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Research Article

MATERNAL AND PERINATAL OUTCOME IN FIRST TRIMESTER VAGINAL BLEEDING

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A B S T R A C T

Vaginal bleeding in the first trimester is associated with spontaneous abortion, preterm delivery and low birth weight. Our study aims to find outcomes of first trimester vaginal bleeding

INTRODUCTION

Vaginal bleeding in the first trimester of pregnancy is associated with spontaneous abortion /miscarriage, ectopic implantation, hydatiform mole, preterm delivery, and low birth weight. It has been reported that 50% of women presenting to an emergency room with vaginal bleeding will go on to have a normal pregnancy. Vaginal bleeding is a relatively common event in the first trimester, reported to occur in 15% to 25% of all pregnancies.[1-3] Meta-analyses indicate that vaginal bleeding is associated with a twofold increased risk of other complications during that pregnancy.[4]Vaginal bleeding can be a normal sign of implantation of the pregnancy, may herald the initiation of spontaneous abortion, or may be the sign of a pathologic condition such as ectopic pregnancy or gestational trophoblastic disease. Vaginal bleeding after confirmation with a positive pregnancy test requires further assessment in order to identify normal or abnormal development of the pregnancy or a pathologic condition that requires intervention. This study aimed to evaluate the maternal and perinatal outcome in 120 patients with the complaint of vaginal bleeding in the first trimester.

The incidence of spontaneous abortion after first-trimester bleeding is quoted to be 50% before sonographic evaluation for fetal viability and if a viable fetus is noted at ultrasound examination after first-trimester vaginal bleeding, 95% to 98% of such pregnancies will still continue beyond 20 weeks of gestation.[5]

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The total number of conceptions that are spontaneously lost before twenty weeks gestation may be as high as 70%.[6]

Aim

To study the maternal and foetal outcome in live intrauterine pregnancies with first-trimester vaginal bleeding,

Objectives

1. To study the maternal outcome with regards to pregnancy outcome like abortion (Complete/Incomplete), antepartum haemorrhage other obstetric complications like preterm labour and premature rupture of membrane.
2. To study the perinatal outcome like pregnancy loss, prematurity or extended neonatal morbidity.

MATERIALS AND METHODS

Study Design

Prospective observational study

Sample Size

Approximately 120patients with first trimester vaginal bleeding were admitted in the tertiary care hospital over the period of 18 month. Nearly 1.5 to 2 % pregnancies have first trimester bleeding with merely 4000 deliveries per year. We will be expecting around 120 patients in a period of 18 months.

Inclusion Criteria

1. Age 19-40 yrs
2. Singleton pregnancy
3. Pregnancy with confirmed fetal cardiac activity

4. Period of gestation ≤ 12 weeks, when bleeding per vaginum first presented.

Exclusion Criteria

1. Multi-fetal Gestation
2. Local lesions of cervix and vagina.
3. Uterine anomalies.
4. Medical disorders of the mother e.g. hypothyroidism, diabetes mellitus, chronic hypertension, diagnosed thrombophilias.

Withdrawal Criteria

1. Patients having irregular follow up.

METHODOLOGY WITH PROPOSED STATISTICAL ANALYSIS

Study conducted after ethics committee permission Patient fulfilling inclusion criteria and willing for registration were enrolled. Signature and consent of the patient taken at this stage. Those patients who falls short of the laid criteria, were omitted from the study and next patient was taken.

The study was conducted for 18 months in tertiary care centre. 120 cases with first trimester vaginal bleeding were selected for this study. At first visit a detailed history was taken. Each patient undergone detailed clinical examination and investigations followed by management of patient.

Patients were kept under surveillance until delivery and the consequences of pregnancy were evaluated by close observation on the process of pregnancy and prenatal care. Sonography was performed for all women in the 8-10 weeks intervals. The women had visit every two weeks till 28 weeks of pregnancy, fortnightly from 28 -35 weeks and once every week in the last month of pregnancy.

Patient was evaluated from maternal and foetal view point during every antenatal visit as per unit protocol. Antenatal care was given to patient as soon as any maternal or fetal complication, problem was identified and treatment according to need was initiated.

The age of pregnancy at the time of bleeding, the volume of bleeding (approximate estimate of vaginal bleeding with respect to standard vulval pad), the history of previous pregnancies, the co-existing diseases, the length and duration of pregnancy and the birth weight was recorded.

