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Original Research Article

Pregnancy outcome in women presenting with per vaginal bleeding in first trimester of pregnancy

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ABSTRACT

Background: Approximately 16%-25% of pregnancies are complicated by first trimester bleeding. The wide range of causes of early pregnancy bleeding, threat to loss the pregnancy and fear of having any life threatening cause puts pregnant female with first trimester bleeding into the state of uncertainty which leads to anxiety and depression. The objective of this study was to determine fetal outcome in women presenting with per vaginal bleeding in first trimester of pregnancy.

Methods: This prospective observational study was carried out on 75 women presenting with complain of first trimester bleeding at Kulsumbai Valika hospital, a tertiary care hospital located in SITE area Karachi, Pakistan from July 2019 to July 2020 for a period of 1 year. A Performa was designed to collect information and patient followed until pregnancy is terminated.

Results: The majority of participants presented at 8th week of gestation. Out of 75 participants who presented with first trimester bleeding 40% ended up in miscarriage. 6% had ectopic, 2% had molar pregnancy, 4% had placenta previa, 6% had preterm birth and 40% had healthy infant at the end of pregnancy.

Conclusions: Bleeding in pregnancy is a red flag sign and needs to be addressed with wise approach to have optimal possible maternal and fetal outcomes.

Keywords: Bleeding, Ectopic, First trimester, Molar, Miscarriage, Outcome, Preterm, Previous miscarriage

INTRODUCTION

Approximately 16%-25% of pregnancies are complicated by first trimester bleeding.¹⁻³ Bleeding in early pregnancy is a common symptom and its etiologies vary from very benign conditions to life threatening events. Common causes of first trimester bleeding include implantation bleeding, local cause i.e. cervicitis and miscarriages but there could be some life threatening causes as well including ectopic pregnancy and molar pregnancy. Many pregnancies with early pregnancy bleeding continue beyond age of viability and also end in healthy term infant but in some cases it may end up with placenta Previa or prematurity.

Around 20% of pregnancies end up in miscarriage and 1.1% have ectopic pregnancy.⁴ Molar pregnancy is a rare cause of early pregnancy bleeding 0.14%, it is more common in Asian population as compared to non-Asians and the incidence in Asian women is 0.2%.⁵ Although ectopic pregnancy is a less common cause but it is associated with maternal mortality and the mortality rate is 0.2/1000.⁴

The chance of having a healthy term infant with first trimester bleeding is stated from 50% to 75% in some studies.^{6,9} The wide range of causes of early pregnancy bleeding, threat to loss the pregnancy and fear of having any life threatening cause puts pregnant female with first

trimester bleeding into the state of uncertainty which leads to great anxiety and depression.⁷

There is uncertainty regarding maternal and fetal outcome in patients with first trimester vaginal bleeding, this uncertainty makes the counselling difficult for doctors who are dealing with the females with condition. Studies addressing this condition and the outcome will help clinicians in counselling. There are few studies done recent past in our country who could address this issue.⁸

The objective of this study was to determine outcome in women presenting with per vaginal bleeding in first trimester of pregnancy. This study will not only help general physicians, emergency department doctors and obstetricians to deal with uncertainty associated with early pregnancy bleeding but will help in counselling as well.

METHODS

This prospective observational study was carried out on 75 women presenting with complain of first trimester bleeding at Kulsumbai Valika Hospital, a tertiary care hospital located in SITE area Karachi, Pakistan from July 2019 to July 2020 for a period of 1 year. Patients with history of amenorrhea and positive pregnancy test with bleeding per vaginum in first trimester i.e. first 12 weeks of pregnancy.

In this study clinical history was taken followed by gynecological examination of the participants at booking visit. The participants were followed up in antenatal clinic and repeat ultrasound scans were done if required. The design of study is used to study relationship between variables. Independent variable of this study was a history of pervaginal bleeding and dependent variables was pregnancy outcome. A performa was designed to collect information and patient followed until pregnancy is terminated.

Inclusion criteria

Less than 3 months of amenorrhea, positive urine pregnancy test, bleeding per vaginum in first 12 weeks of pregnancy, no previous history of cervical and vaginal pathology patients were included in the study.

