

# Placental Abruption in the Obstetrics and Gynecology Service of Regional Hospital Center of Ouahigouya: Epidemiological, Clinical Ant and Therapeutic Aspects about 89 Cases Collected from 1<sup>st</sup> January 2013 to 31<sup>st</sup> December 2015

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## Abstract

**Objective:** To study epidemiological, clinical ant therapeutic aspects of placental abruption in the service of obstetrics and gynecology of regional hospital center of Ouahigouya. **Methods:** We conducted a cross-sectional study scheduled for 3 years, from 1<sup>st</sup> January 2013 to 31<sup>st</sup> December 2015. Data were collected from patients' folder, theater register and maternity delivery register. **Results:** We recorded 5791 deliveries, out of which 89 were placental abruption cases giving a rate of 1.54% of deliveries. The women most affected were those with age ranging 25 - 30 years (30.33%), the nulliparous women (32.58%), the married women (83.52%) and those with bad antenatal clinic attendance (54.6%). The clinical aspect was most often complete: nil fetal heart rate (82.00%), hypertony uterine (79.90%) and vaginal bleeding (74.20%) were the most signs found. Spontaneous vaginal delivery has been made in 64.04%. Maternal prognosis was dominated by a morbidity linked by an anemia in 53.90%. Maternal lethality was 2.20%. Fetal newborn-death was 88.80%. **Conclusion:** Placental abruption represents an obstetrical and medical emergency by its start of brutal installation, its unforeseeable character and its materno-fetal consequences. Only a tacking of risk populations, precocious of diagnosis and a speed management in surgical and medical unit allow improving the prognosis of this disease.

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## Keywords

Placental Abruption, Rate, Risk Factors, Prognosis, Maternal, Neonatal

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### 1. Introduction

Women health is part of World Health Organization worries (WHO) for long time and becomes the international priority today [1]. In 2005, maternal mortality was estimated of 830 deaths for 100,000 newborns in developing countries against 24 for 100,000 newborns in Europe countries. Haemorrhage was the main maternal death cause (34%) followed by infections (21%), risked abortions (18%) and hypertension states (16%).

The premature detachment of a normal insertion of placenta or Placental abruption is a serious complication of pregnancy occurring usually at the third trimester and involving the prognosis of mother and fetus. It is an obstetrical emergency.

- In France, the frequency of placental abruption varies between 0.25% and 0.5% [2] [3].
- In Anglo-Saxons countries, the rate observed is slightly elevated, between 1% and 2% [4] [5].
- In Ivory Coast Republic, in 70 cases studied, Mian *et al.* found a rate of 1.55% of placental abruption [6].
- In Burkina Faso: Thieba *et al.* reported a rate of 0.96% [7].

With adoption by the government of Burkina Faso of national strategy for obstetric and neonatal emergency care sponsoring, improvements were performed. Placental abruption, one of biggest surgical and medical emergency departments is a concern in obstetrics and gynecology service of regional hospital center of Ouahigouya.

Our study objective was to establish the epidemiological, clinical and therapeutic aspects of placental abruption in the service of obstetrics and gynecology of regional hospital center of Ouahigouya from 2013 to 2015.

The regional hospital center is the referral hospital of six (6) sanitary districts of north region which are: Ouahigouya, Titao, Séguenega, Gourcy, Thiou and Yako. Its population zone of cover is estimated of 1,306,609 inhabitants.

### 2. Patients and Methods

The study was performed in the Obstetrics and gynecology service of this hospital.

We conducted a cross-sectional study with descriptive type and a retrospective collect of data over two (02) years, from 1<sup>st</sup> January 2013 to 31<sup>st</sup> December 2015.

Were included in the study, patients presented clinical signs and or ultrasound of placental abruption with a gestational age greater than 28 weeks of amenorrhea admitted in the obstetrics and gynecology service of regional hospital center of Ouahigouya.

Non inclusion criteria involving patients whom medical folder was unusable (incomplete medical folder).

Variables obtained were about sociodemographics characteristic (age, parity, Residency, occupation, marital status), patients clinical characteristic (mode of admission, gestational age, clinical signs), management and the maternal and neonatal outcomes.

Using a questionnaire pre-tested, data were collected by the obstetrics folders, theatre register and maternity delivery register. Data collected were analysed using a software Epi-Info version 3.5.4. The results were presented in percentage for qualitative variables and mean and gap-type for quantitative variables.

### 3. Results

#### 3.1. Frequency of Placental Abruption

During the study period, we recorded 5791 deliveries out of which, 89 were placental abruption cases. The rate of placental abruption was 1.5% of deliveries, then 30 cases per year.

#### 3.2. Sociodemographic Characteristics of Patients

The mean age was 29.6 years with extreme of 14 and 45 years, 56.2% of patients were less than 30 years old. The mean parity was  $2 \pm 2$ . The biggest parity was 11 and the nulliparous women were represented with 32.6% of cases.

