Maternal near-miss in N'Djamena Mother and Child Hospital, Chad

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BACKGROUND: Maternal near-miss describes a woman who almost died but survived a complication that occurred during pregnancy, childbirth or within the 42 days following pregnancy termination. The prevalence of maternal near-miss is variable around the world. In Chad no previous survey has been performed on maternal near-miss.

OBJECTIVE: To describe the characteristics of patients affected by maternal near-miss in N'Djamena mother and child hospital.

RESULTS: During the 6-month period (January 1st to June 30th 2016) of data collection there were 4,857 live births. The 100 most severe cases of near-miss (2.06 % of all deliveries) were selected. The majority of these patients (96%) were ≤ 35 years old. Seventy six per cent had had 0-3 prenatal consultations. A high proportion of women had been referred (84%). Main morbidities were: haemorrhage (62%) and hypertensive complication (24%) followed by abortion (6%).

CONCLUSION: Maternal near-miss is often recorded in our hospital. Haemorrhage and hypertension are the main pathologies registered.

Key words: *Near-miss, N'Djamena mother and child hospital Chad.*

Introduction

Reduction of maternal morbidity is one of the United Nations Millennium Development Goals [1]. The number of maternal deaths reflects the socioeconomic level and the quality of medical assistance, and is inversely related to the degree of human development. Maternal mortality is unequally distributed among developed and developing countries, and developing countries account for 99% of all known maternal deaths in the world [1,2].

Maternal mortality in Chad is still high and was estimated at 860/100,000 live births in the year 2015[3]. The main causes of maternal deaths were: haemorrhage, hypertension/eclampsia abortion, complications of labour, sepsis and infectious disease [4,5]. Studies on the physiopathology of pregnancy, child-birth and the postpartum period have revealed a wide spectrum of clinical conditions in women, ranging from a healthy pregnancy to the other extreme of maternal death. Severe maternal morbidity forms part of this range of clinical conditions and begins with the occurrence of a complication that could progress to maternal death.

Another extremely critical group that merits particular emphasis concerns cases that are referred to as near-miss which is a more severe condition than severe maternal morbidity [6,7]. In 2009, the World Health Organization (WHO) defined maternal near-miss as a woman who almost died but survived a complication that occurred during pregnancy, childbirth or within the 42 days following pregnancy termination [8]. The prevalence of maternal near-miss is variable around the world. Data from a systematic review of 46 countries demonstrate that the prevalence varies from 0.04 to14.98 %, with higher rates in lower income regions in Africa and Asia [9].

In Chad no previous survey has been performed on maternal near-miss cases. Information on maternal near-miss cases is scarce. Thus, the aim of the current study is to describe the characteristics of maternal near-miss patients.

Patients and Methods

This was a retrospective and descriptive survey of six months from January 1st, 2016 to June 30th, 2016 performed at the maternity of N'Djamena Mother and Child hospital. N'Djamena Mother and Child hospital is a level III hospital located in N'Djamena city, which is surrounded by 4 district hospitals and many health centers. These health facilities often refer patients to N'Djamena Mother and Child hospital for better care.

The 100 most extreme patients who almost died but survived a complication that occurred during pregnancy, childbirth or within the 42 days following pregnancy termination were included. Those with incomplete files were excluded. The data collections were done due to the resuscitation field files, obstetrical files, emergency files and the surgical reports. The data analyses were made by Epi Info 6™.

