

## Pregnancy Outcome in First Trimester Bleed

MUNAZZA AYUB<sup>1</sup>, SUMERA BEGUM<sup>2</sup>, YAD ZAMIN<sup>3</sup>, SAJJAD KHAN<sup>4</sup>, MARYAM MUNIR<sup>5</sup>, ABEER<sup>6</sup>

<sup>1,2</sup>Consultant Gynecologist, Gynae/ Obs, DHQ Hospital, Timergara

<sup>3</sup>Consultant Orthopedic Surgeon, DHQ Hospital, Timergara

<sup>4</sup>Consultant Cardiologist, DHQ Hospital, Timergara

<sup>5</sup>Consultant Surgeon, Khyber Teaching Hospital, Peshawar

<sup>6</sup>Consultant Gynecologist, Gynae/ Obs, Khyber Teaching Hospital, Peshawar

Corresponding author: Munazza Ayub, Email: [munazzaayunkhan.00@gmail.com](mailto:munazzaayunkhan.00@gmail.com), Cell: +92 335 5892555

### ABSTRACT

**Background:** Bleeding is common during pregnancy and it is quite normal during first trimester. As the first bleed indicates, implantation of fertilized egg in the lining of uterus. It is common complication of almost 16-25% of pregnancies. 20% of the women experience light or spotted bleeding. Half of these pregnancies survive while the rest lead towards miscarriage. The first trimester bleed can be because of different pathological conditions mainly: miscarriage, cervical bleeding, infection and ectopic pregnancy.

**Methodology:** Women with bleeding or pain or both in pregnancy, without any conclusive analysis from December 2020 to December 2021 were presented to Gynecology ward, of DHQ Hospital, Timergara and Khyber Teaching Hospital, Peshawar. Evaluation was done with history and physical examination counting ultrasonography, pelvic examination, an HCG level and cervical cultures. 60 gravid females with less than 20 weeks of gestational age that presented with substantial per vaginal bleeding were recruited into the study population. Patients were properly counseled and each patient was given informed oral consent before being recruited for the research. Information about these prenatal, obstetric, and puerperal patients was recorded in an organized obstetric data sheet. SPSS version 16.0 was used for analysis of data. The chi-square test was used to evaluate relationships among groups.

**Results:** The mothers mean age in the study and group of control was  $24.7 \pm 3.2$  years and  $23.93 \pm 3.3$  years, correspondingly ( $P > 0.05$ ). The study group has mean parity of  $1.9 \pm 1.3$  and in the control group  $2.1 \pm 1.4$  ( $P > 0.05$ ). At the time of presentation; mean gestational age for bleeding in the study group was  $12.3 \pm 1.68$  weeks and for control group, it was  $12.4 \pm 1.39$  weeks ( $P > 0.05$ ). The comparison in both groups was accomplished but no significant differences in relations of birth history, gestational age and age was noted.

**Conclusion:** The study found that recurrent episodes of bleeding per vaginal in late gestation and bleeding per vaginal in early gestation were related with premature delivery, low birth weight and miscarriage.

**Keywords:** Apgar scores, Abruptio placentae, placenta praevia, low birth weight.

### INTRODUCTION

Bleeding is common during pregnancy and it is quite normal during first trimester. As the first bleed indicates, implantation of fertilized egg in the lining of uterus. It is common complication of almost 16-25% of pregnancies (1). 20% of the women experience light or spotted bleeding. Half of these pregnancies survive while the rest lead towards miscarriage(2). The first trimester bleed can be because of different pathological conditions mainly: miscarriage, cervical bleeding, infection and ectopic pregnancy(3). Outcome of the pregnancy depends upon the amount of bleed, maternal and gestational age(4). Bleeding is common in women of advanced age, having history of miscarriage or infertility problems(5). Women experiencing heavy amount of bleeding are more suspected to abort spontaneously before 24 weeks of gestation(6). First trimester bleeding is hypothesized to have an underlying placental dysfunction that leads to severe complications later. Complications include pre-eclampsia, preterm labor, premature rupture of the membranes (PPROM), detachment of the placenta and intrauterine growth retardation (IUGR) (7).

The goal of this analysis was to assess the relationship between miscarriage and historical factors and various clinical symptoms in a cohort of females who presented with bleeding or pain in the 1<sup>st</sup> trimester of pregnancy and were not identified at the time of arrival.

