

## Gynecology &amp; Reproductive Health

# First Trimester Bleeding in Pregnancy within the Gynecology and Obstetrics Department of Sourô Sanou Teaching Hospital in Bobo-Dioulasso: 422 Cases Studied and Literature Review

Bambara Moussa<sup>1\*</sup>, Ouedraogo Issa<sup>2</sup>, Komboïgo Evelyne<sup>2</sup> and Ngonon Francis<sup>1</sup>

<sup>1</sup>Department of Obstetrics and Gynecology, University Joseph Ki-Zerbo, CUHSS, Bobo-Dioulasso, Burkina Faso.

<sup>2</sup>Service of Obstetrics and Gynecology, University of Ouayigouya, CHR-OHG, Ouayigouya, Burkina Faso

**\*Correspondence:**

Bambara Moussa, Department of Obstetrics and Gynecology, University Joseph Ki-Zerbo, CUHSS, Bobo-Dioulasso, Burkina Faso.

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**ABSTRACT**

**Objectives:** Study the epidemiological, clinical, therapeutic and prognostic aspects of the first trimester bleeding of pregnancy.

**Methodology:** This was a descriptive cross-sectional study conducted within the Gynecology and Obstetrics Department of Sourô Sanou Teaching Hospital from January 1st to December 31st, 2019. The study included any patients admitted and treated for endo uterine bleeding in pregnancy with a term inferior or equal to 15 weeks of amenorrhea. The parameters studied were the following: sociodemographic characteristics (age, parity, level of education, occupation, marital status, origin), clinical and paraclinical aspects, diagnosis retained, treatment, and maternal prognosis. Information was collected from a survey form, from clinical records, operating protocols and anatomopathological reports. Data entry and analysis was made through Word and Epi-info 7.2.3 software.

**Results:** During the period of study, 422 cases of first trimester bleeding were reported, corresponding to a frequency of 10.33%. The average age was  $29 \pm 6.4$  years [15-49 years] and the average parity was  $1.95 \pm 1.7$  [0-11]. Married women accounted for 75% of the population. The average gestational age was 9.14 weeks of amenorrhea [5-14 weeks of amenorrhea]. Clinical signs were dominated by vulvar bleeding in 100% of cases and pelvic pains in 86% of cases. All our patients had gone through pelvic ultrasound. As for the diagnoses retained, these included: a threatened abortion in 11.84% of cases, an incomplete abortion (46.77% of cases), an ectopic pregnancy (EP) (26.8% of cases), a terminated pregnancy (17.9% the cases) and a molar pregnancy (8.3% of cases). Abortions were managed through MVA (68.27%) and medical abortion (4.8%). All the cases of EP were treated surgically and no maternal deaths were recorded in our study.

**Conclusion:** First trimester bleeding in pregnancy is common within the department. The main etiologies are threatened abortion, incomplete abortion, molar pregnancy and ectopic pregnancy.

**Keywords**

Bleeding, First trimester pregnancy, Ectopic pregnancy, Abortion, Molar pregnancy.

**Introduction**

First trimester bleeding in pregnancy is a frequent reason for consultation in emergencies. They may be a sign to reveal serious complication of pregnancy and are the first cause of bleeding in a woman during the genital period [1-3]. Based on literature,

abortion, ectopic pregnancy and molar pregnancy [4-7] are the dominant etiologies of the first trimester bleeding. We undertook a cross-sectional study on all the first trimester bleeding in pregnancy in order to study the epidemiological, clinical, therapeutic and prognostic aspects within the Obstetrics and Gynecology Department of Sanou Sourô Teaching Hospital in Bobo-Dioulasso to improve their management.

