IOSR Journal of Dental and Medical Sciences (IOSR-JDMS)
e-ISSN: 2279-0853, p-ISSN: 2279-0861.Volume 19, Issue 6 Ser.18 (June. 2020), PP 20-23
www.iosrjournals.org

A Prospective Study of Pregnancy Outcome After First Trimester Vaginal Bleeding

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Abstract
Introduction: *Bleeding pervagina in first trimester or in early weeks of pregnancy is a very common complaint of mothers in our day-to-day practice. This not only causes anxiety for the couple, but also troublesome for the treating doctor. If we know the possible complications and their incidences in such complicated pregnancies, it will be easier for us to counsel and to manage and treat the patient properly.*
Materials and Methods: *In this prospective observational study, 1007 patients with first trimester bleeding who were admitted to the department of Obstetrics and Gynecology at a District hospital in Ranchi between January 2018 to June 2019 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.*
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. In the study by Amirkhani et al 70% of pregnant women with first trimester vaginal bleeding continued their pregnancy. 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.*
Conclusion: *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.*
Key Words: *Bleeding pervagina, first trimester, pregnancy.*

Date of Submission: 14-06-2020 Date of Acceptance: 30-06-2020

I. Introduction

Bleeding pervagina in first trimester or in early weeks of pregnancy is a very common complaint of mothers in our day-to-day practice. This not only causes anxiety for the couple, but also troublesome for the treating doctor. If we know the possible complications and their incidences in such complicated pregnancies, it will be easier for us to counsel and to manage and treat the patient properly.[1]

Early weeks (4-12 weeks) pregnancy is the period of organogenesis. Various factors may disturb the pregnancy during this period, which has subsequent effect on obstetric outcome. About 20-30% of pregnancies are lost during early weeks. Because of greater concern about the foetal well-being, early weeks of pregnancy has gained considerable importance.[2]

Patients with vaginal bleeding, light or heavy were more likely to experience spontaneous loss before 24 weeks of gestation [odds ratio (OR) 2.5 and 4.2 respectively] and caesarean delivery (OR 1.1 and 1.4 respectively). Light bleeding subjects were more likely to have pre-eclampsia (OR 1.5), preterm delivery (OR 1.3) and placental abruption (OR 1.6). Heavy vaginal bleeding subjects were more likely to have intrauterine growth restriction (OR 2.6), preterm delivery (OR 3), preterm premature rupture of membranes (OR 3.2) and placental abruption (OR 3.6). First trimester vaginal bleeding is an independent risk factor for adverse obstetric outcome that is directly proportional to the amount of bleeding.[3]

Primigravida and women with previous live births have a lower risk of miscarriage. The risk of miscarriage increases cumulatively according to the number of previous miscarriages.[2] Similarly, woman with previous ectopic pregnancy are at substantially increased risk of another ectopic pregnancy.[4] There is approximately a ten-fold increased risk of another hydatidiform mole in women with history of an affected pregnancy.[5]

Women with threatened miscarriage were more likely to have antepartum haemorrhage of unknown origin (OR 1.83). Elective caesarean section (OR 1.30) and manual removal of placenta (OR 1.40) were

performed more frequently in these women, who also have a risk of preterm delivery (OR 1.56) and malpresentation (OR 1.26). Pregnancies complicated by threatened miscarriages are at a slightly higher risk of obstetric complications and interventions.[6]

II. Materials And Methods

In this prospective observational study, 1007 patients with first trimester bleeding who were admitted to the department of Obstetrics and Gynecology at a District hospital in Ranchi between January 2018 to June 2019 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.

III. 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.

S.No	Total number of patients with first trimester bleeding	1007
1	Total confinements	11835

Table 1: Incidence

In the study by Amirkhani et al 70% of pregnant women with first trimester vaginal bleeding continued their pregnancy. 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

Age	Patients who aborted	Patients who continued pregnancy	Total	Percentage
<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	

Table 2: Age

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.

Parity/Obstetric History	Patients who aborted	Patients who continued pregnancy	Total	Percentage
Primi Gravida	574	69	643	63.9
Multi Gravida	270	94	364	36.1

Table 3: parity

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.

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

Table 4: Gestational age

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%).

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

Table 5: Type of bleeding

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

U.S.G	Patients who aborted	Patients who continued pregnancy	Total	Percentage
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

Table 6: Ultrasound

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.

Management	Number
Uterine Curettage	745
Conservative treatment	163
Cervical Cerclage	2
Tocolytics	75
Transfusion	24

Table 7: Management

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.

Pregnancy outcome	Number	Percentage
II nd trimester	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

Table 8: Pregnancy Outcome

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.

Neonatal Outcome	Number
<2 kg	**7**
2-2.5 kg	**12**
>3 kg	**141**
APGAR(5) <7	**9**
APGAR(5) >7	**151**
Mortality	**Nil**

Table 9: Neonatal Outcome

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.

IV. 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.[7] 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.[8] 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. 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.[9] 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.[10]

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.

V. Conclusion

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.

Serial ultrasonography (TVS - preferably for early weeks of gestation) is essential to evaluate the status of pregnancy to localize the placenta, to diagnose congenital anomalies and also to monitor growth of the foetus.

Thus, pregnancies with bleeding pervagina in first trimester should be counselled properly regarding the foetal and maternal complications which may arise. We the obstetricians should not treat these patients casually, because we can miss ectopic pregnancies which is a life-threatening condition.

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