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Assessment of the pregnancy outcome in women with first trimester bleeding

V. Sravani*, Saira Zia, Shaiesta Amreen and Parveen Yousuff

Department of Obstetrics and Gynecology, Shifaa Hospital, 332, Dar-Us-Salam Building, Queens Road, Bengaluru-560052, Karnataka, India

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Abstract: *Introduction:* First trimester bleeding is troublesome problem in pregnant women. It occurs due to various causes, some not related to pregnancy. It leads to various maternal & fetal adverse outcomes as well. *Aim:* To study pregnancy outcome in women with first trimester bleeding. *Materials and Methods*: This prospective observational study was done among 150 women with first trimester bleeding in Department of obstetrics & Gynecology, Shifaa hospital, Bangalore. Various adverse outcomes in pregnant women & neonates were observed as variables and their incidences were calculated. *Results:* Among 150 pregnant women, maximum adverse outcomes were seen in age group 23-26yrs, multigravidas and those with previous term pregnancies. Antepartum complications in decreasing order of frequency were PROM, Pre- Eclampsia, Abruption, Low-Lying placenta, Eclampsia. Majority of pregnant women had normal vaginal deliveries followed by cesarean and instrumental delivery. 20.7% of neonates had low birth weight who needed close monitoring in NICU. *Conclusion:* First trimester bleeding is considered as one of the indicator for determining fetal & maternal outcome. Knowledge regarding this aspect will help obstetricians to anticipate complications and manage them effectively.

Keywords: Vaginal Bleeding, Pregnancy Outcomes, Obstetric Complications, Feto-maternal Morbidity & Mortality.

Introduction

A typical obstetric issue that worries both the patient and the obstetrician is vaginal bleeding during the first trimester of pregnancy. The first trimester is a dynamic time that includes organogenesis, implantation, fertilization, and ovulation. Early in the pregnancy, between 20 and 25 percent of pregnant women will have some bleeding [1]. According to estimates, the majority of abortions occurring in the early stages of the first trimester are caused by chromosomal abnormalities, and over 90% of threatened abortions take place during this time [2]. Miscarriage, ectopic pregnancy, molar pregnancy are the three main causes of bleeding during the first trimester. Causes not related to pregnancy are cervical erosion, polyps, vaginal varicosities, or cervical malignancy.

First-trimester vaginal bleeding has been associated with pregnancy outcome such as threatened abortion, incomplete abortion, complete abortion, missed abortion, blighted ovum, inevitable abortion and in later half of pregnancy it can be associated with pre-eclampsia, eclampsia, gestational hypertension, antepartum hemorrhage (Placenta Previa, abruption), PPROM, PROM, term delivery, mode of delivery (Instrumental and Caesarean Deliveries), Postpartum Hemorrhage (PPH) and Retained Placenta. The perinatal outcomes included preterm delivery, low birth weight, IUGR and IUFD [3].

Aim: To study pregnancy outcome in women with first trimester bleeding.

Objectives: To assess pregnancy & perinatal outcome in women with first trimester bleeding.

Material and Methods

This study was carried out at Shifaa hospital, Bangalore in the Department of Obstetrics and Gynecology. Pregnant women less than 12

weeks gestational age presenting with first trimester bleeding attending obstetrics OPD at Shifaa hospital from July 2022 to July 2023. Patient were followed up prospectively from first examination until end of pregnancy. Women who seek hospital assessment for history of vaginal bleed within their first trimester were also subjects for this study.

Inclusion criteria: Pregnant women within 12 weeks gestational age presenting with bleeding pv, Age more than 18yr, Singleton pregnancy.

Exclusion criteria: Age more than 35yrs, multiple pregnancy, Non Obstetric causes of bleeding pv in pregnancy, 1st trimester outcomes like abortions, ectopic pregnancy, molar pregnancy etc. Women not willing to participate

Data Collection: Data was collected from the pregnant women who are presenting with bleeding in their 1st trimester coming to obstetric OPD, and for admission. An observational study conducted using a standardized study proforma which includes demographic characteristics, previous history of bleeding pv , obstetric history, menstrual history, family history, personal history, past medical and surgical history, general physical examination, systemic examination, obstetric examination, relevant investigations, antenatal, intranatal, postnatal and fetal outcome.