## Patients and Method

This was a cross-sectional descriptive study with prospective collection conducted from January 1st to December 31, 2019. Any patients admitted for endo uterine bleeding in pregnancy with a term inferior or equal to 15 weeks of amenorrhea were included in the study. The parameters studied included sociodemographic characteristics (age, parity, level of education, occupation, marital status, origin), clinical and paraclinical aspects, diagnosis retained, management and maternal prognosis. Information was collected from a survey form, from clinical records, operating protocols and anatomopathological reports. Data entry and analysis were done through Word Software and Epi-info 7.2.3.

## Results

### Epidemiology

#### Frequency

From January 1st to December 31, 2019, we recorded 4, 086 deliveries among which 1,325 were made by cesarean section. In the meantime, we recorded 422 cases of first trimester bleeding which corresponds to a frequency of 10.33% of deliveries.

### Sociodemographic characteristics

The table 1 below shows the distribution of patients according to socio-demographic characteristics.

**Table 1:** Distribution of Patients According to Sociodemographic Characteristics.

PARAMETERS	NUMBER	%	
AGE (YEARS)	15-19	18	4.26
	20-29	228	54
	30-39	153	36.2
	40-49	20	5.4
PARITY	NULLIPAROUS	89	23.9
	PRIMIPAROUS	74	19.9
	PAUCIPAROUS	195	46.2
	MULTIPAROUS	58	13.7
OCCUPATION	HOUSEWIFE	217	51.42
	TRADER	126	29.85
	CIVIL SERVANT	37	8.76
	PUPIL/STUDENT	40	9.47
ORIGIN*	URBAN AREA	330	78.1
	RURAL AREA	92	21.8
MARITAL STATUS	MARRIED	329	77.9
	UNMARRIED	55	13
	DIVORCED	4	0.94
	IN UNION	34	8

## Clinical and Paraclinical Aspects

### Admission reasons

The table 2 below shows the distribution of patients according to admission reasons.

**Table 2:** Distribution of patients according to admission reasons.

Reason for admission	Number	%
Molar pregnancy	31	7.34
Terminated pregnancy	31	7.34
Threatened abortion	50	11.8
Unruptured EP	2	0.47
Clear egg	36	8.53
Ruptured EP	98	23.22
Incomplete abortion	174	41.23
Total	422	100

### Gestational Age

The average gestational age upon admission was estimated at 9,14 weeks of amenorrhea with extremes of 5 and 14 weeks of amenorrhea. The table 3 below indicates the distribution of patients according to their gestational age.

**Table 3:** Distribution of patients according to their gestational age range.

Age range (Weeks of amenorrhea <sup>2</sup> )	Number	%
5 to 7	90	21.3
8 to 12	296	89
13 to 14	36	8.5
Total	422	100

### Clinical Signs Upon Admission

- The functional signs were isolated or associated: vulvar bleeding in 100% of cases, pelvic or abdominal pain in 80.64% of cases and dizziness in 75% of cases.
- The general signs upon admission were: clinical anemia in 32.25% of cases, fever in 12.9% of cases, state of shock in 28.22% of cases, a polypnea in 13.7% of cases and cold extremities in 28.22% of cases.
- The physical signs were variously associated. The table 4 below shows the distribution of patients according to physical signs.

**Table 4:** Distribution of patients according to physical signs.

Physical signs	Number	%
Abdominal defense	90	24.2
Cry of the umbilicus	98	26.3
Cervical lesions	9	2.4
Open cervix	100	26.8
Latero-uterine mass	10	2.7
Flank dullness	98	26.3
Pain upon Douglas touch	98	26.3

### Paraclinical Signs

#### Biology

- Blood count was performed in 42.47% of female patients. We observed severe anemia in 14.23% of cases (3 to 6.9g/dl), moderate anemia in 11.02% of cases (7 to 9g/dl) and mild anemia in 11.82% of cases (9 to 10g/dl). Furthermore,

hyperleukocytosis was observed in 2.15% of cases.

- Quantitative  $\beta$ hCG plasma assay was carried for molar pregnancies.

### Pelvic Ultrasound

An ultrasound examination was performed in 100% of cases. Table 5 below gives the distribution of the ultrasound results.

