

Research Article

Epidemiological, Therapeutic and Prognosis Aspects of Abruptio Placentae in an Insecure Area of Mali, Case of the Hospital of Timbuktu

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Summary

Objectives: Obstetric hemorrhages remain the leading cause of maternal death in the world. In addition, an abruptio placenta is responsible for significant maternal and perinatal mortality in Sub-Saharan Africa. Our objective was to determine the prevalence, the maternal and perinatal prognosis of this pathology at the Timbuktu hospital.

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Patients and methods: It's a cross-sectional descriptive study with retrospective collection over a six - years period from January to December 2018, including all cases of abruptio placentae recorded at the Timbuktu hospital.

Results: We have collected 133 cases of abruptio placentae out of 5999 deliveries, in others words 2.21%. The mean age of the patients was 28 years with a predominance of multiparous patients (32.33%), evacuated (53.38%). No prenatal consultation was performed in 36.09% of cases. Arterial high blood pressure was found in 36.84% of patients and a grade 3 of Sheer in 60.15% (80 cases). The caesarean section rate was 74%. The maternal mortality rate was marked by bleeding disorder in 6.7% anemia requiring blood transfusion in 51.88% of patients. The perinatal mortality rate was 65.22%. The elements of poor perinatal prognosis were represented the severe maternal anemia odds with 95% confidence interval CI at 95% = 15 (3.6-70), the small birth weight ORCI at 95% = 4.8 (2.1-8), non-monitoring of pregnancies ORCI at 95% = 4.7 (2.1-8) and the lack of evacuation.

Conclusion: The maternal and prenatal mortality rate related to abruptio placentae is high in our context. Its reduction requires improved prenatal care evaluation conditions and strengthening of the technical platform and qualified personnel.

Keywords: Abruptio placentae; Maternal and prenatal prognosis; Pregnancy; Timbuktu

Introduction

An abruptio placenta related to maternal mortality is about 1% [1,2] in developing countries. It's also associated with significant prenatal mortality and morbidity [3,4]. This prenatal mortality is about 7 to 20% [5-8] in developing countries. In Mali abruptio placentae has been responsible for almost all pregnancies stopped in abdominal trauma during pregnancy at Teaching Hospital Gabriel Touré [9]. Management depends on the severity of the clinical presentation and gestational age and required concomitant obstetric management of medical resuscitation [10,11]. The precarious state of technique plateau aggravated by the security crisis that has been raging since 2012 has made it difficult to deal with obstructive emergencies through the reference / evacuation system in this part of the country. Furthermore, the lack of data about abruptio placentae in the Timbuktu region justifies the carrying out of the present study at the Timbuktu hospital. The aim of this study was to study epidemiological, therapeutic and prognosis aspects of abruptio placentae in an insecure area of Mali, case of the hospital of Timbuktu.

Patients and Methods

The study took place at the Timbuktu hospital in northern Mali, located 1300km from Bamako, the Malian capital. The Timbuktu region is Mali's seventh administrative region in northern Mali, where armed groups are operating and insecurity is very high. This area is at high risk of attacking terrorism, armed groups and banditry and disruption obstetric evacuations inside the Timbuktu region. In accordance with the sectorial health policy in the reference system / evacuation

of Mali, the Timbuktu hospital receives referrals and evacuations of circles from Goundam to 97km, Dire to 135Km, Gourma-Rharous to 160Km, Niafunké to 200Km. The maternity hospital covers 50000 reproductive-age women in the health districts and several rural communities with 46400 births expected each year. Obstetric activities are carried out in basic emergency obstetric care (SOUB) and comprehensive (SONUC). The maternity ward which has only 20 beds and the only regional reference second hospital in the region providing comprehensive emergency obstetric and neonatal care (SONUC) and receiving all references-evacuations of health districts and private structures in the region, available 24 hours a day. The hospital has an operating room with function rooms and a blood bank without medico-surgical unit.

A cross-sectional study with retrospective data collection was carried out. It was conducted from 2013 to 2018. The study population was composed of all pregnant women 28 weeks of age and older who gave birth at the Timbuktu Hospital during the study period. We included in this study all women who had a retro placental hematoma. The variables studied were socio-demographic data, mode of admission, reference structures, reason for admission, medico-surgical history, evolution of previous pregnancies, pathologies associated with pregnancy, parity, number of prenatal consultation, clinical admission data, paraclinical data, length of hospital stay, maternal progress (complications, deaths), newborn status at birth, weight, sex, score Apgar, resuscitation, prematurity, hypotrophy, perinatal death and factors associated with perinatal mortality. Live newborns whose mothers had a retro placental hematoma were followed during the first 7 days of life in order to know the perinatal prognosis. The statistical tests used were the Pearson Chi² test, the odds ratio and the significance p. The p was significant if the probability is ≤ 0.05. Ethical aspects have been respected guaranteeing confidential medical information.