The information collected was analysed and pregnant women were followed up till their delivery. All maternal & fetal complications occurring during their second and third trimesters, difficulty during delivery and postpartum period were noted and correlated with history of bleeding in first trimester.

Results

In the present study, total sample size of 150 pregnant women with first trimester bleeding, majority of women belonged to 23-26 years which were 51 (34 %), most were multigravida, 88 (58.7%), 21 (14%) of pregnant women had history of abortions in past pregnancies and 91 women continued pregnancy till term (60.7%) [Table-1].

Table-1: Distribution of obstetric fctors

Parameters	Variables	Frequency	Percentage
Age in years	18 – 22	38	25.3%
	23 – 26	51	34.0%
	27 – 30	42	28.0%
	30 – 35	19	12.7%
Parity	Primigravida	62	41.3%
	Multigravida	88	58.7%
Previous abortions	Yes	21	14.0%
	No	129	86.0%
Gestational Age	Term	91	60.7%
	Preterm	59	39.3%

Among total 150 pregnant women, 14(9.4%), developed pre-eclampsia, 2(2.4%), developed Eclampsia, 6 (7.3%), developed abruption, 29(19.3%) had PROM & 4 (2.7%) had low lying placenta [Table 2].

In present study, mode of delivery constitutes of 92 (61.3%) normal delivery, 13(8.7%) had instrumental delivery, and 45(30.0%) underwent cesarean section. Among intrapartum complications, 4(8.7%) had manual removal of placenta, 1(0.7%) had PPH. 31(20.7%) had low birth weight babies [Table 3].

Table-2: Antepartum complications			
Parameters	**Variables**	**Frequency**	**Percentage**
Pre- eclampsia	Yes	14	9.4%
	No	136	90.6%
Eclampsia	Yes	2	2.4%
	No	148	98.6%
Abruption	Yes	6	7.3%
	No	144	92.7%
Premature rupture of membrane	Yes	29	19.3%
	No	121	80.7%
Low lying placenta.	Yes	4	2.7%
	No	146	97.3%

Table-3: Intrapartum complications & neonatal outcome			
Parameters	**Variables**	**Frequency**	**Percentage**
Mode of delivery.	Normal vaginal delivery	92	61.3%
	Instrumental	13	8.7%
	C Section	45	30.0%
Manual removal of placenta	Yes	4	2.67%
	No	146	93.33%
Post partum hemorrhage	Yes	1	0.7%
	No	149	99.3%
Low birth weight	Yes	31	20.7%
	No	119	79.3%

Discussion

First-trimester bleeding is not only associated with miscarriage but also with a higher rate of pregnancy complications in later half of pregnancy. First trimester bleeding is often a sign of threatened abortion and as such worrisome for both patient and doctor. If on ultrasound a viable fetus observed and there is a blood collection or clot around the fetal 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 [4]. Because of impaired implantation and invasive trophoblasts, spontaneous abortion may occur in early pregnancy while preterm delivery, PPROM, placental abruption and preeclampsia may happen in later period of pregnancy.

Ultrasound examination (TVS) was considered an important investigation for the diagnosis of the cause of bleeding & evaluating the rising of serum level of β HCG is also helpful [5-6]. 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 [7-8].

Saraswat et al performed a systematic review and demonstrated that first trimester bleeding has no effect on route of delivery [9]. But some other studies have shown that possibility of caesarean section in women with bleeding is more than others. Many studies agreed with low birth weight of new-borns and Apgar of 5 minute less than 7 in pregnancies with first trimester bleeding. In the present study, 25.3% belong to 18-22 years, 34% belong to 23-26 years. 28% belong to 27-30 years, 12.7% belong to 30-35 years. Patel et al study reported that 37% belong to 21-25 years, 31% belong to 26-30 years [10]. Gollapalli et al in their study included 200 pregnant women with first trimester bleeding per vagina where32.5% belong to 21-25 years, 52% belong to 26-30 years [11].

