

## Immediate Post-Partum Haemorrhage: Epidemiological Aspects and Maternal Prognosis at N'Djamena Mother and Child Hospital (Chad)

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### Abstract

**Introduction:** The post-partum haemorrhage affects women in all countries and is the main cause of maternal mortality. It remains a frequent obstetric emergency in developing countries.

**Objective:** Identify the main causes of post-partum haemorrhage aiming to propose adequate management in order to reduce the mortality due to the post-partum haemorrhage.

**Patients and Methods:** This was a prospective and descriptive survey of nine months from April, 14<sup>th</sup> 2013 to January, 14<sup>th</sup> 2014 conducted at N'Djamena Mother and Child hospital. All patients that had presented the post-partum haemorrhage after delivery at N'Djamena Mother and Child hospital were included. Before including a patient in our survey her consent was obtained after explaining to her the need for the survey. All consenting patients with post-partum haemorrhage were included. Data were analyzed using SPSS17.0.

**Results:** We recorded 69 cases of post-partum haemorrhage among 5456 deliveries giving a frequency of 1.26%. The average age was 24.98 years. The majority of deliveries were vaginal (89.9%). The main cause of immediate post-partum haemorrhage was a third stage bleeding (76.8%) followed by genital lesions (23.2%). The management was medical (fluid replacement solution and blood transfusion), obstetrical (manual removal of placenta, uterine revision), and surgery (suture of lesions, ligation of uterine artery and hysterectomy). We had registered one maternal death (1, 4%) among enrolled patients.

**Conclusion:** Post-partum haemorrhage is a fatal obstetric emergency in our region. Preventive measures and curative means can help to improve maternal prognosis.

**Keywords** Post-partum haemorrhage; Maternal prognosis; N'Djamena Mother and Child hospital

### Introduction

The immediate post-partum haemorrhage is a frequent obstetrical emergency in sub-Saharan African regions due to default of infrastructure for an adequate diagnosis and management. No country across the world is spared of post-partum haemorrhage, developing countries are more concerned [1,2]. According to World Health Organization (WHO) the post-partum haemorrhage is annually responsible for the quarter of maternal death (estimated to 585,000) [3,4].

The post-partum haemorrhage (PPH) is a post-partum blood loss  $\geq 500$  ml, and severe Post-partum haemorrhage as a post-partum blood loss  $\geq 1000$  ml, whatever the delivery route [5-7]. In population-based studies, the incidence of PPH is around 5% of deliveries when blood loss is not precisely assessed and around 10% when it is 5.

PPH remains the first cause of maternal death and is avoidable in 80% of cases [8]. In high-resource countries, PPH is the main cause of acute severe maternal morbidity [5]. In Africa the management of this

obstetric emergency is often faced to the lack of blood products and led to maternal death in many cases.

Our objective is to identify the causes of post-partum haemorrhage aiming to propose adequate management in order to reduce the mortality due to immediate post-partum haemorrhage.

### Material and Method

This was a prospective and descriptive survey for nine months from April, 14<sup>th</sup> 2013 to January 14<sup>th</sup> 2014 achieved at N'Djamena Mother and Child hospital about epidemiological aspects and prognosis of the immediate post-partum haemorrhage.

N'Djamena Mother and Child hospital is a third level hospital in N'djamena city which helps to take care of referred patients coming from surrounding hospitals.

The population of survey was composed of patients that had given birth at the maternity of N'Djamena Mother and Child hospital or referred from another hospital for haemorrhage occurred after delivery.

Studied variables were: age, parity, the causes and factors of risk, treatment and prognosis. Before including a patient in our survey her consent was obtained after explaining to her the need for the survey. All consented patients with post-partum haemorrhage were included. For this survey we got the agreement of the Director of N'Djamena Mother and Child hospital and ethical committee. Data were analyzed using SPSS17.0.

## Results

### Frequency

During this survey we recorded 69 cases of the immediate post-partum haemorrhage among 5456 deliveries giving a frequency of 1.26%

### Age and parity

The age group from 20 to 24 years was more concerned with 33.3% (n=23/69). The average age was 24. 98 years with extreme included between 15 to 39 years. Grandmultiparous were represented in Table 1 as 31.9% (n=22/69) and the average parity was 3.2.