All pregnant women included in the study were followed up for any obstetrical complication and were managed according to routine protocol in the respective unit. Perinatal outcome was assessed till day 7.Fetal growth restriction was assessed by observing the growth charts where fetal biometry was plotted. Neonatal admission was noted with indication of admission and number of day of stay.

Statistical Analysis

All data were coded and was entered using EXCEL 2010 and analysed using Microsoft based SPSS computer package. Measures of central tendency were used to describe the continuous data

RESULTS

A total of 120 patients were studied as regards their demographic characteristics, maternal and fetal outcomes.

Table 1 shows the mean age of the patient in the study group was 24.92 yrs ± 2.464 with 21 yrs as minimum age and 32 yrs as maximum age. Also women between 20-25 yrs age group constituted the largest (64.2%) number of cases. Maximum age was 32 yrs and minimum age was 21 yrs, standard deviation for the same was 2.464.

Table 1

Age cat (in Yrs)	No of patients (N=120)	%
20 - 25 yrs	77	64.2.%
26 - 30 yrs	41	34.2%
>31	2	1.7%
Total	120	100%

Table 2 shows that most patients were multigravida (51.7%) with 48.3% primigravida. Also, out of 120 patients, 47 had previous live birth and 34 of them have had history of one or more abortions.

Table 2

		No of patients (N=120)	%
Gravida	1	58	48.3%
	2	38	31.7%
	3	14	11.7%
	4	6	5.0%
	5	3	2.5%
	6	1	0.8%
Total		120	100%

Table 3 shows mean period of gestation at the time of presentation with maximum being 87 days. The table also shows the distribution of POG at the time of presentationas per gravidity.

Table 3

Gravida	Mean POG	N	Std. Deviation	Minimum	Maximum
1	56.72	58	10.856	37	84
2	56.95	38	11.349	42	87
3	57.21	14	14.246	42	83
4	58.33	6	15.293	45	82
5	62.67	3	16.503	46	79
6	49.00	1	.	49	49
Total	57.02	120	11.600	37	87

Table 4 shows POG at the time of delivery which showed mean duration of 234.45 ± 52.91 days in a primigravida and 240.27 ± 42.269 in multigravidas. The minimum POG at delivery was 198 days and maximum being 284 days.

Table 4 shows POG at the time of delivery

Gravida	Mean POG	N	Std. Deviation	Minimum	Maximum
1	234.4483	52	58.90854	230	281
2	261.1053	34	36.05311	219	284
3	262.7857	14	22.10179	198	284
4	238.3333	6	70.70125	255	278
5	277.3333	3	7.37111	269	283
6	264.0000	1	.	264	264
Total	247.7083	110	50.29115	239	279

Table 5: shows maternal and perinatal outcomes in a pregnancy complicated by first trimester vaginal bleeding. Out of 120 patients, 10 patients had spontaneous abortion, 62 proceeded to term and delivered without any complications while rest of them had some maternal or fetal complications.

Table 5 Maternal and Fetal Complications

Complications	No of patients	%
FETAL		
IUGR	10	8.33%
Preterm Birth	30	25%
Fetal Distress (heart rate decelerations)	8	6.67%
Low Birth Weight	45	37.5%
Meconium stained amniotic fluid	3	2.5%
Apgar score <7 at 5 minute	13	10.83%
NICU Admission	24	20%
MATERNAL		
Non - progress of labour	7	5.83%
Retained placenta	4	3.33%
Placenta praevia	3	2.5%
PROM/PPROM	13	10.83%
Miscarriage	10	8.33%
Oligohydramnios	2	1.67%
Gestational hypertension	13	10.83%
Gestational DM	3	2.5%
Pre-eclampsia	4	3.33%
Abruption placentae	2	1.67%

Fig. shows maternal complications-

Table 6 shows mode of delivery and it was found out that most of them delivered normally (36.4%) with 33.6% of them undergoing caesarean section for fetal or maternal indications.

