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A Prospective Study of Final Outcome of Pregnancy in Last Two Trimesters with Vaginal Bleeding

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ABSTRACT
The purpose of this study was to evaluate the occurrence of vaginal bleeding during the second and third trimesters of pregnancy and its impact on the final outcome of the pregnancy. A total of 160 pregnant women with gestational ages less than 20 weeks presented with severe vaginal bleeding. The definition for notable vaginal bleeding during pregnancy, in this study was any vaginal bleeding that necessitates the use of at least one sanitary pad per day. The patients were paired with controls based on maternal age (+2 years) parity and gestational age in weeks. They were then monitored until the conclusion of their pregnancies, and the newborns were followed up 4 weeks after delivery. The highest number of instances are in the age range of 26-30 years, accounting for 41 cases or 39.0%. This is followed by 31 cases or 29.5% in the age group of 21-25 years during the second trimester. The youngest individual was 18 years of age, while the oldest individual was 37 years of age. Likewise, during the third trimester, most patients were between the ages of 26 and 30, with the next largest age group being 21-25. The current literature specifically emphasises the need of identifying risk factors for vaginal bleeding that have a significant impact on pregnancy outcomes. Vaginal bleeding, pregnancy, ultrasound.

INTRODUCTION

The goal of pregnancy is to have a healthy baby born to a healthy mother. Bleeding from the vagina throughout any stage of pregnancy is a concerning occurrence. Since it is estimated that over 20% of pregnancies involve vaginal bleeding, healthcare professionals frequently come across hemorrhagic disorders during pregnancy[1]. Actually, bleeding from the vagina while pregnant is a frequent cause for unplanned trips to the emergency department. It has the potential to be life-threatening and is always a source of fear for the sufferer and her family. Data indicates that approximately 15-20% of pregnancies that are clinically identified result in miscarriage. Additionally, it is estimated that around 50% of all pregnancies may end in miscarriage but are often mistaken as a delayed menstrual cycle rather than a pregnancy. Bleeding has been associated with premature birth, low birth weight and infants who are smaller than expected for their gestational age[2-5]. There have been varying reports regarding bleeding and congenital abnormalities[6-8]. These studies are restricted to examining bleeding incidents that are seen by healthcare professionals or reported during the later stages of pregnancy or after childbirth. Differences in methodology lead to a wide range of baseline bleeding prevalence in these studies (7-24%) which makes it challenging to compare the results.

Approximately half of the instances of bleeding during pregnancy have causes that are not known[9-11]. Therefore, it is not understood why vaginal bleeding is associated with preterm birth. Vaginal bleeding and subsequent thrombin production cause a series of protein breakdown reactions that might harm the foetal membranes, potentially leading to preterm premature rupture of the membranes (PPROM)[12,13]. Thrombin also triggers uterine contractions, which could potentially lead to preterm labour[12-14]. Besides the immediate impacts of the blood, bleeding may also indicate a hidden or unnoticed infection or inflammation in the uterus. This, in turn, is believed to be the cause of spontaneous preterm delivery, which presents as PPROM and preterm labour[12]. Not many research on vaginal bleeding have tried to distinguish between spontaneous premature birth caused by PPROM and preterm labour[15].

Other reasons contributing to this include structural abnormalities of the uterus, infections, hormonal disorders, immune system issues and environmental variables[16]. Genetic abnormalities are present in 5-10% of cases where there is bleeding in the second trimester followed by abortion. In these situations, there is a higher occurrence of autosomal trisomies but incidences of triploidy and monosomy X in foetuses are often identified. Antiphospholipid antibody syndrome is the most widely recognised immunological reason for second trimester haemorrhage. It represents 3-5% of patients who experience recurring pregnancy losses in the second trimester[17]. Maternal thrombophilia refers to a condition where there are genetically determined clotting factors that are aberrant, leading to an imbalance between the clotting and anticoagulation pathways and resulting in physiological thrombosis. The usually involved factors include deficiencies in protein C and protein S, as well as the presence of the factor V Leiden (FVL) mutation. Factor V Leiden and prothrombin gene mutation were frequently linked to bleeding and miscarriages[18]. There are clear signs that can indicate the prognosis of pregnancy, however continuous and repeated bleeding is not a good sign. The size of the blood clot and the seriousness of the initial bleeding have limited predictive significance[19]. Incompetent cervix is a widely recognised condition that can cause bleeding and spontaneous abortion during the second trimester. The primary clinical characteristic of this illness is painless widening of the cervix. The cause of cervical incompetence is not well understood but it has been suggested that past trauma to the cervix, such as procedures like dilatation and curettage, conization, cauterization or amputation, may be involved. It can also be present from birth, with or without abnormalities in the Mullerian system and the patient does not report any previous procedures on the cervix that could have caused injury[20]. Bleeding from the vagina during the third trimester typically requires immediate attention. An examination of the reason for bleeding involves evaluating clinical information regarding the quantity of bleeding, any accompanying dis.

