pregnancy	Total	%
<6 weeks	766	8	774	76.9
7-10 weeks	44	118	162	16.1
>10 weeks	34	37	71	7

Incidence of abortion was higher in patients with first trimester bleeding in less than 6 weeks of gestation (77%) whereas it was significantly less after 10 weeks of gestation (7%).

Table 5: Type of bleeding.

Type of bleeding	Patients who aborted	Patients who continued pregnancy	Total	%
Spotting	681	157	838	83.2
Heavy	163	6	169	16.8

Out of the 1007 females with First Trimester Vaginal Bleeding, 83.2% had spotting with abortion rate of 81.2%, whereas 16.8% had heavy bleeding with an abortion rate of 96.4%. In Amirkhani et al study 96.6% patients had moderate to severe bleeding and 3.3% patients had spotting.[4]

Table 6: Ultrasound.

U.S.G	Patients who aborted	Patients who continued pregnancy	Total	%
Missed Abortion	411	0	411	40.8
Subchorionic hematoma	65	9	74	7.3
Complete abortion	99	0	99	9.9
Incomplete abortion	238	0	238	23.6
IUFD	31	0	31	3.1
Normal Outcome	0	154	154	15.3

40% patients were diagnosed to have missed abortion and underwent uterine curettage. USG revealed sub chorionic hematoma in 74 patients of which 65 eventually aborted in spite of conservative management. 23% had incomplete abortion and emergency curettage was performed. 15.3% patients went up till term and delivered normally.

Table 7: Management.

Management	Number
Uterine curettage	745
Conservative treatment	163
Cervical cerclage	2
Tocolytics	75
Transfusion	24

745 patients required uterine curettage. Blood transfusion was required in 24 patients of heavy bleeding. Tocolytics were started for 75 patients and cerclage was performed in 2 patients.

Table 8: Pregnancy outcome.

Pregnancy outcome	Number	%
II nd trimester abortion	3	1.8
Preterm labor	25	15.3
PROM	11	6.75
PIH	9	5.5
APH	3	1.8
FTVD/LSCS	87+25	68.7

Total 163 patients continued pregnancy beyond first trimester; of which 25 had preterm labor. 112 patients went till term and delivered either vaginally or by LSCS. 6 patients had bleeding in second and third trimester; of which 3 patients aborted in second trimester and 3 were diagnosed to have Ante-partum Hemorrhage. Amirkhani et al reported 15% patients went into preterm labor, 8.3% had PROM and 13.3% patients had placental abruption, 38% patients had normal vaginal delivery whereas 41% had to undergo a LSCS.

Table 9: Neonatal outcome.

Neonatal outcome	Number
<2kg	7
2-2.5 kg	12
>3 kg	141
APGAR(5) <7	9
APGAR(5)>7	151
Mortality.	NIL

Out of all the females with first trimester bleeding, 160 delivered live babies. Out of these, 88.12% babies had birth weight >3kg. 5.6% babies required NICU care.

DISCUSSION

First-trimester bleeding is not only associated with miscarriage but also with a higher rate of pregnancy complications. First trimester bleeding is often a sign of threatened abortion and as such worrisome for both patient and doctor. If on ultrasound a vital foetus is observed and there is a blood collection or clot around the foetal sac, it seems worthwhile to advice the patient to take bed rest; however, there is no evidence that any conservative or medical management is beneficial. Neither progesterone nor HCG injections have demonstrated to be beneficial in improving pregnancy outcome. Bleeding during first trimester was associated with increased risk of preterm delivery.[5] Because of impaired implantation and invasive trophoblasts, spontaneous abortion may occur in early pregnancy while preterm delivery, PPROM, placental ablation and preeclampsia may happen in later period. Ultrasound examination was considered an important investigation for the diagnosis of the cause of bleeding. The studies of Deutchman et al and Thorstensen et al it was seen that in pregnancies with first trimester vaginal bleeding the most

important diagnostic actions were transvaginal ultrasound and evaluating the rising of serum level of βHCG.[7,8]

It was seen in previous studies that due to numerous 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 and as a result such pregnancies developed growth failure and newborn had low birth weight due to premature delivery.[9,10] Many studies agreed with low birth weight of newborns and Apgar of 5 minute less than 7 in pregnancies with first trimester bleeding.

Saraswat et al performed a systematic review and demonstrated that first trimester bleeding has no effect on rout of delivery.[11] But some other studies have shown that possibility of caesarean section in women with bleeding is more than others.

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