**Table 5:** Distribution of Female Patients According to Ultrasound Results.

Ultrasound result	Number	%
Clear egg	36	8,5
Terminated pregnancy	31	7,3
Molar pregnancy	31	7,3
Ruptured EP	98	23,2
Unruptured EP	2	0,47
Threatened abortion	50	11,8
Incomplete abortion	174	41,2
Total	422	100

### Diagnosis Selected

#### Threatened Abortion

50 cases of threatened abortion (11.8%) were reported based on bleeding and signs of slight detachment on ultrasound with a live egg.

#### Abortion

We found 241 cases of abortion (64.78%). This diagnosis was retained in front of clinical and ultrasound signs.

#### Molar Pregnancy

On speculum examination, we have perceived vesicles in 25 of cases and the ultrasound showed honeycomb images in 31 cases. The  $\beta$ hCG plasma assay was performed before uterine evacuation and during post-molar monitoring. Ultrasound examination as well as anatomopathological examination was performed in all cases.

#### Ectopic Pregnancy

##### Unruptured ectopic pregnancy

This diagnosis was retained in 2 cases in front of minimal black blood metrorrhagia, pelvic pain in the iliac fossa, a painful latero-uterine mass on vaginal touch, an empty uterus on ultrasound and a positive pregnancy test.

##### Ruptured ectopic pregnancy

This diagnosis was retained in 98 of cases in front of metrorrhagia, signs of peritoneal irritation, a state of shock, a positive pregnancy test and culdosyntesis bringing back incoagulable lysed blood.

### Management

#### Threatened Abortion

We noted 50 cases with favorable outcomes after treatment of malaria (30 cases) associated to rest. 20 cases had infectious signs treated with antibiotics. These patients, after leaving the hospital were lost and were not followed-up.

### Abortion

#### Medical Abortion

- Incomplete abortions: 4 cases

The dosage of Misoprostol was 400 micrograms sublingual to be kept for 30 minutes and swallow the rest.

- Clear eggs: 8 cases

The dosage was 800 micrograms of Misoprostol (4 tablets of 200 mcg) in sublingual to be kept during 30 mn, and the rest to be swallowed. Up to 3 doses maximum can be given.

- Terminated pregnancy: 6 cases. The idem protocol as above for clear eggs.

#### Manual Intra-Uterine Aspiration (MVA)

Out of a total of 254 patients, 51 (12.08%) have received hemodynamic stabilization before aspiration (lactated Ringer's in 31 cases and packed red blood cells in 20 cases). Counseling was done before, during and after the aspiration.

Para-cervical anesthesia was performed in order to reduce or minimize pains.

MVA was performed in 254 cases among which there were 170 incomplete abortions, 31 molar pregnancies, 28 clear eggs and 25 terminated pregnancies. All aspirated products were collected for anatomopathological study. No complications were observed during MVA. Painkillers were systematically administered after MVA. Antibiotic administration was done in 8 cases of incomplete abortion. The follow-up appointment was scheduled on the 7<sup>th</sup> day.

#### Post Abortum Contraception

All our clients received counseling and a family planning method. The table 6 shows the distribution of clients according to the method chosen.

**Table 6:** Distribution of Patients According to the Method Chosen.

Method	Number	%
pills	90	35,57
IUD	53	20,94
Implants	37	14,56
Injectables	12	4,72
Male condom	5	1,96
Refusal or differed choice	57	20,95

#### Ectopic Pregnancy

- **Resuscitation measures:** 50 patients received Ringer Lactate and transfusion of red blood cells of the iso rhesus group.
- **Surgical treatment:** in all cases of ectopic pregnancy, we performed a laparotomy followed by total salpingectomy. The aspirated hemoperitoneum varied between 500 and 1800 cc.