We noted that 43.8% of patients were from urban district of Ouahigouya, 52.8% of patients were from the others districts of region of North (Gourcy, Séguenega, Titao, Yako) and 3.4% were from the districts located beyond of zone of cover of region of North.

In our study, 82 (92.1%) patients had non-salary occupation, the housewives represented 80.9% (72 patients). The married women were represented in 83.5% of the sample.

#### 3.3. Clinical Aspects

The referred patients represented 88.8% (79/89). The mean gestational age was 36 weeks of amenorrhea and 92.9% (78/89) of placental abruption cases occurred in the third trimester of pregnancy. The half of sample had less 3 antenatal clinic visits. The main clinical signs at the admission were: absence of fetal heart rate (82%), uterine hypertonicity (79.8%) and painless vaginal bleeding (74.2%), 20.2% had hypertensive disease prior to admission admission.

**Table 1** shows the distribution according to clinical signs at admission.

The placenta cupule diameter (measured from one edge to the other with a tape measure at examination of the placenta) was evaluated in 47 cases (52.8%). That diameter was varying of 2 cm of whole maternal placental area.

**Table 1.** Distribution of patients according to clinical signs at admission.

Clinical signs	Number	Percentage
Painless vaginal bleedings	66	74.2
Uterine hypertonicity	71	79.8
Hypertension	18	20.2
Absence of fetal heart rate	73	82.0
Collapse state	02	2.2

The severity of clinical signs by the use of SHER classification [8] allowed to arrange 84.3% of cases in the grade 3; 10.1% of cases presented a state of coagulopathy (grade 3B).

**Table 2** shows the repartition of patients according the SHER classification.

### 3.4. The Therapeutic Management

The spontaneous vaginal labor was possible in 57 patients (64.0%). The mean delay of evacuation of uterus was 252 minutes and with extreme of 36 and 1234 minutes.

Blood transfusion with whole blood has been performed in 52 patients, 58.4% of placental abruption cases and hypertension drugs have been administrated in 15.7% of cases.

### 3.5. Placental Abruption Prognosis

#### 3.5.1. Maternal Prognosis

The mean duration of stay was 3 days with extremes of 1 day and 26 days. Maternal complications were dominated by an acute anemia (53.90%) abnormal coagulation (10.1%) and infections (6.7%).

**Table 3** illustrates the repartition according to maternal complications.

We recorded 2 cases of maternal death involving placental abruption, giving a mortality rate of 2.2%. During the study period, 150 maternal deaths were recorded in the service out of which, 1.3% was from placental abruption. The result of univaried analysis between maternal prognosis and prognosis factors show there is an association significant statically between mode of admission, mode of delivery and gestational hypertension. There was no association between maternal prognosis and parity.

**Table 4** shows the distribution of maternal prognosis by risk factors.

**Table 2.** Repartition of patients according to the SHER classification (n = 89).

Classification	Number	Percentage
Grade 1	08	9
Grade 2	06	6.7
Grade 3a	66	74.1
Grade 3b	09	10.1
Total	89	100.0

**Table 3.** Repartition according to maternal complications.

Complications	Number	Percentage
Anemia	48	53.9
Coagulopathy	09	10.1
Hypovolemey collapsus	02	2.2
Infection	06	6.7
Kidney deficiency	04	4.5

**Table 4.** Distribution of maternal prognosis by risk factors.

Prognosis factors	Maternal prognosis % (n = 89)		X <sup>2</sup>	P-value
	Good	Bad		
Mode of admission				0.027
Direct	93.8	6.2		
Referred	84.5	15.5		
Mode of delivery			5.086	0.005
Vaginal	92	8		
C-section	83.5	16.5		
Gestational hypertension				0.039
Yes	70.3	29.7		
No	86.8	13.2		
Parity			0.047	0.422
0 - 3	87.3	12.7		
4 and more	86.5	13.5		

### 3.5.2. Neonatal Prognosis

We recorded during the study, 79 neonatal deaths giving a rate of neonatalde of 88.8% (Including 6 pending delivery, or 6.7%). The results of unvaried analysis between fetal prognosis and prognosis factors show an association statically significant between number of antenatal clinic visits performed, mode of admission, mode of delivery. There was no association between fetal prognosis and gestational hypertension.

**Table 5** illustrates the repartition of newborns by prognosis factors.

## 4. Discussion

### 4.1. Limitations of Study

Due to retrospective collect of data, we notice the following limitations: the miss data for some of variables. As well, our cases were selected in the folders based on which the placenta examination was mentioned. It is obvious some placental abruption cases were miss, then an under-estimation of frequency of this disease.

### 4.2. Frequency of Placental Abruption

In our study, the frequency of placental abruption was 1.5%. That is similar to those reported by Mian *et al.* and Doumbia in Ivory Coast [6] [9] who found respectively 1.55% and 1.46%. It is higher than that of Thiéba in Burkina Faso and Touré in Ivory Coast [7] [10] who reported 0.96 and 0.90% respectively. On the other hand, our frequency is twice or 3 times lower than those reported in Nigerien [10] and Senegalese [11] studies, respectively 3.6% and 6.05%.