MATERIALS AND METHODS

The population for this study consisted of 160 pregnant women who had scheduled appointments at the prenatal clinics and reported experiencing bleeding or spotting per vaginum during the second and third trimester. These patients were continuously monitored till the final result of their pregnancy. A total of 160 pregnant women at gestational ages less than 20 weeks who experienced substantial vaginal bleeding between January and December 2016 were included in the study. The definition for notable vaginal bleeding during pregnancy, in this study was any vaginal bleeding that necessitates the use of at least one sanitary pad per day. The patients were paired with controls who had similar maternal age (+2 years) parity and gestational ages in weeks. They were then monitored until the conclusion of their pregnancies and the babies were followed up 4 weeks after birth. During the third trimester, they have another ultrasound examination to determine the location of the placenta if the previous scan had shown a placenta that was positioned low. Women who experienced bleeding or spotting from the vagina in the third

trimester should also get an urgent ultrasound to determine the location of the placenta if a previous scan had indicated a low-lying placenta. A visual examination was conducted using a speculum to identify any local abnormalities such as cervical erosion, cervical polyp or varicose veins in the vaginal area. These patients were likewise continuously monitored till the final result of their pregnancy. When these patients were given specific newborn measurements such as birth weight, NICU admission and any congenital anomalies were noted.

Statistical analysis: Nonparametric continuous variables are represented by the median and interquartile ranges, while normally distributed data are shown as the mean plus or minus the standard deviation (SD). Statistical data were examined using Stata Corp. 2015.

Stata statistical software: (Version 14) College Station, Texas. Analyses were conducted on pregnant patients in the 2nd and 3rd trimester who experienced per vaginal bleeding. The Kruskal-Wallis test was used to compare outcomes between groups, as the data was not normally distributed. If significant differences were found the two-sample Wilcoxon rank-sum test (Mann-Whitney) was used to further compare the two groups. We employed the Pearson chi-square test (χ^2 test) and Fisher's exact test to make comparisons between proportions.

RESULTS

A total of 160 pregnant patients who presented with complaints of vaginal bleeding in the second and third trimester were included. The highest number of instances are in the age range of 26-30 years, with 41 cases (39.0%). This is followed by 31 cases (29.5%) in the age group of 21-25 years during the second trimester. The youngest individual was 18 years of age, while the oldest individual was 37 years of age. Likewise, during the third trimester, most patients were between the ages of 26 and 30, with the next largest age group being 21-25 Table 1.

The distribution of the patients' parity in the second trimester was as follows: primigravida 51 (48.5%) parity 1 (34.2%) parity 2 (10.4%) and parity 3 (6.6%). During the third trimester, most patients were experiencing their first pregnancy (36.3%) followed by those who had already given birth once (30.9%) twice (23.6%) and three times (9%). Table 2 A total of 160 pregnant patients who presented with complaints of vaginal bleeding in the second and third trimesters were included.

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Table 1: Age groups wise distribution in 2nd and 3rd trimester pregnant patients

Age(year)	IInd Trimester (n %)	IIIrd Trimester (n %)
16-20	13 (12.3)	11 (20)
21-25	31(29.5)	15(27.2)
26-30	41(39.0)	18(32.7)
31-35	11(10.4)	10(18.1)
36-40	09(8.5)	01(1.8)
Total	105 (100%)	55(100)

Out of the 105 patients in the second trimester bleeding group, 90 patients were able to continue their pregnancy. In the third trimester, out of the 90 patients, 44 (48.8%) had no identifiable reason for bleeding, 28 cases (31.1%) had placenta previa and 15 cases (16.6%) had abruptio placentae. In this trimester, placenta previa was the cause of bleeding in 23 (41.8%) cases, while abruptio placentae was present in 16 (29.0%) instances. haemorrhage was not visibly caused in 12 (21.8%) patients and in most cases the haemorrhage stopped. The number of patients diagnosed with placenta previa in the third trimester was lower than the original diagnosis of low-lying placenta due to placental migration Figure 1.