Characteristic	Number (%)
Age (years)	
15 -19	14 (20.3%)
20 - 24	23 (33.3%)
25 - 29	13 (18.9%)
30 - 34	12 (17.4%)
≥ 35	7 (10.1%)
All ages	69 (100%)
Parity	
Primiparous	22 (17.4%)
One previous baby	19 (27.5%)
Multiparity	16 (23.2%)
Grandmultiparity	22 (31.9%)

**Table 1:** Age and parity

### Risk factors of the immediate post-partum haemorrhage

More than half of patients (n=35/69, i.e., 50.7%) had not any risk factor. No factors that could cause HPP were identified during the pregnancy and delivery. Despite this lack of risk factor, the HPP was occurred.

Among risk factors, grandmultiparous was more represented with 31.9% (n=22/69).

Causes of the immediate post-partum haemorrhage were represented in Table 2

Risk Factor	Number (%)
Grandultiparity	22 (31.9%)

Eclampsia	1 (1.4%)
Placenta abruption	2 (2.9%)
Precipitate delivery	1 (1.4%)
Intra uterine death	3 (4.3%)
Macrosomia	3 (4.3%)
Uterine myoma	2 (2.9%)
No risk factor	35 (50.7%)

**Table 2:** Risk factors

Fifty three patients (76.8%) bled during the third stage of labour. There were 40 cases of uterine atony (58%) and 17.4% of the placenta retention. Genital lacerations represented 23.2% (n=16).

### Maternal prognosis

We recorded one case of maternal death among enrolled patients, giving a fatality rate of 1.4%. This death is due to the massive haemorrhage exacerbated with the lack of blood which were represented in Table 3

Causes	Number (%)
Uterine atony	40 (58%)
Partial placenta retention	9 (13%)
Retained placenta	3 (4.3%)
Cervical laceration	6 (8.7%)
Vaginal laceration	3 (4.3%)
Perineal laceration	7 (10.1%)
Clot disorder	1 (1.4%)
Total	69 (100%)

**Table 3:** Causes of post-partum haemorrhage

### Treatment of immediate post-partum haemorrhage

Expelling clot from the vagina and uterine cavity with fundal massage were achieved for all cases. The Manual removal of the placenta was done in 3 cases (4.3%).The suture of the genital lacerations had represented in Table 4 as 23.2% (16/69). We did bilateral ligation of uterine artery in 3 cases (4.3%), one B-Lynch suture (1.4%) and one hysterectomy (1.4%) as a life saving measure. The Antibiotic and uterotonic were systemically used. Fifty patients (72.5%) had received a blood transfusion.

## Discussion

### Frequency

In this survey, the frequency of the post-partum haemorrhage was 1.26%. Our proportion is lower than what reported by some previous authors in Africa varying from 2.3 to 5.4% [9-11]. We had noted an improvement in Chad comparing with data reported two years before

by Dlinga which found a frequency of 2, 6% [12]. This difference would justify by preventive means composed with the adequate management of placenta removal combining oxytocin or misoprostol in oral/rectal route after delivery for patients presenting risk factors of the post-partum haemorrhage.

Treatment	Number (%)
Medical	
Blood transfusion	50 (72.5%)
Colloid	2 (2.9%)
Uterotonic	69 (100%)
Antibiotic	69 (100%)
Crystalloid	69 (100%)
Obstetric	
Expelling clot from the vagina and uterine	69 (100%)
Manual removal of placenta	3 (4.3%)
Surgical	
Suture of laceration	16 (23.2%)
Vascular ligature	5 (7.2%)

**Table 4:** Treatment.

### Age and parity

The age group from 20 to 24 years was more represented (33.3%). Patients aged less than 30 years had represented 72.5%. Average age in this survey was 24.9 years. This proportion is close to those noted respectively as 24.5 and 24 years [10,13]. In Tunisia, Chaouki reported an average age of 30.8 years [11]. Factors like early marriage and no schooling of girls in our regions could explain this result.