#### Maternal Prognosis

- Favorable pregnancy course in 50 cases with cessation of functional signs. Fetal vitality was checked by ultrasound before pulling them out.
- For abortion cases, clear egg and terminated pregnancy, the maternal suite was favorable in all cases.
- For ectopic pregnancy cases, the follow-up was also favorable

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in all cases.

- For molar pregnancy cases, after aspiration, post-molar monitoring of  $\beta$ hCG showed a negativation after 12 weeks.

### Length of Stay

- The average length of hospital stay for EP was 3.3 days, with extremes of 2 and 8 days
- As for molar abortions, the average length of stay was 7 days. After them leaving the hospital, these female patients were followed up as an outpatient basis for post-molar monitoring.
- As for other abortions, the treatment was ambulatory except for complicated cases (anemia, infection)
- For molar abortions, the average length of stay was 7 days. After discharge, they were followed up on an outpatient basis for post-mortem surveillance.
- For the other abortions, the treatment was ambulatory except for complicated cases (anemia, infection)

## Discussion

### Epidemiology

The frequency of first trimester bleeding in our study was 10.33%. Harville [1] in North Carolina reported a rate close to 9%. Sun [8] in China reported a higher frequency of 24.2%. In the literature, the first trimester bleeding in pregnancy has an estimated frequency between 16 and 25% of all pregnancies [9-11].

The average age in our study was  $29 \pm 6.47$  years. Salim [2] in India and Edward [12] in the USA reported an average age of 25.35 years and  $28.3 \pm 5.4$  years respectively. The main etiologies of 1st trimester bleeding in our study are threatened abortions, abortions, ectopic pregnancy and molar pregnancy. Several authors have reported the same findings in the literature [3,4,6,7]. Ultrasound is a examination of paramount importance for the diagnosis and management of the first trimester bleeding in pregnancy [7,13-15].

### Consequences of the First Trimester Bleeding in Pregnancy

In some studies, it has been shown that the probability of premature rupture of membranes in women with 1st trimester bleeding is 2 to 4 times higher than in other pregnant women [16] Weiss and colleagues [17] have shown that abortion, preterm delivery and placenta previa are common complications of 1st trimester bleeding in pregnancy. In different studies such as those of Saraswat [16] and Siddiqui [18], it has been shown that women with first trimester bleeding frequently develop second and third trimester hemorrhage with a likelihood of placenta previa. Yang' study [19] in the USA has established a link between bleeding during pregnancy and the risk of preterm delivery.

According to the study conducted by Lykke [20], first trimester bleeding in pregnancy bears a risk of premature birth between the 32nd and 36th weeks of amenorrhea in 3.6 to 6.1% of cases, and a risk of retroplacental hematoma in 1 to 1.4% of cases. For the second pregnancy, there is a bleeding risk in 2.2 to 8.2% of cases, prematurity in 2.2 to 8.2% of cases, and retroplacental hematoma in 0.9 to 1% of cases.

### First Trimester Bleeding Treatment

In our series, about fifty women experienced a favorable course of their bleeding with continuation of the pregnancy. This group of women was not followed up after they left the hospital. Misoprostol was used for incomplete abortions, terminated pregnancies and medical abortion. Souzi B et al. [21] demonstrated a better efficiency of using Misoprostol vaginally. For pregnancies with a term above 8 weeks of amenorrhea with a more or less significant bleeding, and for molar pregnancies, manual intrauterine aspiration with or without cervical dilatation was applied after resuscitation measures. Snell B. J [22] adopted the same approach in his study. In cases of molar pregnancy, post-molar  $\beta$ HCG monitoring combined with contraceptive method were applied in order to avoid choriocarcinoma.

For ectopic pregnancies, mutilating treatment was the most frequent in our series because of the late diagnosis. This situation is frequent in developing countries [23-25]. In industrialized countries, early endovaginal ultrasound and plasma  $\beta$ hCG assay most often allow a conservative treatment with methotrexate [22,26-28].

### Maternal Prognosis

The maternal prognosis was good in all cases, which was the same for most authors [21,22,26,27].