Results

Abruption placentae frequency (Figure 1)

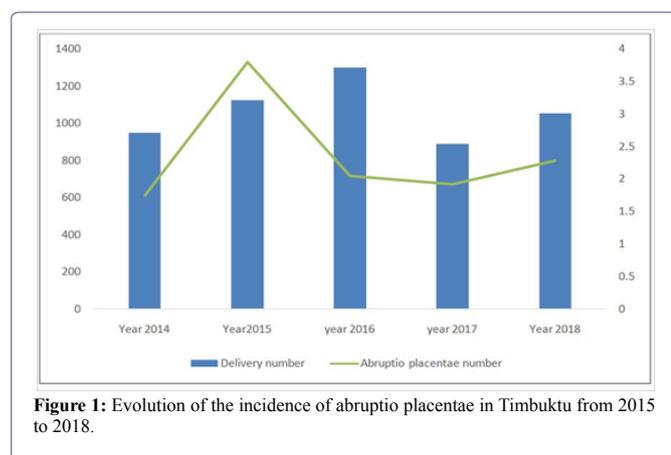


Figure 1: Evolution of the incidence of abruption placentae in Timbuktu from 2015 to 2018.

The incidence of abruption placentae varies from year to year. Of a total of 5999 deliveries, 133 cases of abruption placentae were noted, in other words 2.21%. The minimum incidence was observed in 2014 with 1.75% and maximum in 2015 with 3.80%. The epidemiological Characteristics of the patients are summarized in table 1 below.

Characteristics	%	n/n
Age		
15-19 years old	11.3	15/133
20-34 years old	66.1	88/133
35 years old	22.6	30/133
Profession		
Housewife	91.0	121/133
Pupils/students	6.0	8/133
Merchant/worker	1.0	1/133
Civil servant	2.0	3/133
Schooling		
Non-schooling	89.0	14/133
Educated	11.0	89/133
Admission mode		
Evacuated/referred	53.0	70/133
Come from herself	47.0	63/133
Provenance structure		
Community health center	35.0	47/133
Reference health center	1.5	22/133
Medical office	1.5	2/133
Home	47.0	62/133
Residence of origin		
Timbuktu city	83.5	111/133
Timbuktu city ring road	4.0	5/133
Gourma-Rharous	8.0	11/133
Goundam	1.5	2/133
Niafunke	1.5	2/133
Dire	1.5	2/133

Table 1: Epidemiological characteristics of patients.

Clinical characteristics of patients

Our patients had a clinical profile. High blood pressure (20.3%); diabetes (1.5%) and asthma (2.3%) accounted for our medical history. The previous caesarean section was 12% and that of the 1.5% myomectomy. The average parity was 4 with extremes of 1 to 12 abruption placentae was found in our patients. Multiparous patients predominated with 32.3%. The pathological obstetrical history found in this study was miscarriage (3.8%); abruption placentae (1.5%); pre-eclampsia (1.5%); eclampsia (0.8%). Evacuation patterns dominated by isolated menorrhagia and uterine contractions (16.5%); uterine hypertonia (7%) and hypertension (4.5%) of the 133 patients, 10% had at least antenatal visits. Forty-two per cent of the patients had antenatal visits between one and three. However, 59% of the patients had no antenatal visits. The notion of abdominal trauma on pregnancy was found in 3.8% (5/133) patients. About 74% of the patients had labor; the membranes were intact in 80% of patients. The physical examination found a hypertonia in 59% of the cases. Fetal presentation was high for 86% and abnormal for 14% of cases. The urine strip noted more than 2 crosses in 78% of the patients and a trace in 22%. At admission hypertension was diagnosed at 28% and collapse at 13% of patients. The mean gestational age was 36 weeks of amenorrhea with extremes of 22 and 40 weeks of amenorrhea. More than 82% of patients had a pregnancy between 34 and 40 weeks. The other clinical characteristics of the mother and the fetus were dominated by single pregnancies (96%), anemia (83%) and pathologies associated with

pregnancy hypertension (28%), lack of fetal activity (66%), shock (6%), Sheer grade3 61%, low birth weight (56%).