Exclusion criteria

Participants refused to give consent, all patients presenting beyond 12 weeks of pregnancy, patients with known bleeding tendencies were excluded from the study.

Statistical analysis

Quantitative variables compared using t-test. Qualitative variables compared using chi-square and fisher exact test. A p-value<0.05 was considered statistically significant.

The history of vaginal bleeding was categorized as no. of episodes of vaginal bleeding and divided into 1-3 bleeding episodes, 3-5 bleeding episodes, and more than 5 bleeding episodes. Ultrasound scans were done in all included participants. Patients were followed prospectively and outcomes were studied.

Fetal outcomes were categorized as miscarriage (loss of pregnancy before 24 completed weeks of pregnancy), ectopic pregnancy (pregnancy outside uterine cavity), molar pregnancy (disorganized proliferation of trophoblastic tissue), placenta previa (placenta attached to lower uterine segment), preterm birth (birth before 37 completed weeks of pregnancy), healthy term infant (birth after 37 completed weeks of pregnancy).

RESULTS

A total of 75 participants were included in the study. Mean age of study population was 29 ± 8.0 , out of these 13 were primigravida and 62 were multigravida. The majority of participants presented at 8th week of gestation. Other important variables of history, examination and ultrasound are elaborated in Table 1.

Table 1: Variable of history, examination and ultrasound findings.

Variable	N (%)
Previous miscarriage	Present 18 (24)
	Absent 57 (76)
Evidence of intrauterine pregnancy	Present 10 (13)
	Absent 65 (86)
Fetal cardiac activity	Present 47 (62)
	Absent 28 (37)
Episodes of bleeding	01-3 21 (28)
	04-5 31 (41)
	>5 23 (30)

Out of 75 participants who presented with first trimester bleeding 40% ended up in miscarriage. 6% had ectopic, 2% had molar pregnancy, 4% had placenta previa, 6% had preterm birth and 40% had healthy infant at the end of pregnancy Table 2.

Table 2: Frequencies of outcome variable.

Outcomes	N (%)
Miscarriage	30 (40)
Ectopic pregnancy	5 (6.7)
Molar pregnancy	2 (2.6)
Placenta previa	3 (4)
Preterm birth	5 (6.7)
Healthy term infant	30 (40)

The significant factor in past history was history of miscarriage which was found in 18 participants. Out of these 18, 14 (77.7%) ended in miscarriage, 2 (11.1%) had

molar and only 2 (11.1%) had healthy term infant. 57 participants had no previous history of miscarriage and out of them 28(49%) had healthy term infant, 3 (5%) had placenta previa and 5 (8%) had preterm birth (Table 3).

Table 3: Relationship between past history of miscarriage and outcome.

Outcome variable	Past history of miscarriage	No past history of miscarriage
Miscarriage	14	16
Ectopic pregnancy	-	5
Molar pregnancy	2	-
Placenta previa	-	5
Preterm	-	3
Healthy term infant	2	28

Individuals who had fetal cardiac activity at presentation had better outcomes than those who had not. Out of 47 participants with fetal cardiac activity 30 (63%) had healthy term infant, 5 (10%) had preterm birth, 3 (6%) had placenta previa and only 9 (19%) had miscarriage. While out of 28 individuals with no fetal cardiac activity 21 (75%) had miscarriage, 5 (17%) had ectopic and none had healthy term infant (Table 4).

Table 4: Relationship between cardiac flicker on ultrasound and outcome.

Outcome variable	Cardiac flicker present	Cardiac flicker absent
Miscarriage	9	21
Ectopic pregnancy	-	5
Molar pregnancy	-	2
Placenta previa	5	-
Preterm	3	-
Healthy term infant	30	-

Table 5: Relationship between severity of bleeding and outcome.