Table 6

		Count (110)	Column N %
Mode of Delivery	LSCS	37	33.6%
	PTVD	27	24.5%
	Vaccum delivery	4	3.6%
	FTND	40	36.4%
	Forceps delivery	2	1.8%
	Total	110	100.0%

Table 7 shows the number of patients who underwent caesarean section in the assigned group. Total 37 patients underwent LSCS out of which 11 were elective and 26 were emergency due to foetal as well as maternal indications

Table 7

		Count	Column N %
LSCS	Elective LSCS	11	29.73%
	Emergency LSCS	26	70.27%
	Total	37	100.0%

Table 8 shows the birth weight of the new born baby with maximum babies falling in the category of 2.6 - 3.0 kgs.

Table 8

Birth weight (in Kgs)	No of babies (N=110)	%
< 1.5	5	4.5%
1.6 - 2.0	12	10.91%
2.1 - 2.5	28	21.0%
2.6 - 3.0	36	37.0%
3.1 - 3.5	25	23.5%
3.6 - 4.0	4	5.9%
Total	110	100%

NBB	Mean	N	Std. Deviation
Female	2.379825	57	.8641284
Male	2.531032	63	.8985366
Total	2.459208	120	.8819250

Table 9 shows Out of the total babies born, 24 were kept in NICU for more than 48 hrs due to either LBW or prematurity and 13 babies had apgar score <7 at 5 minitues.

Table 9

		Count	Column N %
Perinatal Morbidity	NICU Admission	24	20.00%
	APGAR <7	13	10.83%
	No Complication	86	78.18%

DISCUSSION

Our data show that First trimester vaginal bleeding is associated with adverse pregnancy outcomes. Results from this study confirm findings from other authors, that first trimester vaginal bleeding is associated with an increased risk of certain pregnancy-related complications, namely placental abruption, preterm labour, delivery of low birth weight infants and PPROM [17]. Generally, high incidence of abortion and complications in first trimester vaginal bleeding indicate the necessity of proper programming in care and also educating highrisk women. A potential limitation of this study is that the presence &severity of vaginal bleeding was based on a subjective description by the patient. However, theultimate assessment of vaginal bleeding is based onpatient report. Therefore, we believe the results of this study can be applied to clinical practice. Results of this study support other evidence that, in some patients, first-trimester vaginal bleeding may indicate underlying placental dysfunction, which may be manifest in later pregnancy by avariety of adverse outcomes that have also been related to placental dysfunction.

Various parameters which were taken into consideration in our study includes maternal complications like gestational hypertension and pre-eclampsia-eclampsia syndrome.

Perinatal complications includes PPROM / PROM, ante-partum hemorrhage (placenta praevia / abruption placentae), Intrauterine growth restriction, meconium staining of liquor, oligohydramnios & fetal distress.

PPROM

In our study incidence of PROM / PPROM was 10.83% while a study done by Davari-Tanha in 2008 had 16% of patients as PPROM [19]. Our findings corroborate other studies that suggested an association between first trimester vaginal bleeding and PPROM[5,9,27]. Although the cause is unclear, it is hypothesized that disruption of thechorionic-amniotic plane by adjacent haemorrhagemay make the membranes more susceptible to rupture[27]. Alternatively, the prolonged presence of blood may act as a nidus for intrauterine infection. Persistent or recurrent placental haemorrhage could also stimulate subclinical uterine contractions that result in cervical change and eventual ruptured membranes.

Miscarriage

In our study incidence of miscarriage was 8.33%. Approximately 35 - 66% of women hospitalized with first trimester vaginal bleeding proceed to miscarriage[8,9,10], while women with first trimester vaginal bleeding and ultrasound-detected fetal cardiac activity have a lower risk of miscarriage, ranging from 5 to 23%[11, 12]. These reports of the risk of miscarriage are based on clinical populations whose symptoms and outcomes are collected retrospectively in obstetric clinics or emergency departments[13, 14].