Treatment and prognosis

In table 2, we have described the management of abruption placentae cases and the early perinatal prognosis.

Characteristics	%	n/n
Vascular filling		
Yes	31	41/133
No	69	92/133
Delivery route		
Caesarean	26	35/133
Vaginal	74	98/133
Anesthesia		
General anesthesia	26	35/133
Locoregional	4	5/133
None	70	93/133
Clot weight (grams)		
< 500	15	20/133
≥500	15	20/133
Unspecified	70	93/133
Delay between admission and expulsion (hours)		
≤ 2	74	99/133
> 2	26	34/133
Apgar at the first minute		
Still dead	66	91/138
1 to 3	0.7	1/138
4 to 7	14	19/138
≥8	19.3	27/138
Transfusion		
Yes	52	69/133
No	48	64/133
State of the newborn		
Living	91	43/47
Perinatal deaths		4/47
Transfer pattern in neonatology		
Prematurity	7.5	10/133
Respiratory distress	4	5/133
Hypotrophy	3	4/133

Table 2: Therapeutic management and prognosis.

Factors associated with perinatal deaths

Factors associated with perinatal death have been studied in table 3.

Maternal and perinatal prognosis

Maternal morbidity was dominated by anemia secondary to hemorrhage in 77/133 cases, 77% of which 29% was severe. A table of acute renal failure was observed in 2 cases (1.5%). A shock state associated with abruption placentae in 8 cases is 6% of cases and finally a combination of coagulopathy and abruption placentae in 9 cases representing 7% of cases. The elements of poor maternal prognosis were represented by the severity of the clinical picture from which sheer grade 3 contributed to (63%), women evacuated (53%), laps (13%), severe anemia (83%), delay between admission and delivery 26%.

However, the delivery route was caesarean section in 74% of cases and the vaginal route in 26%. These deaths occurred after uterine evacuation and coagulopathy was responsible for death in one patient. For perinatal prognosis, we recorded 91 stillbirths and 4 deaths in the first week of life. Perinatal mortality was 69%. The average birth weight was 2250 ranges with extremes of 500 ranges and 4500 ranges. Low birth weight was observed in 74 patients, or 56% of cases. The factors of poor fetal prognosis were represented by the severity of the clinical picture with anemia $p = 0.000$; low birth weight OR = 4.8 (2.2-10.6), no antenatal visits OR = 4.7 (2.1-10.8) and health assessment OR = 5.3 (2.3-11.6). The leading causes of maternal death were clotting disorders 66% and renal failure 33% (1/3). The perinatal mortality was 69% (95/138) whose main causes were the prematurity, respiratory distress.

Factors		Perinatal deaths		K _{hi} ²	Odds ratio CI 95	P
		Yes	No			
Home	Timbuktu	71	37	0.4	1,1 (0.4-3.8)	0.8
	Other	14	8			
Anemia (g/dl)	< 7	36	2	20		0.000
	≥ 7	44	39			
Fetal weight (gram)	< 2500	56	16	16	4.8 (2.2-10.6)	0.000
	≥ 2500	21	23			
Antenatal visits	No	49	10	14	4.7 (2.1-10.8)	0.000
	Yes	36	35			
Terms (week of amenorrhea)	< 37	40	16	1.6	1.6 (0.7-3.3)	0.2
	≥ 37	50	32			
Admission mode	Reference evacuation	58	13	18	5.3 (2.3-11.6)	0.000
	Self - reference	27	32			
High blood pressure	Yes	23	20	2.3	0.6 (0.2-1.2)	0.1
	No	52	25			

Table 3: Factors associated with perinatal deaths in Timbuktu.

Discussion

Rate (Frequency)

Abruption placentae complicated 2.21% of births our study. This frequency is similar with those of the authors in Africa notably that of Sandjo [12] at teaching hospital Gabriel Touré of Bamako, which found 2.05% and Nayama [8] in Niger found 3.6%. On the other hand, those found by Tieba [9] in Ouagadougou and Mian DB et al., [13] attaching Cocody hospital were lower than ours, a frequency of 0.96% and 1.55% respectively (10.38). Western studies reported frequencies around 0.5 to 1%. The incidence of abruption placentae in Strasbourg in 2013 was 6.6% [10,14]. Indeed, these differences in the incidence of abruption placentae in African countries can be explained by the study population and the diagnostic criteria used by the Authors clinical and \ or pathological.