DISCUSSIONS

The data from the current study indicates that vaginal bleeding during the second trimester is not only linked to abortions but also to negative outcomes for both the mother and the foetus. These outcomes include a higher occurrence of antepartum haemorrhage, preterm labour, postpartum haemorrhage, congenital malformation and low birth weight. Vaginal bleeding in the third trimester is linked to higher rates of premature delivery, foetal death in the womb, low birth weight babies and birth defects[16]. A number of studies have been conducted in the past ten years in an attempt to identify the cause of bleeding during pregnancy and find methods to prevent this concerning phenomenon.

In a cohort study the objective is to determine the rate of abortion among pregnant women in the second trimester and the final outcome of their pregnancy. Among the 117 cases, 67 resulted in abortions. In most instances of vaginal bleeding, the cause was unknown and the bleeding was generally mild. In our research, among 100 individuals who experienced bleeding from the vagina during the second trimester of pregnancy, 16 ended in abortions. The reason for bleeding in 42 patients whose pregnancy lasted during the second trimester was unknown. In 26 patients the cause was placenta previa and in 14 patients, it was abruptio placentae. In this research the occurrence of premature births was 14 (19.4%) and 4 (5.5%) in the

Table 2: Distribution based on parity

	II[nd] Trimester		III[rd] Trimester	
Parity	No of cases	Percentage	No of cases	Percentage
0	51	48.5	20	36.3
1	36	34.2	17	30.9
2	11	10.4	13	23.6
3	07	6.6	05	09.0
Total	105	100	55	100

experimental and control groups, respectively ($p<0.05$). Therefore, there is a connection between bleeding throughout early pregnancy and giving birth prematurely. The preterm births took place between 34 and 36 weeks of gestation. This was slightly less than what was found in prior trials[6,21-23]. Strobino and colleagues found that the occurrence rate among the participants in the study was 21.2%, which was slightly elevated. When comparing preterm deliveries with the trimesters in which they occurred in this study, it was found that 1 (7.14%) occurred in the first trimester and 13 (92.86%) occurred in the second trimester, with a p-value of less than 0.05. This indicates that bleeding in the second trimester of pregnancy is more strongly linked to preterm delivery compared to bleeding in the first trimester. This aligns with the previous findings from comparable research[6-24].

The total count of LBW observed was 15 (20.83%) and 5 (6.94%) for the cases and controls, respectively. In both groups the statistical analysis indicated a significant link between early pregnancy bleeding and LBW, with a p-value of less than 0.05. Likewise a majority of the instances involving LBW were seen in individuals who experienced bleeding during the second trimester[6-24].The occurrence of birth defects in the group of pregnant women experiencing vaginal bleeding during the third trimester is 01. Among the 50 patients who experienced antepartum haemorrhage and gave birth, one newborn had a small congenital defect known as a cleft lip. The occurrence of a birth weight less than 2500 gm was observed in 26% of cases in the group experiencing second trimester haemorrhage, which aligns with the findings of the study conducted by Das *et al*.[25] Weiss *et al.*[26] and Jauniaux[27]. The study found that 36% of cases in the third trimester bleeding group had a birth weight of less than 2500 gm. The primary cause of low birth weight in the majority of instances was due to a reduced gestation period, with foetal development restriction playing a secondary role. It aligns with the research conducted by Ananth *et al.*[28] Batzofin *et al.*[29] Berkowitz *et al.*[30] Verma *et al*.[31]. In two cases of second trimester bleeding group, there was intrauterine death. No studies indicate a direct link between bleeding during the second trimester and intrauterine death. The current study examined the reason for foetal death in the womb, which was placental abruption occurring during the stage of foetal viability.

CONCLUSION

The current literature specifically emphasises the need of identifying risk factors in vaginal bleeding that have a significant impact on pregnancy outcomes. The clinicians are thus obligated to further address this matter. The overall outlook for patients who present in the second and third trimester with a history of vaginal bleeding is positive. Meanwhile, doctors should be mindful of the negative consequences linked to bleeding during the second and third trimesters and stay vigilant for any indications of these issues. However, there was no notable connection between bleeding during early pregnancy and complications such as delivery hypoxia, perinatal death, antepartum haemorrhage caused by placental praevia or abruptio placentae, caesarean section rate or congenital abnormality. However, additional research with a bigger population or a study conducted at many centres is necessary to advance our understanding.

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