### Conclusion

First trimester bleeding in pregnancy is quite frequent. In case of a favorable evolution, numerous complications are possible for the rest of the pregnancy and are often ignored by the practitioners. The essential role of endovaginal ultrasound must be emphasized for diagnosis and management. The main etiologies are dominated by threatened abortions, incomplete abortion, abortion, molar pregnancy and ectopic pregnancy, which should not be systematically sought.

### References

1. Harville EW, Wilcox AJ, Baird DD, et al. Vaginal bleeding in very early pregnancy. *Human Reproduction*. 2018; 9: 1944-1947.
2. Salim S, Ravishankar D, Vinod KVG. A study on first trimester vaginal bleeding and outcome of pregnancy in Thiruvananthapuram, Kerala. *J Clinic Obstet Gynaecol*. 2020; 6: 143-146.
3. Sonal, Sinha A, Sinha G. Pregnancy outcome in patients with first trimester vaginal bleeding: an observational study. *IJ Health Clinic R*. 2020; 7: 208-211.
4. Deutchman M, Tubay AT. First Trimester Bleeding. *AMFP*. 2009; 11: 985-992.
5. Aronu ME, Okafor CO, Mbachu II, et al. A Review of the Correlation between Clinical Diagnosis and Ultrasound Diagnosis in First Trimester Vaginal Bleeding. *Ann Med Health Sci Res*. 2018; 8: 120-124.
6. Benoist G, Chéret-Benoist A, Beucher G, et al. First trimester bleeding during pregnancy: diagnosis guidelines and practical