Grandmultiparous was more concerned (31.9%). This proportions rejoined literature data about the post-partum haemorrhage that underlined a predominance of post-partum haemorrhage in this group [12,13]. However, factors causing uterine distention (macrosomia, hydramnios, and multiple pregnancies) or uterine myoma are recognized as main risk factors of post-partum haemorrhage [12-14]. The risk of post-partum haemorrhage is increasing with number of delivery, which can be explained by uterine muscle weakening and that cannot ensure uterine retraction allowing haemostasia

### Mode and place of delivery

Delivery were vaginal in 89.9% (n=62), with 06 cases of instrumental delivery (8.7%) . Seven (7) cesareans sections (10.1 %) were done. This result is opposable with what reported by Chaouki in Tunisia where cesarean sections were more represented [11].

Seventeen patients (24.6%) delivered at home. Difficulties linked to accessibility of health center and lack of information about delivery strategy that must be given during prenatal consultation can explained this proportion.

### Cause of post-partum haemorrhage

The third stage bleeding represented the main cause of post-partum haemorrhage (76.8%). the post-partum haemorrhage represents a public health problem because it represents the main cause of the maternal death in Chad. This proportion joined those reported in the literature showing that the third stage bleeding as main cause of post-partum haemorrhage [10,11,15]. Factors like home delivery, the inadequate use of oxytocin and risk factors reported in some cases can explained this proportion.

Dystocic labor is also a provider of genital lacerations which are among the main causes of the post-partum haemorrhage. Genital lacerations had represented in this survey 23.2% (n=16). Ducloy, Ngalbe, and Chaouki, had reported respectively 4%, 11.1%, 16.3%; and 9% of genital lacerations [9-11]. For the prevention of complication linked with delivery as genital lacerations it is rather to require a qualified health care for a good management [16].

### Therapeutic aspects and prognoses

All patients received uterotonic by intra venous route (oxytocin), intra muscular (oxytocin or methylethergomethrine), and misoprostol(rectal or oral route). As recommended by French National College of gynecology and obstetrics we had used firstly the oxytocin in accordance with allowed dosage. Misoprostol was used in second time after syntocinon if retraction was not obtained in the maximal time of 30 minutes [17]. Regarding treatment of PPH, misoprostol (600 µg sublingual or 1000 µg rectal) could be an alternative to oxytocin (40 IU intravenous) when the latter is not available. Active bleeding is equivalently stopped with misoprostol and with oxytocin [18].

The maneuver like manual placental removal and expelling of the clot from vagina are cited like infections risk factors then we instituted systematically the antibiotic in all cases.

For the important haemorrhage, blood replacement is often required to restore the hemodynamic stage. The majority of the patients had received a blood transfusion (72.5%). This replacement was mainly oriented by the sign of hypovolemic choc and the hemoglobin rate. Ngalbé and Chaouki found respectively a rate of 32% and 55.4% for blood replacement [10,11]. The blood replacement is linked to the hemodynamic stage what explained a variability of the proportion.

Surgical treatment concerned 24 patients (34.8%), mainly the suture of genital lacerations (n=16/24 i.e., 70.8%). We had performed five bilateral ligature of uterine artery in 3 cases (4.3%), one B-Lynch suture (1.4%). When conservative surgery appears to be feasible, the first line technique should be a bilateral distal ligation of the uterine arteries: easy to perform, its morbidity is low and the bleeding can be stopped in more than 80% of cases [19].

One hemostasia hysterectomy was achieved (1.4%). Chaouki11 noted 5.4% of hemostasia hysterectomy. The recourse to hemostasia hysterectomy was the final solution to stop bleeding.

### Maternal prognosis

The post-partum haemorrhage is the main cause of maternal death in the world. We had registered one case maternal death (1.4%) among enrolled patients. This fatality rate is lower than what Ngalbe reported

in his series (30.8%). The maternal death noted in this survey was due to an important blood loss that led to hypovolemic shock [10].

## Conclusion

The post-partum haemorrhage is an obstetrical emergency that can lead to maternal death.

The quick and adequate management of the post-partum haemorrhage by a multidisciplinary health personal respecting the recommended international protocols is required. The reduction of the morbidity and the mortality due to post-partum haemorrhage needs an efficient politic of blood conservation.

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