

Comparison of Adverse Obstetrical Outcome in Patients with and without First Trimester Vaginal Bleeding

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ABSTRACT

Aim: To compare frequency of adverse obstetrical outcome in patients with and without first trimester vaginal bleeding.

Study design: It was a prospective cohort study.

Duration: Nine months from January 2013 to September 2013.

Settings: Department of Obstetrics & Gynaecology, Bahawal Victoria Hospital, Bahawalpur.

Methods: A total of 266 women (133 in each group) fulfilling the inclusion/exclusion criteria were enrolled in the study.

Results: In our study, comparison of obstetrical outcome in both groups was done which shows that preterm delivery was recorded in 60(45.11%) in exposed group while 27(20.30%) in non-exposed group, p value was 0.000 which shows a significant difference, PPROM was calculated as 26(19.55%) in exposed and 11(8.27%) in non-exposed group, p value was calculated as 0.007 also showing a significant difference between the two groups.

Conclusion: We concluded that first trimester threatened miscarriage is significantly associated with PPROM and Preterm delivery as compared to those patients without first trimester threatened miscarriage.

Keywords: Vaginal bleeding, preterm delivery, adverse obstetric outcome

INTRODUCTION

Threatened miscarriage, defined as vaginal bleeding before 24 weeks of gestation, is a common complication affecting about 20% of pregnancies¹. About half of these will end in miscarriage within 20 weeks of gestation² and those women who remain pregnant have an increased risk of developing other complications later in pregnancy e.g., preterm delivery and PPROM^{3,4}.

Local hemostatic factors in the uterus during implantation, decidualization, and early pregnancy, for example, tissue factor expressed in cytotrophoblasts⁵ and systemic factors in the women during ongoing pregnancy seems to play distinct roles in a successful pregnancy; dysfunction of any of these factors could lead to an adverse outcome⁶ for example local formation of thrombin and soluble fms-like tyrosine kinase-1. Both of these seem to be involved in development of placental abruption and preeclampsia⁷.

Studies that have looked specifically at the relationship between bleeding and miscarriage usually are conducted in populations recruited from hospitals or emergency departments⁸. Many of the bleeding episodes that require immediate medical attention mark the actual miscarriage event; thus,

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these studies do not provide useful information about the risk of miscarriage for women who experience bleeding that does not immediately precede miscarriage.

This study was conducted as no studies are found published in Pakistan regarding this issue while the incidence of first trimester vaginal bleeding is also noticed higher in our daily clinical practice, by this study we will compare the frequency of obstetrical outcome in patients presenting with and without first trimester vaginal bleeding so that the results may help the obstetricians to decide antenatal surveillance and management of these patients particularly in primary and secondary care centers, where the awareness and experience regarding this issue is lacking.

MATERIAL & METHODS

A total of 266 women (133 in each group). Two equal groups were formed, exposed and non-exposed, exposed group was allotted to the study group patients (with first trimester vaginal bleeding). All patients with reproductive age group, Any parity, Women with bleeding in first trimester, Fetal heart activity present while non-exposed included all patients with reproductive age group, any parity, those cases with no vaginal bleeding in first trimester of gestation (confirmed on medical history and

record) while High risk pregnancies (patients with gestational/ pregestational hypertension, gestational/pre-gestational diabetes, previous history of vaginal bleeding, premature delivery and PPRM with the confirmation on medical history and record). An informed consent from the patients was taken to include their data in our study. As the study is cohort, no permission from hospital ethical committee is required. All women from both groups were followed from their first antenatal visit to delivery. Adverse obstetrical outcome according to operational definition were recorded in both groups.

The collected data was entered and analyzed in computer software SPSS version 13. Mean±sd was calculated for age and gestational age at delivery. On delivery of the patients, frequency & percentages for obstetrical outcome i.e. preterm labour, PPRM and parity were recorded. Chi-square test was applied to compare both groups taken $P \leq 0.05$ as significant. Stratification was done to control the effect modifiers with respect to age, gestational age and parity and applying chi square test relative risk was calculated between exposed and non-exposed group.

RESULTS

In this study, 63(47.37%) in exposed and 59(44.36%) in non-exposed group were between 16-30 years, 49(36.84%) in exposed and 51(38.35%) in non-exposed group were between 31-35 years while 21(15.79%) in exposed while 23(17.29%) in non-exposed group were between 36-40 years of age, mean±sd was calculated as 29.34±6.05 years (Table 1).