Preterm Birth

As far as incidence of preterm birth (delivery before 37completedweeks) is concerned, in our study it revealed an

incidence of 36% while in a study done by Arafa *et al* showed an incidence of 26.19% [18]. The association between vaginal bleeding and preterm delivery has also been noted by others[22]. Both Batzofin *et al*. and Williams *et al* reported that patients with bleeding had double the risk of preterm delivery compared with patients without bleeding[7,27]. The study of Williams *et al*. shows similar results[16]. Batzofin *et al.* included patients with bleeding up to 20 weeks[27]. Strobino and Pantel-Silverman failed to show an association between preterm delivery before 36weeks of gestation with light vaginal bleeding in the first or second trimester of pregnancy [21]. 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[26].Our findings corroborate other studies that suggested an association between first trimester vaginal bleeding and Preterm delivery[7,18,27]. Despite significant advances in perinatal medicine, the incidence of preterm delivery has remained unchanged. The prediction of preterm delivery from currently available methods is unreliable, therefore, associated risk factors remain an important measureof identifying at-risk pregnancies[20,21].

IUGR

There were varying reports as regards Intrauterine Growth Restriction is concerned among various groups. A study done by Arafa *et al* reported an incidence of 48.5%[18] while study done by Davari-Tanha in 2008 revealed an incidence of 2%[19]. In our study, the incidence of IUGR was found to be 8.33%.

Gestational Hypertension

In 1993, Verma *et al*. reported that pregnancy induced hypertension was significantly more common in subjects with first trimester vaginal bleeding and aviable pregnancy compared with subjects without vaginal bleeding (6% vs. 4.7%, respectively; $P < 0.05$) [16]. However, their study was limited by a total of only 113 subjects. Another study did not find an association between first-trimester vaginal bleeding and gestational hypertension but did find that patients with light bleeding were statistically more likely to have preeclampsia [26]. This association carried a low OR of < 2.0. However in our study, the incidence of gestational hypertension and pre-eclampsia were 10.83% and 3.33% respectively.

Placental Abruption

Many studies reported that patients with first-trimester vaginal bleeding are also at increased risk for placental abruption and IUGR [23]. Placental haemorrhage may recur later in pregnancy, which results in placental abruption. In our study, the risk of abruption was 1.67%. other studies like done by Davari-Tanha in 2008 and Mulik *et al* showed similar results [22].

Placenta Praevia

Our results revealed incidence of placenta previa as 2.5% in the study population. The study done by Davari-Tanha revealed an incidence of 0.66% at the same time Konje *et al* in 1992 reported an incidence of 4.1% [19,,24]. The location of the chorion frond sum within the uterine cavity in early pregnancy may explain this association, with an inferior positionmore likely to cause first-trimester bleeding, as well as a higher risk of placenta previa later on in pregnancy. Das *et al* reported an increased risk for a low-lying placenta among women with first trimester vaginal bleeding but found no difference in placental location compared with control subjects by 36 weeks of gestation[17]. Weiss *et al* found a similar association that was not statistically significant[15]. Mulik *et al* found a significantly higher risk of placenta previa at 37 weeks in women who experienced a first-trimester vaginal bleed[5].

Manual Removal of Placenta

The incidence of manual removal of placenta wasfound to be higher among women with first trimester vaginal bleeding. Hertz and Heisterberg reported that retention of placenta was associated with threatened miscarriage, and the rate of manual removal was 14%[26].They postulated that adhesive scarring between the uterine wall and the placenta at the site of bleeding might be responsible for the increased incidence of retention of placenta in women with threatened miscarriage. In our study, the rate of manual removal was found to be 3.33% which was not significant.

Low Birth Weight Babies

The overall risk of having a low-birth weight baby was higher in women who bled in the first trimester than in women who did not. Therisk varied from 1.1 to 3.7 across the different studies [28]. In our study out of 110 new born babies 45 were low birth weight babies (<2.5Kg).

Perinatal Morbidity

The women with history of early pregnancy bleeding were more likely to deliver babies with Apgar score <7 at 5 minutes after birth and babies that were admitted to the neonatal unit[28]. In our study 24 new born babies were admitted in NICU mainly due to prematurity and respiratory distress and 13 new born babies were having Apgar score <7 at 5 minutes

Caesarean Section

Data linking cesarean delivery to first trimester vaginal bleeding are very limited. Our study did show a slightly higher incidence of cesarean delivery among the study group - 33.6%, in contrast to the findings of Weiss *et al*, which showed no evidence of an association with emergency caesareans [15]. Caesarean delivery rate in the above mentioned study was 25.6%.

Instrumental Delivery

The risk of instrumental delivery was not significantly altered, as in our study it was 5.4% (including both vacuum and forceps delivery). A study done by Mulik *et al* revealed incidence to be 21.1% which could be due to large sample size taken for the study and use of instrument for the delivery of a distressed fetus [5].

