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Original Research Article

First and second trimester bleeding and pregnancy outcome: a prospective study in a tertiary government hospital

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ABSTRACT

Background: Bleeding in first and second trimester of pregnancy is one of the common complications of pregnancy. there is evidence from various prospective and retrospective studies that first and second trimester vaginal bleeding which continue with pregnancy is associated with adverse pregnancy outcome, including preterm delivery, low birth weight babies, perinatal death and congenital anomalies. Objective of this study was to know the outcome of pregnancies who have bleeding in first and second trimester of pregnancy.
Methods: This study was prospective study done in the department of obstetrics and gynaecology, Vanivilas Hospital, Bangalore from September 2018 to August 2019.
Results: This study concludes that I trimester vaginal bleeding are at increased risk of abortion than in II trimester vaginal bleeding. Risk of placenta previa was more in II trimester vaginal bleeding than in I trimester vaginal bleeding.
Conclusions: This study concludes that I trimester vaginal bleeding are at increased risk of abortion than in II trimester vaginal bleeding. Risk of placenta previa was more in II trimester vaginal bleeding than in I trimester vaginal bleeding. Bleeding in I trimester and II trimester call for special attention in view of increased risk of preterm birth and perinatal death. Recognition of these association will be useful for detection and follow up of pregnancies being at high risk.

Keywords: Abortion, Perinatal outcome, Preterm delivery, Prelabor rupture of membranes, I and II trimester vaginal bleeding

INTRODUCTION

Vaginal bleeding is a common occurrence during pregnancy.[1,2] Some degree of vaginal bleeding during the first trimester occurs in approximately 25% of pregnancies.[3,4] Previous studies have shown a high rate of foetal loss and adverse infant outcomes like prematurity.[5,6]

Intrauterine growth retardation (IUGR), still birth and neonatal death (NND) in pregnancies complicated by vaginal bleeding.[7-9]

Vaginal bleeding affects up to 25% of all pregnancies, and in half of cases can lead to miscarriage.[10] However, in spite of vaginal bleeding occurrence during pregnancy, yet about half of them have unknown causes.[11]

Furthermore, a theory demonstrated that bleeding which followed by thrombin production can cause a proteolytic cascade which leads to foetal membranes destruction and finally premature rupture of membranes (PROM).[12] Based on another theory, bleeding can be a sign of subclinical uterine infection which could stimulate process of preterm labor.[13]

METHODS

This is a prospective study for a period of one year from September 2018 to August 2019, of patients who were admitted with vaginal bleeding during pregnancy in hospitals attached to Bangalore Medical College and Research Institute. All patients were analysed by history, examination, investigations like ultrasonography and were followed up till delivery. The results were analysed with student t test and conclusions were made.

Inclusion criteria

- Singleton pregnancies at 5-28 weeks of gestation attending clinic with history of bleeding per vagina.

Exclusion criteria

- Multiple gestations
- Ectopic pregnancy
- Hydatidiform mole.

RESULTS

According to Table 1, 50 patients had first bout of bleeding in 6-8 weeks of gestation, 45 patients had first bout of bleeding in 9-14 weeks of gestation, 8 patients had first bout of bleeding in 15-20 weeks of gestation and 15 patients had first bout of bleeding in 21-28 weeks of gestation. Maximum number of patients presented in early first trimester indicating early pregnancy failure.

Table 1: Period of gestation at first bout of bleeding.

Period of gestation	No. of cases
06-08 weeks	50
09-14 weeks	45
15-20 weeks	8
21-28 weeks	15

According to Table 2, among 118 patients 40 (33.9%) were threatened abortion and 78 (66.1%) were others (incomplete, complete, inevitable, blighted ovum). This indicates that majority of the patients could not continue pregnancy by the time they consulted us.

Table 2: Distribution of cases depending upon clinical and ultrasonographic findings.

Type of abortion	No. of cases (n = 118)	%
Threatened	40	33.9
Others (incomplete, complete, inevitable, blighted ovum)	78	66.1

According to Table 3, among 95 patients with first trimester vaginal bleeding 70 (73.68%) aborted and 25 (226.32%) continued pregnancy. Among 23 patients with second trimester vaginal bleeding 8 (34.78%) aborted and 15 (65.22%) continued pregnancy. This indicates that bleeding in first trimester has a low continuation rate.

Table 3: Patients aborted within 24 hours.

Abortion	No. of cases	Aborted	Pregnancy continued
Bleeding in I trimester	95	70 (73.68%)	25 (26.32)
Bleeding in II trimester	23	8 (34.78%)	15 (65.22)

Table 4: Abortion before 28 weeks in patient who continued pregnancy.

Abortion	No. of cases	Aborted	Pregnancy continued
Bleeding in I trimester	25	5 (20%)	20
Bleeding in II trimester	15	3 (20%)	12

According to Table 4, among 25 patients who continued pregnancy with vaginal bleeding in I trimester, 5 (20%) aborted before 28 weeks of gestation. Among 15 patients who continued pregnancy with vaginal bleeding in II trimester 3 (20%) aborted. 32 patients continued pregnancy beyond 28 weeks of gestation.