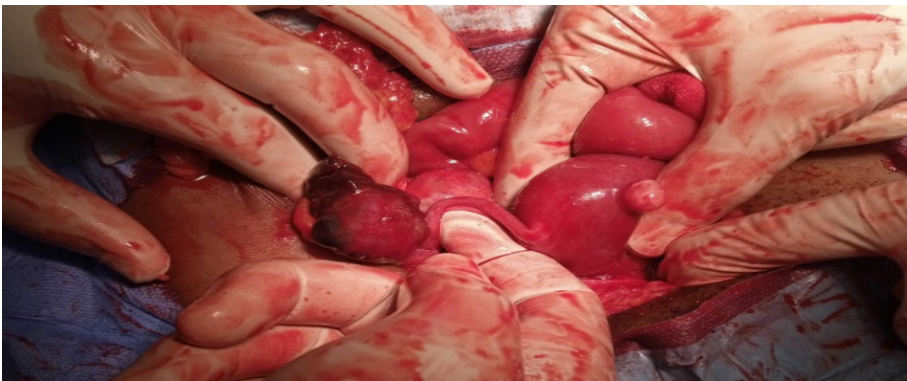


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- management. *J Gynecol Obstet et Biol Reprod*. 2010; 39S: 33-39.
7. Jha R, Shah A, Jha SK. Ultrasonography findings in first trimester vaginal bleeding. *N J Obstet Gynecol*. 2020; 31: 106-108.
  8. Sun L, Tao F, Hao J, et al. First trimester vaginal bleeding and adverse pregnancy outcomes among Chinese women: from a large cohort study in China. *JMFNMed*. 2012; 25: 1297-1301.
  9. Goldman JA, Ashkenazi J, Ben-David M, et al. First trimester bleeding in clinical IVF pregnancies. *Hum Reprod*. 1988; 3: 807-809.
  10. Stabile I, Campbell S, Grudzinskas JG. Ultrasound and circulating placental protein measurements in complications of early pregnancy. *Br J ObstetGynaecol*. 1989; 96: 1182-1191.
  11. Yakıştıran B, Yüce T, Söylemez F. First Trimester Bleeding and Pregnancy Outcomes: Case-Control Study. *JWHRS*. 2016; 1: 4-7.
  12. Edwards DRV, Baird DD, Hasan R, et al. First-trimester bleeding characteristics associate with increased risk of preterm birth: data from a prospective pregnancy cohort. *Human Reprod*. 2012; 27: 54-60.
  13. Bhatnagar A, Bhaga VK. To evaluate the causes of Bleeding per Vagina in first Trimester of Pregnancy by Ultrasonography. *J Health and Clinical Research*. 2021; 10: 212-214.
  14. Murugan VA, Murphy B O'Sullivan, Dupuis C, et al. Role of ultrasound in the evaluation of first-trimester pregnancies in the acute setting. *Ultrasonography*. 2020; 39: 178-189.
  15. Guena MN, Alapha FZ, Kemegne DCM, et al. Ultrasound Study of First Trimester Bleeding. *O J Radiol*. 2019; 9: 58-68.
  16. Saraswat L, Bhattacharya S, Maheshwari A, et al. Maternal and perinatal outcome in women with threatened miscarriage in the first trimester: a systematic review. *BJOG*. 2010; 117: 245-257.
  17. Weiss JL, Malone FD, Emig D, et al. Obesity, obstetric complications and caesarean delivery rate a population-based screening study. *Am J Obstet Gynecol*. 2004; 190: 1091-1097.
  18. Siddiqui F, Kean L. Intrauterine fetal death. *Obstet Gynaecol Reprod Med*. 2009; 19: 1-6.
  19. Yang J, Hartmann KE, Savitz DA, et al. Vaginal Bleeding during Pregnancy and Preterm Birth. *Am J Epidemiol*. 2004; 160: 118-125.
  20. Lykke JA, Dideriksen KL, Lidegaard O, et al. First-Trimester Vaginal Bleeding and Complications Later in Pregnancy. *Obstet Gynecol*. 2010; 115: 935-944.
  21. Souzi B, Akrami R, Borzoe F, et al. Comparison of the efficacy of sublingual, oral, and vaginal administration of Misoprostol in the medical treatment of missed abortion during first trimester of pregnancy: A randomized clinical trial study. *J Res Med Sci*. 2020; 72: 1-6.
  22. Snell BJ. Assessment and Management of Bleeding in the First Trimester of Pregnancy. *Journal of Midwifery & Women's Health*. 2009; 54: 483-491.
  23. Sy T, Diallo Y, Toure A, et al. Management of Extra Uterine Pregnancy in Conakry (Guinee). *Med Trop*. 2009; 69: 565-568.
  24. Dohbit JS, Foumane P, Kapohem D, et al. Ectopic Pregnancy at the Regional Hospital Center of Bafoussam: Epidemiological, Clinical and Therapeutical Aspects. *Clinics in Mother and Child Health*. 2010; 7: 1189-1193.
  25. Dieme E, Faye Dieme ME, Kane R, et al. Extra Uterine Pregnancy at the Principal Hospital of Dakar: Diagnostically and Therapeutically Characteristics. *Journal of African Society of Gynecology and Obstetrics*. 2013; 14: 27-32.
  26. Grigoriu C, Bohiltea RE, Miha BM, et al. Success rate of methotrexate in the conservative treatment of tubal ectopic pregnancies. *Experimental and Therapeutic Medicine*. 2022; 23: 1-7.
  27. Hendriks E, MacNaughton H, MacKenzie MC. First Trimester Bleeding: Evaluation and Management. *Am Fam Physician*. 2019; 99: 166-174.
  28. Hawrylyshyn K, McLeod SL, Thomas J, et al. Methotrexate for the treatment of unruptured tubal ectopic pregnancy. *CJEM*. 2019; 21: 391-394.

## Iconography



Vesicular debris after MVA Origin: Teaching Hospital Sanou Sourô



Intraoperative unruptured ectopic pregnancy Origin: Teaching Hospital Sanou Sourô



Ampullary portion

Isthmic portion

Macroscopic aspect of an unruptured left tubal ectopic pregnancy

Origin : Teaching Hospital Sanou Sourô