Summary and Conclusion

Summary: Our study was a observational prospective study which included a cohort of pregnantmothers with a history of first trimester vaginal bleeding, who were registered, followed up at antenatal clinics and delivered. The outcomes were noted in the form of maternal and perinatal complications which included preterm labour, antepartum haemorrhage, PROM/PPROM, gestational hypertension, IUGR, LBW babies, Caesarean section, instrumental delivery, and perinatal morbidity in the form of Apgar score <7 at 5 minutes and NICU admission.

This study demonstrated a clear association between preterm delivery, pregnancy induced hypertension, PPROM & low birth weight in mothers with first trimester vaginal bleeding.

Results of the current study along with the results of previous studies support the school of thinking that the first-trimester vaginal bleeding may indicate underlying placental dysfunction. The placental dysfunction may manifest in later pregnancy by a variety of adverse outcomes including preterm delivery, pregnancy induced hypertension, placental abruption and fetal growth restriction. Since preterm delivery was associated with first trimester vaginal bleeding, identifying women who are at "high risk" for preterm labour is important. Unfortunately the screening strategies are imprecise. These include screening for bacterial vaginosis and bio-physical markers, such as cervical length and fetal fibronectin. Many of these strategies depend heavily on a past history of preterm birth[25] or concentrate on correct diagnosis of women who already present with symptoms of pretermlabour[25]and therefore do not identify all women at risk. Development of interventions, such as progesterone and antioxidant supplementation, clearly requires further investigation; however, identification of women at risk would allow such interventions to be implemented from a much earlier gestation. Increased antenatal surveillance, possibly with cervical length measurements or the use of fetal fibronect in tests, might identify women within this group who are at increased risk. This would result in a higher index of suspicion in women presenting with symptoms later in pregnancy, enabling prompt identification of these complications should they occur. Knowledge of this increased risk may also facilitate decision making regarding management, for example, timely administration of corticosteroids or decisions regarding mode, place, and timing of delivery, which will inevitably improve neonatal outcome.

One advantage of our study was that it is a prospective study in which mothers present with bleeding are assessed for the amount of bleeding and followed up till delivery, hence recall bias is low.

CONCLUSION

In conclusion, the current study reports that patients with first-trimester vaginal bleeding are at increased risk for spontaneous loss of pregnancy and adverse pregnancy outcome. For patients who reportedvaginal bleeding during the first trimester, we observed increased risks of LBW, preterm delivery, PPROM, placental abruption, low lying placenta and increased perinatal morbidity. These associations appear to be both statistically and clinically significant. Because the overall prognosis is favourable, these results can be used to help reassure patients with first trimester vaginal bleeding. At the same time, physicians should be aware of the adverse outcomes that are associated with first-trimester vaginal bleeding and remain alert for signs of these complications.