These African rates remain higher to those from European studies which vary from 0.20 to 2% [2] [3] [12].

Lots of studies around the world have shown that the advanced age of women was a risk factor of placental abruption [7] [13] [14]. So, it is a third decade accident.

**Table 5.** Repartition of newborns by prognosis factors.

Prognosis factors	Fetal prognosis %		X <sup>2</sup>	P-value
	Good	Bad		
Number of ANC	(n = 86)		7.6	0.002
0 - 2	16.3	83.7		
3 - 5 and more	30.1	69.9		
Mode of admission	(n = 89)		5.57	0.008
Direct	36.9	63.1		
Referred	21.8	78.2		
Mode of delivery	(n = 89)		24.01	0.000
Vaginal	8.1	91.9		
C-section	30.0	70.0		
Gestational hypertension	(n = 89)			0.238
Yes	32.7	67.3		
No	23.9	76.1		

However, in our study, the mean age of patients was  $29.58\% \pm 6.12\%$  years and the range of 25 - 30 was most affected (30.33%). Our results seem to be closed to literature where the mean ages varied between 28.5 and 31.3 years [9] [14] [15].

The young age of our patients may be linked to socio-cultural factors especially the precocity of marriage.

### 4.3. Clinical Aspects of Placental Abruption

The bad antenatal clinic attendance is a factor leading to placental abruption. In our study, 54.60% had less than 3 antenatal clinic visits. This rate is comparable to those found by Thiéba in Burkina Faso (61.20%) and Sarr in Senegal (47.90%) [7] [16].

Akpadza in Togo [17] realized that the rate of placental abruption trend to decrease when the number of antenatal clinic performed increases.

The lack of adequate follow up of pregnancy with for corollary under-estimation and a late track down of risk factors lead to a low rate of reference during pregnancy and an important rate of emergency referral (88.80%).

In our study, the main clinical signs found at admission were: No fetal heart rate (82%), uterine hypertonicity (79.8%), painless vaginal bleeding (74.2%) and hypertension (20.2%). Indeed, the fetal heart rate was present in 18% of cases. A similar rate of 17% has found by Thiéba in Burkina Faso [7]. Others authors such as Diouf in Senegal, Doumbia in Ivory Coast have found rates of 23.30% and 22.30% [18] [19]. On the other hand in Europe, 30% to 50% of placental abruption is complicated by intrauterine fetal death [9]. We should base on the quality of antenatal clinic attendance during pregnancy that can help to refer on time the patients with an obvious risk to another high level hospital and avoid an emergency referral which may reduce the fetal prognosis.

### 4.4. Therapeutic Management

The precocious and a speed evacuation of uterus is the base of obstetrical treatment of

placental abruption. Spontaneous vaginal delivery was the main mode of delivery in our study with a rate of 64%, the rate of cesarean section was 35%. Similar studies are reported by Thiéba in Burkina Faso and Akapadza in Togo [7] [17]. On the other hand, a lower cesarean rate has reported by Doumbia in Ivory Coast and Nayama in Niger, respectively 63.2% and 94.10% [9] [12]. However, is it suitable to notice that vaginal delivery with intrauterine fetal death was common in maternity of regional hospital center; the cesarean section was indicated when the fetus is alive or the occurring of complications such as coagulopathy or whatever obstetrical complications. For this latter situation, the cesarean is indicated for maternal lifesaving.

#### 4.5. Prognosis of Placental Abruption

In our study, as in most of studies [7] [9] [17], maternal morbidity is dominated by acute anemia; due to hemorrhage which is the direct consequence of abnormal coagulation combine with uterine atony [20]. Abnormal coagulation was observed in 11.60% but lower than that found by Thieba in Burkina Faso [7] (4.50%). That low rate may link to unavailable of laboratory exam in our work area.

Lethality was 2.2% in our study. That is comparable to reported by Doumbia in Ivory Coast [9] who found 2.90%. However, our result remain lower than others African studies where was varying 3.90% and 5.10% [7] [12] [14]. These deaths were linked to later diagnosis and difficulties for treatment especially insufficiency of means for resuscitation face to huge and prolonged bleeding (lack of blood and derivative for transfusion).

The fetal prognosis is dark view the rate of fetal mortality of 88.76% in our study. That is comparable to those found by others African authors [7] [9] [14] [18]. It reveals the late of diagnosis and the management before admission of patients.

### 5. Conclusion

Placental abruption is an obstetrical disease still common in developing countries. It is associated with a heavy maternal and fetal morbi-mortality. The diagnosis and the treatment should be performed without any late; it will help to improve the maternal and fetal prognosis. In African context, that goes by an improvement of care quality, equipment of reference sanitary building with resuscitation instruments and the availability of blood products.

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