

International Journal of Clinical Obstetrics and Gynaecology

ISSN (P): 2522-6614
ISSN (E): 2522-6622
© Gynaecology Journal
www.gynaecologyjournal.com
2021; 5(1): 302-305
Received: 05-11-2020
Accepted: 25-12-2020

Foumsou L

¹Department of Gynecology and Obstetrics, University of N'Djamena, Chad
²N'Djamena Mother and Child University Hospital Center, Chad

Aché H

¹Department of Gynecology and Obstetrics, University of N'Djamena, Chad
²National Center Management of Fistula, Chad

Gabkika BM

¹Department of Gynecology and Obstetrics, University of N'Djamena, Chad
²N'Djamena Mother and Child University Hospital Center, Chad

Saleh AS

¹Department of Gynecology and Obstetrics, University of N'Djamena, Chad
²N'Djamena Mother and Child University Hospital Center, Chad

Damthéou S

¹Department of Gynecology and Obstetrics, University of N'Djamena, Chad
²N'Djamena Mother and Child University Hospital Center, Chad

Sepou A

Department of Gynecology and Obstetrics, University of Bangui, Central African Republic, Chad

Corresponding Author:

Foumsou L

¹Department of Gynecology and Obstetrics, University of N'Djamena, Chad
²N'Djamena Mother and Child University Hospital Center, Chad

Incidence and causes of maternal near-miss in N'Djamena mother and child university hospital center, chad

Foumsou L, Aché H, Gabkika BM, Saleh AS, Damthéou S and Sepou A

DOI: <https://doi.org/10.33545/gynae.2021.v5.i1e.831>

Abstract

Introduction: A maternal near miss is defined by WHO as a woman who nearly died but survived a complication that occurred during pregnancy, childbirth or within 42 days of termination of pregnancy. Maternal morbidities occur more frequently than maternal deaths, maternal near miss was suggested as a more useful indicator for the evaluation and improvement of maternal health services than the maternal death. The prevalence of maternal near - miss is variable around the world.. The aim of this study was to analyze the quality of care had saved severe obstetric complications in N'Djamena Mother and Child University Hospital Center.

Patients and Method: This was a prospective and descriptive survey of one year from January 1st to December 31st, 2019 performed at the maternity of N'Djamena Mother and Child University Hospital Center on incidence and causes of maternal near - miss. All pregnant, parturient or delivered had presented a severe obstetric complication and agreed participate in the study was included. The analysis was made using the SPSS 18.0.

Results: We recorded 248 maternal near - miss cases among 8.124 deliveries giving a frequency of 3.1%. The mean age was 26.5 ± 1.8 years. The majority of patients (61.3%) were multipara, uneducated (44.7%), referred in 75.4% cases and practiced one at two antenatal care in 43%. Main morbidities were: haemorrhage (66.1%) and hypertensive complication (17%) followed by abortion complications (7.7%). In 54% cases, treatment was being introduced within 30 minutes of diagnosis. Patients were satisfied with management in 84% cases.

Conclusion: Maternal near - miss is frequent in our hospital. Haemorrhage and hypertension are the main pathologies registered. Its reduction impose improvement the quality of care.

Keywords: Near miss, quality of care, maternal death, N'Djamena mother and child university hospital center, Chad

Introduction

A maternal near-miss event or severe acute maternal morbidity is defined as: A maternal near miss is defined as a woman who nearly died but survived a complication that occurred during pregnancy, childbirth or within 42 days after termination of pregnancy ^[1, 2]. The World Health Organization (WHO) criteria for identifying maternal near miss cases are based dysfunction or failure of any vital organ (circulatory, respiratory, cardiac, renal, hepatic, central nervous, metabolic and haematological dysfunctions) and the resulting complications. A block of clinical, laboratory and management-related markers was developed to enable the identification of severe cases ^[3]. A block of clinical, laboratory and management-related markers was developed to enable the identification of severe cases ^[4]. Quality of care during childbirth in health facilities is reflected in the availability of physical infrastructure, supplies, management, human resources along with the knowledge, skills and capacity to deal with pregnancy and childbirth ^[3]. Maternal morbidities occur more frequently than maternal deaths, maternal near miss was suggested as a more useful indicator for the evaluation and improvement of maternal health services than the maternal death. Maternal mortality is unequally distributed among developed and developing countries and developing countries account for 99% of all known maternal deaths in the world ^[5]. Maternal mortality in Chad is still high and was estimated at 860/100,000 live births in the year 2015 ^[6]. The main causes of maternal deaths were haemorrhage, hypertension/eclampsia abortion, complications of labour, sepsis and infectious disease ^[2].