### METHODOLOGY

From December 2020 to December 2021, women with pain or bleeding during pregnancy, or both, without a definitive diagnosis, reported to the gynecological service at the DHQ Hospital, Timergara and Khyber Teaching Hospital, Peshawar. Assessment was based on medical history and physical examination, including pelvic examination, ultrasound, cervical cultures, and HCG levels. The study population included 60 pregnant women less than 20 weeks of age who experienced significant vaginal bleeding.

In this study, the description of substantial bleeding per vaginal during gestation was any bleeding from vagina that

required the usage of minimum one sanitary napkin per day. These cases were equated to the control group for maternal age in years (+2), number of deliveries in weeks and gestational age and were followed until the end of pregnancy, and the infants 4 weeks after birth.

In both groups, serum pregnancy tests and obstetric ultrasound were used contingent on the age of gestational to authorize gravidness, establish the final diagnosis and exclude people at risk of a good pregnancy outcome. For women with bleeding at 6-10 weeks of gestation, ensuring control was a challenge as very few women book their pregnancies at this point during this week of pregnancy. On admission, a vaginal examination was performed using a sterile speculum to rule out cervical pathologies, such as erosions or cervical cancer, and to make a final diagnosis.

The study excluded subjects with aspects that could affect the pregnancy outcome in the case of the choice of the case and the control group. These include the clinical features of an incomplete or inevitable abortion, diagnosis of cervical failure, prior treatment, recurring of chronic situations such as high blood pressure, kidney disease or other heart conditions, major multiple births, assisted pregnancies, patients with sickle cell anemia, multiple pregnancies. The uterine fibroids, Maternal height <1.5 m simultaneous with pregnancy (diameter > 5 cm) and uterine scarring after cesarean section and myomectomy.

Patients were adequately advised and each patient obtained oral informed consent prior to study entry. Information on these patients in the prenatal, obstetric and obstetric periods was recorded in a structured obstetric card. Data was analyzed with SPSS version 16.0. The chi-square test was applied to evaluate the relationship among the groups.

### RESULTS

The mothers mean age in the study and group of control was  $24.7 \pm 3.2$  years and  $23.93 \pm 3.3$  years, correspondingly ( $P > 0.05$ ). The mean number of deliveries was  $1.9 \pm 1.3$  in the group of study and

2.1 ± 1.4 (p > 0.05) in the control group. The mean week of pregnancy on admission to the hospital due to bleeding was 12.3 ± 1.68 weeks in the group of study and 12.4 ± 1.39 weeks in the group of control subjects (p > 0.05). No statistically significant was seen in both group in terms of age difference, gestational age and birth history when groups were equated.

Table 1: Comparison of the result measures in the study population with the control group

Parameters	Cases (%)	Controls (%)	P
Mean duration of pregnancy	243.7	267.8	>0.05
Abortions/miscarriages	13 (21.66)	4 (6.66)	<0.05
Preterm deliveries	15 (25)	6 (10)	<0.05
LBW	17 (28.33)	7 (11.66)	<0.05
Birth-asphyxia	5 (8.33)	7 (11.66)	>0.05
(Apgar score <6)			
Perinatal mortality	1 (1.66)	1 (1.66)	>0.05
APH	4 (6.66)	3 (5)	
Primary PPH	3 (5)	4 (6.66)	>0.05
Cesarean section	4 (6.66)	6 (10)	>0.05
Congenital malformations		1 (1.66)	>0.05

The control group included 2 cases of intrauterine fetal death due to umbilical cord injury, and the study group included 1 case. In the study group, 4 patients (6.66%) developed arterial hypertension secondary to placenta previa and cesarean section was performed. One patient (1.66%) in the control group had PAH. 2 (3.33%) was due to the anterior placenta, 2 (3.33%) was due to mild damage to the placenta. They both had an urgent caesarean section. In the control group, in one case a congenital malformation (polydactyly) was found.

Of the 60 patients in the study group, 47 (78.3%) had bleeding in the first trimester and 13 (21.7%) in the second trimester. Three patients (5%) had bleeding twice, two patients (3.33) had recurrent bleeding, alternative vaginal bleeding during pregnancy, and anterior placenta cesarean section at 36 weeks gestation.