Clinical aspects

Risk factors for abruption placentae are known [1,2,14]. The abdominal trauma during pregnancy was found in 3.8% (5/133) of the patients in the study on clinical examination. This was a public accident during transport with two-wheeled vehicles or ambush attack

by armed groups or armed bandits frequent in this locality of the country. The classical risk factors of abruption placentae were found in our study (see clinical characteristics of patients). The existence of hypertension, the antecedent miscarriages and antecedent of fetal death in utero were found in this study. Three main reasons for consultation were isolated menorrhagia (42%), uterine contractions (18%) and menorrhagia + uterine contractions (16.5%). Pregnancy was no longer followed in 59% of cases against 41% of pregnancies followed. Proteinuria was significantly greater than two crosses in the strip in 78% of cases. The pregnancy had a term greater than 34 weeks in 81% of cases, of which 61% of cases in the future. Hypertension was the main pathology (28%) associated with pregnancy and patients were received in sheer class 3 including 7% coagulopathy. We had recourse to vascular filling, blood transfusion, caesarean section and general anesthesia respectively in 31%, 52%, 26% and 26% of cases.

Maternal and perinatal prognosis

Regarding the path of entry, there seems to be consensus showing the superiority of caesarean section in the case of live fetuses [4,9]. These results corroborate those of Boisramé et al., [14] and Sananes et al., [7]. In France who reported respectively 68% (28) and 88% (12) caesarean section. On the other hand, our result is lower than that of Thieba [9] which found 35.9% in the majority of cases, our patients were admitted during the labor latency phase and the severity of the clinical presentation at admission may explain our high caesarean section rate compared to that of Thieba [9]. As in several African studies [8,9], anemia is the major maternal complication of HRP. In our series, anemia was present in 83% of cases, 35% of cases of severe. However, 3 cases of maternal death were noted in our series; 2.26%. This rate corroborates that of Coleman et al., [6] in Ghana who found 2%. On the other hand, it is lower than those of some authors in Africa [2,5,9,15] who found rates ranging from 5.1% to 11.5%.

While it is higher than those in developed countries which remains below 1% [16-18]. This thanks to a fast and adapted support in the middle of resuscitation. Our cases of death can be explained on the other hand, by the low health coverage in the peripheral area, the delay of patients to resort to health centers, evacuation conditions and on the one hand, by the insufficiency of effective resuscitation measures in the region. As for the fetal prognosis, it remains dark in our developing countries. In our series, fetal morbidity as dominated by a low birth weight in 55.80% of cases with an average weight of 2250 ranges against 2680 ranges for Thieba in Ouagadougou [9] and 4142 ranges for Thiam in Senegal [1]. Our rate of low birth weight is lower than that of Boisramé T [14] 68.2% in France against higher than that of Madagascar 43.7%. This difference could be explained by an unspecified estimate of this gestational age in our (date of the last imprecise, late ultrasound). The perinatal mortality rate was % (95 cases/138); this perinatal mortality rate is close to Coleman J et al., [6] in Nigeria, which found 63.9%. As for stillbirth it was 91 cases/138 or 66%; this is lower than that of Nayama [8] which found 71%. This significant proportion is explained by: the low rate of rough forms with live child, the patients often presenting on admission a severe clinical picture (more than 60% of grade 3 of Sheer). Some African authors [5,18-21]. Found as factors of bad perinatal prognosis: the gravity of the clinical picture, the medical evacuation, the importance of the blood clot, the low birth weight, and the way low as a mode of delivery. Factors that were statically associated with perinatal

mortality in our setting were: severe maternal anemia, small birth, missed pregnancies and referral/evacuation (Table 3). The perinatal mortality in our study was estimated at 72% comparable to that of Thiam in Senegal 60% (1).

Conclusion

This study conducted at Timbuktu hospital aimed to improve its management. Indeed, the frequency of abruption placentae remains high in our context. It identified severe maternal anemia, low birth weight, unregulated pregnancies and sanitation as factors that were relation with increased perinatal mortality. Patients presenting abrupt placentae were mostly evacuated in a context of insecurity with attack of the medical ambulance. The clinical picture was severe, imposing a huge transfusion requirement in a remote and insecure area and not having the blood donation culture. This attitude is taken into account in the indications of Cesareans. The development of a coherent and cost-effective care strategy should help to reduce the maternal and perinatal mortality rates of still high obstetric emergencies.

Public Declaration of Interest

I, the undersigned, Dr. Fane Seydou, declare that I have no direct or indirect financial or in-kind interest with a private, industrial or commercial organization in relation to the subject presented.

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