Table 1. Age and parity of 100 patients

Characteristic Age (Years)	Percentage
15- 20	12
21-25	26
26-30	20
31-35	38
36-43	04
Parity	
Primipara	33
Paucipara	13
Multipara	54

Table 2. Main maternal morbidities of 100 patients

Aetiology	Percentage
Hypertensive complication Severe preeclampsia (n=14) Eclampsia (n=10)	24
Haemorrhages Third bleeding stage (n=20) Abruption placenta (n=10) Clot disorder (n=14) Prævia placenta (n=4) Uterine rupture (n=6) Ruptured ectopic pregnancy(n=8)	62
Abortion complications Septic shock (n=4) Incomplete abortion (n=2)	6
Puerperal infection (n=2)	2
Anaemia (n=2)	2
Total	100

Results

Frequency

During the 6-month period of data collection, 4857 live births, 383 women with severe maternal morbidity, 100 cases of maternal near-miss (2.06 % of all deliveries), and 31 maternal deaths (0.64 % of all deliveries) were identified

Age

The mean age of patients was 27.9 years with a range of 15 to 43 years; the majorities (96%) were 35 years old with 38% aged 31-35 years. The majority of patients (54%) were multipara.

Admission mode, matrimonial status and pregnancy surveillance

Seventy six patients (76%) had had 0-3 prenatal consultations, the median number being 1.6. All the patients were married. The majority (68%) lived in a rural zone; 84% were referred.

The majority of patients (62%) had presented with haemorrhagic complications; 20% with the third bleeding stage; 24% presented with hypertensive complications.

The management of haemorrhage had required blood transfusion in 56 cases (56%), Caesarean section in 28% and obstetric hysterectomy in 10%.

Discussion

In the present study, the frequency of maternal near-miss was low compared to that found in Tananarive [10], Burkina Faso [11] and Nigeria [12] which ranged from 3.9 to 14% of all deliveries. Maternal near-miss occurs in about 1 in 250 deliveries, in developed countries, for an overall rate of 4.38 per 1000 deliveries [13].

A systematic literature review published on this subject indicated a prevalence that ranged from 0.04% to 15% depending on the criteria used to define it [15].

The majority of the 100 cases of maternal near-miss in this study were young women (96% were aged less than 35 years). The median number of prenatal visits attended by the patients affected with maternal near-miss in the present study was in lower than WHO recommendations - i.e. at least four visits [15]. Recent studies showed that women who are older, who have less education, have had fewer prenatal consultations, are without a married partner, or who have had a previous Caesarean section have the greatest risk of near-miss [16-17]. This finding reflects the need to increase the prenatal coverage at primary health care level in Chad. Looking at the two main morbidities, antenatal care should include planning to prevent haemorrhage in the third stage of labour by ensuring access to oxytocic drugs where the women deliver. This is very relevant for women who have had several children and are therefore more likely to bleed. Clotting disorders are often associated with a dead fetus and infection indicating delayed referral.

Antenatal care should detect those who are hypertensive and refer them to a level 3 hospital reducing pre-elampsia, eclampsia and abruption.

A high percentage of patients (84%) in the study had been referred from other centers. This is higher than in Iran [18] where 34% patients had been referred. The high proportion of referred patients in this study can be explained by the fact that N'Djamena Mother and Child hospital is a level 3 hospital in N'Djamena city. The second reason is due to the application of the politics of exemption for medical fees in emergencies in this hospital.

In the present study, the most frequent determinants

of maternal near-miss were haemorrhages (62%), similar to that found previously by Gabkika [4] and Foumsou [5] on the cause of maternal mortality. These findings showed the need for sensitization of the population about haemorrhage. In our country blood products are unavailable in emergency situations. Then, antenatal care should include planning to prevent haemorrhage by screening the risk factor. Hypertensive disorders causes had represented 28% of the near-miss cases. Earlier studies found a similar finding with an important proportion of hypertensive disorders [19].

Conclusion

This study showed that the main pathologies causing the maternal death are the same causes of maternal near-miss. Characteristics of affected patients are that they come from rural areas and have had poor pregnancy surveillance. According to our findings it is clear that for the reduction of maternal near-miss and mortality we need a good sensitization of the population about pregnancy surveillance in remote areas. Planning for delivery and speedy referral as soon as there is any cause for concern must improve.

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Conflict of interest: All authors have declared that there is no conflict of interest.

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Consent: For this survey we got the agreement of the N'Djamena Mother and Child hospital and ethical committee.

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Further reading

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