Table 2: The gestational ages comparison (trimesters) at bleeding with pregnancy outcome

Outcome measures	1. trimester bleeding	2. trimester bleeding (%)	P
Abortions/miscarriages	3 (23.07)	10 (76.93)	<0.05
LBW	4 (26.66)	11 (73.34)	<0.05
Preterm deliveries	2 (12.5)	14 (87.5)	<0.05
Birth-asphyxia	2 (40)	3 (60)	>0.05
Perinatal mortality			
APH	2 (50)	2 (50)	
Primary PPH	4 (80)	1 (20)	
Cesarean sections	2 (50)	2 (50)	>0.05
Congenital malformations		1 (100)	
Total	19 (31.66)	44 (73.33)	<<0.05

One female patient (1.66%) from the test group and two female patients (3.33%) from the control group were followed up after the 36th week of pregnancy.

In this study, out of 13 abortions observed during the follow-up period, there were 5 (38.46%) miscarriages, 4 (30.76%) incomplete and 4 (30.76%) complete abortions. Three of the total abortions took place in the first semester. There were also two cases of spontaneous abortions in the control group, all incomplete miscarriages and placental retention.

## DISCUSSION

Bleeding in earlier stages of gestation denotes to obstetric bleeding before the 20th week of pregnancy (8). According to many authors, vaginal bleeding occurs in the first 20 weeks of pregnancy in 12-40% of confirmed pregnancies (9-15). Spontaneous abortion occurs in 50% of them (10). Some authors report a substantial relation between early pregnancy bleeding and inadequate or poor outcomes of pregnancy (16-19). However,

most of these studies have only looked at bleeding in early pregnancy. In contrast, the spontaneous miscarriage rate in this study was significantly lower than previous values, but Ahmed et al. was 21.66%, similar to Al Qassim in Saudi Arabia (20).

Most of the subjects of this analysis reported bleeding in the 1<sup>st</sup> six months of pregnancy. 47 (78.3%) occurred in the first trimester, and 13 (21.7%) in the 2<sup>nd</sup> trimester. They were comparable to reports from other hospitals, but all showed similar patterns, although the exact rates differed (12,21).

Of the 13 patients whose pregnancies ended in spontaneous abortion in the study group, 10 (76.93) were patients with bleeding in the second trimester, and 3 (23.07%) were patients with bleeding in the first trimester (p < 0.05). Therefore, second trimester bleeding is more likely to be related to pregnancy loss. This is in line with most previously published reports (12,21)

In this study, the number of premature births was 15 (25%) and 6 (10%) in the control and study groups, correspondingly (p < 0.05). Therefore, there is a link between bleeding in premature birth and early pregnancy. All preterm deliveries befallen between 34-36 gestational week. This was lower slightly than other comparable studies. (15, 18, 21, 22). Strobino et al. recorded a frequency of 20.9%, which was slightly higher in the study group. Comparing preterm labor to the trimesters in this study, 2 (12.5%) and 14 (87.5%) showed p < 0.05 for 1<sup>st</sup> and 2<sup>nd</sup> trimester bleeding, correspondingly. It is more likely to be associated with preterm labor in the first trimester than during 1<sup>st</sup> trimester bleeding. This is constant with previous reports from comparable researches (12, 21).

The total number of DDA patients treated was 17 (28.33%) and 7 (11.6%); P < 0.05 for cases or controls and showed a strong association between early pregnancy bleeding and low birth weight. Similarly, most cases of DDA have been observed in patients with bleeding in the second trimester (12,21).

Other outcomes analysis indicators of the study, such as perinatal mortality, labor asphyxia, hypertension, congenital anomalies and cesarean section frequency did not reveal an association with early pregnancy bleeding. Although Saraswat et al. the 14 studies meta-analysis results of perinatal or obstetric outcomes in females with impending miscarriage in the 1<sup>st</sup> trimester of pregnancy demonstrated an association between spontaneous abortion, premature delivery, higher perinatal mortality and intrauterine growth restriction. Likewise, an earlier meta-analysis by Savitz and Ananth found that bleeding in early pregnancy is related with poor pregnancy outcomes, but more standard descriptions of vaginal bleeding are needed in forthcoming researches (22, 23).

## CONCLUSION

The study found that recurrent episodes of bleeding per vaginal in late gestation and bleeding per vaginal in early gestation were related with premature delivery, low birth weight and miscarriage. However, no substantial relation was found between bleeding in primary gestation and birth asphyxia, perinatal mortality, pulmonary hypertension due to rupture or placenta previa o, the frequency of cesarean sections, and the risk of congenital malformations. However, more population or multicenter studies are needed to additional assess the impact of early gestation bleeding on pregnancy outcomes in this situation.

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