Manonmani and Nandini in their study on 150 pregnant women found that 58% of cases were primi and 42% of cases were multigravida. Kamble et al., found that 64% cases were primi and 36% were multigravida. While in a study by Amirkhani et al., found that 56.7% cases were primi and 43.3% cases were multigravida [12-14] In the present study, 14% had previous abortions. Patel et al reported that 40% had previous history of abortion. In the present study, 9.4% were diagnosed with Preeclampsia and 2.4% with Eclampsia. Davari Tanha et al in their study reported an incidence of 4.6% with pregnancy induced hypertension. Lykke et al reported an incidence of 4% with pregnancy induced hypertension. Kamble et al reported an incidence of Preeclampsia to be 5.5% [10, 13, 15-16].

In present study 7.3% were diagnosed with Abruptio placenta. Amirkhani et al reported 15% patients went into preterm labour, 8.3% had PROM and 13.3% patients had placental abruption. In the present study, 19.3% had premature rupture of membrane. Amirkhani et al reported that 8.3% had PROM. 60.7% had term pregnancies and 39.3% were Preterm [14]. Devari - Tanha et al had 0.006 % & Konje et al had 0.04 % low lying placenta cases in women with vaginal bleeding in 1st trimester. But our study had 2.4% whch is mostly significant complication noted [15,17].

Patel et al reported that out of all patients of first trimester bleeding, 64 pregnancies continued beyond 20 weeks of gestation out of which 78.1% patients delivered full term, 21.9% delivered preterm. 14.1% had fetal growth restriction (FGR), 30.3% had NICU admission, 9.4% perinatal death and 35.9% were low birth weight (LBW). Out of all patients who continue pregnancy beyond 20 weeks of gestation, PIH was seen in 6.2% cases, placenta previa in 3.1%, placental abruption in 7.8%, and PPROM in 18.7% [10]. Gollapalli et al reported that, 8.50% of cases had 1st trimester miscarriage, 4.50% cases had second trimester miscarriage, 11.50% pre term delivery and 75.50% full term delivery [11].

Study by Manonmani and Nandini noticed that 68% full term deliveries, 14% pre term delivery, 4% 2nd trimester abortion and 14% first trimester abortion.61.3% had normal vaginal delivery, 8.7% had instrumental delivery and 30% had undergone C Section [12]. Wijesiriwardana et al had a large population study in which 16.8 % of pregnant women had cesarean delivery [18]. In the present study, 2.6% had manual removal of placenta & 0.7% had post-partum hemorrhage.

Patel et al reported that 59.5% of patient had a vaginal delivery, and 40.5% had caesarean section and commonest indication was fetal distress 60%. In the present study, 20.7% had low birth weight. Arafa et al had 14 LBW out of 101 total cases [10, 19]. Although study results showed various maternal and fetal complications, most of the pregnancies were brought till last trimester with support and high attention. Obstetricians should have a wide range of thoughts regarding pregnancy outcomes in such women when, presented with first trimester bleeding to manage them appropriately.

Conclusion

Although from this study it is reassuring that the majority of women with first trimester bleeding have pregnancy outcomes comparable to those without such bleeding it is evident that they face a higher relative risk of some adverse obstetric and neonatal

outcomes. Knowledge of these adverse complications associated with 1st trimester bleeding, may also facilitate decision making regarding management, mode, place and time of delivery which will inevitably improve pregnancy outcome.

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*All correspondences to: Dr. Sravani Vemireddy, Department of Obstetrics and Gynecology, Shifaa Hospital, 332, Dar-Us-Salam Building, Queens Road, Bengaluru-560052, Karnataka, India. Email: sravanivemireddy32@gmail.com