Gestational age (in weeks) was recorded which shows that 60(45.11%) in exposed and 27(20.30%) in non-exposed group had <37 weeks of gestation while 73(54.89%) in exposed group and 106(79.70%) in non-exposed group were between 37-40 weeks of gestation, mean±sd was calculated as 37.26±2.50 weeks in exposed and 38.39±2.09 weeks in non-exposed group (Table 2).

Table 1: Age distribution (n=100)

Age in years	Exposes	Non exposed
16-30	63(47.37%)	59(44.36%)
31-35	49(36.84%)	51(38.35%)
36-40	21(15.79%)	23(17.29%)

Mean±SD: 29.34±6.05

Parity of the patients was recorded which shows that 88(66.17%) in exposed group and 98(73.68%) in non-exposed group were between 1-3 para while 45(33.83%) in exposed and 35(26.32%) in non-exposed group had >3 paras, p value was calculated as 0.18, which shows insignificant difference between two groups.

Comparison of obstetrical outcome in both groups was done which shows that preterm delivery was recorded in 60(45.11%) in exposed group while 27(20.30%) in non-exposed group, p value was 0.000 which shows a significant difference, PPRM was calculated as 26(19.55%) in exposed and 11(8.27%) in non-exposed group, p value was calculated as 0.007 also showing a significant difference between the two groups (Table 4).

Table 2: Gestational age of the Patients (n=266)

Gestational age (in weeks)	Exposes	Non exposed
<37	60(45.11%)	27(20.30%)
37-40	73(54.89%)	106(79.70%)
Mean±SD	37.26±2.50	38.39±2.09

Table 3: Parity of the Patients (n=266)

Pare	Exposes	Non exposed
1-3	88(66.17%)	98(73.68%)
>3	45(33.83%)	35(26.32%)

P value: 0.18

Table 4: Comparison of Obstetrical Outcome (n=266)

Outcome	Exposes	Non exposed
*Preterm delivery	60(45.11%)	27(20.30%)
**PPROM	26(19.55%)	11(8.27%)

P values: *0.000 **0.007

DISCUSSION

Threatened miscarriage, defined as vaginal bleeding before 24 weeks of gestation, is a common complication affecting about 20% of pregnancies. It has been shown to be associated with an increased risk of poor obstetric outcomes such as preterm labor, low birth weight, and premature rupture of membranes.

In our study, age distribution of the patients was done which shows that 63(47.37%) in exposed and 59(44.36%) in non-exposed group were between 16-30 years, 49(36.84%) in exposed and 51(38.35%) in non-exposed group were between 31-35 years while 21(15.79%) in exposed while 23(17.29%) in non-exposed group were between 36-40 years of age, mean±sd was calculated as 29.34±6.05 years while comparison of obstetrical outcome in both groups was done which shows that preterm delivery was recorded in 60(45.11%) in exposed group while 27(20.30%) in non-exposed group, p value was 0.000 which shows a significant difference, PPRM was calculated as 26(19.55%) in exposed and 11(8.27%) in non-exposed group, p value was calculated as 0.007 also showing a significant difference between the two groups.

The findings of the study are in agreement with a study by Davari-Tanha F⁹ who investigated the risk

of adverse pregnancy outcome in women presenting with first-trimester threatened miscarriage, a comparison for women presenting with bleeding in the first trimester and asymptomatic age-matched controls, the results of the study reveal that preterm delivery in 52.9% (46/150) versus 14.7% (66/450) and PPROM 16%(24/150) versus 6.4% (29/450).

It was hypothesised that first-trimester bleeding may indicate an underlying placental dysfunction, which may manifest later in pregnancy causing adverse outcomes i.e. increased risk of preterm delivery, preterm prelabour rupture of membranes (PPROM), placental abruption and intrauterine growth restriction (IUGR)¹⁰.

The association between vaginal bleeding and preterm delivery has also been noted by others^{11,12}. Batzofin et al¹³ and Williams et al¹⁴ reported that patients with bleeding had double the risk of preterm delivery compared with patients without bleeding. The study of Williams et al. was limited to first trimester bleeding^{14,15}. Batzofin et al¹³ included patients with bleeding up to 20 weeks. Weiss JL and Pantel-Silverman failed to show an association between preterm delivery before 36 weeks of gestation with light vaginal bleeding in the first or second trimester of pregnancy. Another study found that preterm delivery is increased significantly in patients with either light (OR, <2.0) or heavy (OR, 3.0) first-trimester bleeding.¹⁶

However, the hypothesis of the current study that “there is a difference of adverse obstetrical outcome in patients with and without first trimester vaginal bleeding” is justified.

CONCLUSION

We concluded that first trimester threatened miscarriage is significantly associated with PPROM and Preterm delivery as compared to those patients without first trimester threatened miscarriage.

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