Table 5: gestational age at delivery.

Duration (weeks)	I trimester vaginal bleeding	II trimester vaginal bleeding
29-32	1	2
33-34	2	2
35-36	1	1
> 37	16	7

According to Table 5, among the patients with I trimester vaginal bleeding, 1 delivered in 29-32 weeks of gestation, 2 delivered in 33-34 weeks of gestation, 1 delivered in 35-36 weeks of gestation and 16 delivered after 37 weeks of gestation.

Table 6: Birth weight of babies.

Birth weight	I trimester vaginal bleeding	II trimester vaginal bleeding
< 1.5 kg	1	1
1.6-2 kg	1	2
2.1-2.5 kg	2	2
> 2.5 kg	16	7

Among the patients with II trimester vaginal bleeding, 2 delivered in 29-32 weeks of gestation, 2 delivered in 33-34 weeks of gestation, 1 delivered in 35-36 weeks of gestation and 7 delivered after 37 weeks of gestation. According to Table 6, among I trimester vaginal bleeding 1 baby was less than 1.5 kg birth weight, 1 was in

between 1.6-2 kg birth weight, 2 babies were in between 2.1-2.5 kg birth weight and 16 babies were more than 2.5 kg birth weight.

Among I trimester vaginal bleeding 1 baby was less than 1.5 kg birth weight, 2 was in between 1.6-2 kg birth weight, 2 babies were in between 2.1-2.5 kg birth weight and 7 babies were more than 2.5 kg birth weight.

According to Table 7, among 20 patients I trimester vaginal bleeding 16 (80%) delivered vaginally, 4 (20%) underwent caesarean section, 4 (20%) patients had preterm delivery, 1 (5%) patient had placenta previa, 1 (5%) patient had PIH and 1 (5%) patient had premature rupture of membranes.

Among 12 patients with II trimester vaginal bleeding, 8 (66.67%) delivered vaginally, 4 (33.33%) underwent caesarean section, 4 (33.33%) patients had preterm delivery and 2 (16.67%) patient had abruption.

Table 7: Maternal outcome.

	I trimester vaginal bleeding		II trimester vaginal bleeding	
Outcome	**N = 20**	**%**	**N = 12**	**%**
Vaginal delivery	16	80%	8	66.67%
LSCS	4	20%	4	33.33%
Preterm delivery	4	20%	4	33.33%
Placenta previa	1	5%	0	0
Abruption	0	0	2	16.67%
PIH	1	5%	0	0
PROM	1	5%	0	0

Table 8: Foetal outcome.

	I trimester vaginal bleeding		II trimester vaginal bleeding	
Outcome	**N = 20**	**%**	**N = 12**	**%**
IUGR	1	5%	1	8.33%
Congenital anomalies	0	0	0	0
NICU admission	3	15%	3	25%
Perinatal death	1	5%	3	25%

According to Table 8, among 20 patients with I trimester vaginal bleeding 1 (5%) patient had IUGR, 3 (15%) babies had NICU admission and 1 (5%) had perinatal death.

Among 12 patients with II trimester vaginal bleeding 1 (8.33%) patient had IUGR, 3 (25%) babies had NICU admission and 3 (25%) had perinatal death.

DISCUSSION

In present study there were 95 patients with first trimester vaginal bleeding where 70 (73.68%) aborted and 25 (226.32%) continued pregnancy. Among 23 patients with second trimester vaginal bleeding 8 (34.78%) aborted and 15 (65.22%) continued pregnancy. Whereas in Karim SA et, al study, there were 71 females with first and 24 with second trimester bleeding.[14] Foetal loss (abortion) occurred in 34% of first trimester and 25% of second trimester bleeders. Low birth weight and preterm delivery were significantly associated with second trimester haemorrhage.

In present study, among 20 patients with I trimester vaginal bleeding 16 (80%) delivered vaginally, 4 (20%) underwent caesarean section, 4 (20%) patients had preterm delivery, 1 (5%) patient had placenta previa, 1 (5%) patient had PIH and 1 (5%) patient had premature rupture of membranes. Whereas in Amirkhani Z et al study, among 60 women with I trimester bleeding, 42 ended the pregnancy successfully.[15] Totally 12% of them developed pregnancy diabetics during the pregnancy and 27.8% developed hypertension.

And in Kamble PD et al study, out of the 163 patients that continued pregnancy after first trimester vaginal bleeding 1.8% had a second trimester abortion, 15.3% went into preterm labour 6.75% has premature rupture of membranes and 1.8% had antepartum haemorrhage.[16]

CONCLUSION

Bleeding in I and II trimester is one of the complications of pregnancy. This study concludes that I trimester vaginal bleeding are at increased risk of abortion than in II trimester vaginal bleeding. Risk of placenta previa was

more in II trimester vaginal bleeding than in I trimester vaginal bleeding.

Bleeding in I trimester and II trimester call for special attention in view of increased risk of preterm birth and perinatal death. Recognition of these association will be useful for detection and follow up of pregnancies being at high risk.

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