Outcome variable	1-3 bleeding episode	3-5 bleeding episodes	>5 bleeding episodes
Miscarriage	9	11	10
Ectopic pregnancy	-	5	-
Molar pregnancy	-	2	-
Placenta previa	-	-	5
Preterm	-	3	-
Healthy term infant	12	10	8

Individuals with less bleeding episodes i.e. 1-3 were 21, out of them 9 (42%) had miscarriage and 12 (57%) had

healthy term infants. Out of 31 individuals with 4-5 bleeding episodes 11 (35%) had miscarriage, 5 (16%) had ectopic, 2 (6%) had molar and 14 (45%) had healthy term infant. Out of 23 individuals with more than 5 bleeding episodes 10 (43%) had miscarriage, 8 (34%) had healthy term infants and 5 (2%) had preterm birth (Table 5).

DISCUSSION

First trimester vaginal bleeding is a common presenting complaint not only at primary healthcare setting but also at the emergency department of a tertiary care hospital. This condition carries multiple etiologies behind it which impact the health of not only mother but also the newborn. Clinical history, examination and ultrasound scan plays an important role in diagnosis and to formulate a prognosis. This study takes many relevant points of history, examination and ultrasound examination into consideration.

The mean age of our study population was 29±8, the mean age of gestation at presentation was 8 weeks and majority of participants were multigravida, this data is almost similar to study done by Riaz Ahmed and Farah Naz in Gujrat, Pakistan, but the data is different from Nigerian study in which the gestational age at presentation was around 12 weeks.⁷ This difference could be due to geographical and racial variation between the two populations.⁸

Although first trimester bleeding is associated with adverse pregnancy outcome, 40% of study population had healthy term infants at the end of their pregnancies, the same percentage i.e. 40% ended in miscarriage and the rest 10% also had bad outcomes (6.7% ectopic, 2.6% molar, 4% preterm, and 6.7% placenta previa), these results are quite similar to an Indian study where 50% of study participants with first trimester bleeding had healthy infants at the end of their pregnancies, 45.5% had miscarriage, 1% had molar pregnancy and 8% had ectopic pregnancy.⁹ Study done in Turkey also strengthens the fact that early pregnancy bleeding is associated with adverse outcomes and states that bleeding in early pregnancy makes the index pregnancy high risk.¹⁰

Previous history of miscarriage has strong relation with adverse pregnancy outcome in current pregnancy especially if the index pregnancy is complicated by early pregnancy bleeding. Our study also establishes this relationship where 24% of participants had history of miscarriage in previous pregnancy and out of them 77% ended in miscarriage and only 11% had healthy infants. The study done by Faswila et al also shows that history of miscarriage in previous pregnancy also increases the risk of adverse pregnancy outcomes like PROM and IUD apart from miscarriage.¹¹

Ultrasound scan at presentation to healthcare facility plays a very important role in making diagnosis in

patients with early pregnancy bleeding.^{12,13} Our study also shows good maternal and fetal outcomes in patients who had fetal cardiac activity present at the time of first presentation to the hospital.

Amount and frequency of bleeding has strong relation with pregnancy outcomes especially if the bleeding is associated with pain. The less the amount of bleeding the less the chance of losing the pregnancy while heavy and repeated bleeding not only increases the risk of miscarriage but recurrent bleeding also makes the pregnancy high risk even after reaching the age of viability. In Ara et al most of the women with heavy bleeding had abortion while rate of continuation of pregnancy was higher with spotting.⁹ In Kamble et al, 96.44% women with heavy bleeding had abortion and 3.55% continued their pregnancy. In women with spotting, 81.26% had abortion and 18.74% continued their pregnancy.¹⁴ Based on this study 43% of those who had more than 5 episodes of bleeding ended up in miscarriage and only 34% had healthy term infants.

Strengths

The strength of this study is its prospective design, consecutive recruitment, and well characterized patient's cohort.

Limitations

This study is conducted at tertiary care hospital where the high risk cases are brought and many females with small amount of PV bleeding in pregnancy go unnoticed as they attend primary care settings.

CONCLUSION

Bleeding in pregnancy is a red flag sign and needs to be addressed with wise approach to have optimal possible maternal and fetal outcomes. Timely and appropriate management and counselling will help in reducing complication as well as the anxiety associated with the condition. This study also establishes the relationship between adverse pregnancy outcomes and first trimester bleeding especially if associated with heavy and recurrent bleeding. However a large multicentre study on this topic in our region is required.

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