References

1. Poulose T, Richardson R, Ewings P, Fox R. Probability of early pregnancy loss in women with vaginal bleeding and a singleton live fetus at ultrasound scan. *J Obstet Gynecol*. 2006;26:782-4.
2. Schauberger CW, Mathiason MA, Rooney BL. Ultrasound assessment of first-trimester bleeding. Obstet Gynecol. 2005;105:333-8.
3. Luise C, Jermy K, May C, Costello G, Collins WP, Bourne TH. Outcome of expectant management of spontaneous first trimester miscarriage: Observational study. BMJ. 2002;324:873-5.
4. Ananth C, Savitz D. Vaginal bleeding and adverse reproductive outcomes: a meta-analysis. Paediatr Perinat Epidemiol. 1994;8:62-78.
5. Chung TK, Sahota DS, Lau TK, Mongelli JM, Spencer JA, Haines CJ. Threatened abortion: prediction of viability based on signs and symptoms. Aust N Z J Obstet Gynaecol. 1999 Nov;39(4):443-447.
6. Uerpairojkit B, Charoenvidhya D, Tannirandorn Y, Wacharaprechanont T, Manotaya S, Samritpradit P, Somprasit C. Sonographic findings in clinically diagnosed threatened abortion. *J Med Assoc Thai*. 2001 May; 84(5):661-665.
7. Williams MA, Mittendorf R, Lieberman E, Monson RR. Adverse infant outcomes associated with first-trimester vaginal bleeding. Obstet Gynecol 1991;78:14-8.
8. Farrell T, Owen P. The significance of extrachorionic membrane separation in threatened miscarriage. *Br J Obstet Gynaecol*. 1996 Sep;103(9):926-928.
9. Everett C. Incidence and outcome of bleeding before the 20th week of pregnancy: prospective study from general practice. BMJ 1997;315:32-4.
10. Coppola PT, Coppola M. Vaginal bleeding in the first 20 weeks of pregnancy. Emerg Med Clin North Am 2003;21:667-77.
11. Basama FM, Crosfill F. The outcome of pregnancies in 182 women with threatened miscarriage. Arch Gynecol Obstet 2004;270:86-90.
12. Laufer MR, Ecker JL, Hill JA. Pregnancy outcome following ultrasound detected fetal cardiac activity in women with a history of multiple spontaneous abortions. *J Soc Gynecol Investig* 1994;1:138-42.
13. Deaton JL, Honore GM, Huffman CS, Bauguess P. Early transvaginal ultrasound following an accurately dated pregnancy: the importance of finding a yolk sac or fetal heart motion. Hum Reprod 1997; 12:2820-3.
14. Weiss JL, Malone FD, Vidaver J, Ball RH, Nyberg DA, Comstock CH, Hankins GD, Berkowitz RL, Gross SJ, Dugoff L, Timor-Tritsch IE, D'Alton ME. Threatened abortion: A risk factor for poor pregnancy outcome, a population based screening study. *Am J Obstet Gynecol* 2004;190:745-50
15. Verma SK, Premi HK, Gupta TV, Thakur S, Gupta KB, Randhawa I. Perinatal outcome of pregnancies complicated by threatened abortion. *J Indian Med Assoc*. 1994 Nov;92(11):364-365.
16. Das AG, Gopalan S, Dhaliwal LK. Fetal growth and perinatal outcome of pregnancies continuing after threatened abortion. Aust N Z J Obstet Gynaecol. 1996 May;36(2):135-139.
17. Arafa M, Abdel Fataah M, Abou Seid H, ElKhouly A. Outcomes of pregnancies complicated by early vaginal bleeding. *East Med Health J* 2000;6:457-64
18. Davari-Tanha F, Shariat M, Kaveh M, Ebrahimi M, Jalalvand S. Threatened. a abortion: a risk factor for poor pregnancy outcome. Acta Med Iran 2008;46:314-20.
19. Norwitz ER, Schust DJ, Fisher SJ. Implantation and the survival of early pregnancy. *N Engl J Med*. 2001Nov 8;345(19):1400-1408.

20. Strobino B, Pantel-Silverman J. Gestational vaginal bleeding and pregnancy outcome. *Am J Epidemiol*. 1989 Apr; 129(4): 806-815.
21. Mäkikallio K, Tekay A, Jouppila P. Uteroplacental hemodynamics during early human pregnancy: a longitudinal study. Gynecol Obstet Invest. 2004;58(1):49-54.
22. Szekeres-Bartho J, Polgar B, Kelemen K, Par G,Szereday L. Progesterone-mediated immunomodulation and anti-abortive effects: the role of the progesterone induced blocking factor. Poster presentation. 10th World a. Congress on the Menopause,10-14 June 2002, Berlin.
23. Konje JC, Ewings PD, Adewunmi OA, Adelusi B, Ladipo OA. The outcome of pregnancies complicated by threatened abortion. *J Obstet Gynaecol* 1992;12:150-5.
24. Iams JD. Prediction and early detection of preterm labor.Obstet Gynecol 2003; 101: 402-12.
25. Hertz JB, Heisterberg L. The outcome of pregnancy after threatened abortion. Acta Obstet Gynecol Scand. 1985;64(2):151-156.
26. Batzofin JH, Fielding WL, Friedman EA. Effect of vaginal bleeding in early pregnancy on outcome. Obstet Gynecol. 1984 Apr;63(4):515-518.
27. Saraswat, L., Bhattacharya, S., Maheshwari, A., *et al*. (2010) Maternal and perinatal outcome in women with threatened miscarriage in the first trimester: A systematic review. BJOG, 117, 245-257.

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