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 to 14.98 %,

with higher rates in lower income regions in Africa and Asia [1, 3, 5]. In Chad, Few studies have been devoted on maternal near-miss cases. The aim of this study is to improve the quality of obstetric care for better management of serious obstetric complications.

Patients and Methods

This was a prospective and descriptive survey of one year from January 1st to December 31st, 2019 achieved at N'Djamena Mother and Child University Hospital Center about incidence and causes of maternal near - miss. N'Djamena Mother and Child University Hospital Center is a third level hospital in N'Djamena city that helps to take care of referred patients coming from surrounding hospitals.

The population of survey was constituted of patients that had given birth at the maternity of N'Djamena Mother and Child University Hospital Center or referred from another hospital had presented severe obstetric complication. Studied variables were:

age, parity, number of antenatal care, mode of admission, causes of near – miss, management, time between diagnosis and management, satisfaction of patients and family. All patient having developed severe obstetric complication had survived and having agreed to participate in the survey was included. Not every patient developed obstetric complication, developed severe obstetric complication and died, having refused to participate in the survey was excluded. Data were analyzed using SPSS18.0.

Results

Frequency

During survey period, we recorded 248 maternal near - miss cases among 8.124 deliveries giving a frequency of 3.1% or 31 per 1,000 live births.

Sociodemographic characteristics

Table 1: Sociodemographic characteristics of patients

Sociodemographic characteristics	N	%
Age (years)		
15 – 19	18	7.3
20 – 24	68	27.4
25 – 29	89	35.8
30 – 34	43	17.4
35 – 39	21	8.5
40 – 44	6	2.4
45 – 49	3	1.2
Total	248	100
Schooling		
Uneducated	110	44.7
Primary	84	34
Secondary	39	15.3
Superior	15	6
Total	248	100
Parity		
Primipara	62	25
Paucipara	34	13.7
Multipara	57	23
High multipara	95	38.3
Total	248	100

The mean age of patients was 26.5 years \pm 1.8 with a range of 15 to 46 years. The age group from 25 to 29 years was more represented with 35.8%. Forty four percent patients (44.7%) were uneducated. The majority of patients (61.3%) were multipara and the average parity was 4.6.

Admission mode and antennal care

In this series, patients were referred in 187 cases, or 75.4%.

Amongst these reported serious obstetric complications, 85.9% came from peripheral health centers. Patients had no antenatal care in 30% of cases, one to two antenatal care in 43% cases, three antenatal care in 18 cases and four or more 9% cases.

Etiologies of severe obstetric complications

Table 2: Etiologies of severe obstetric complications

Etiologies	N	%
Hypertensive Complications	42	17
Severe preeclampsia	14	5.7
Eclampsia	28	11.3
Haemorrhage	164	66.1
Abruption placenta	31	12.9
Prævia placenta	18	7.3
Uterine rupture	37	15
Ruptured ectopic pregnancy	12	5
Third bleeding stage	52	20.2
Clot disorder	14	5.7
Abortion complications	19	7.7

Septic shock	12	5
Incomplete abortion	7	2.7
Puerperal infection	12	4.8
Severe anaemia	11	4.4
Total	248	100

Etiologies of maternal near – miss were dominated by hemorrhagic complications in 66.1 cases and hypertensive complications (17%). The major hemorrhagic complication was

the third bleeding stage that represented 20.2 cases.

Management of maternal near – miss

Table 3: Management of maternal near-miss cases

Type of management	n	%
Anti – hypertensive	42	17
Anticonvulsant	42	17
Caesarean section	65	26.2
Uterotonic	64	25.8
Antibiotics	76	30.6
Blood transfusion	137	55.2
Laparotomy	52	21
Obstetric hysterectomy	18	7.2
Salpingectomy	12	4.8

The management of maternal near - miss was provided by blood transfusion in 55.2 cases, caesarean section in 26.2% and obstetric hysterectomy in 7.2% cases.

Time taken between diagnosis and management

In 54% cases, treatment was being introduced within 30 minutes of diagnosis, between 30 minutes and 1 hour in 31% and 15% after 1 hour time. The delay in the management was related to the unavailability of blood products or the refusal of the operating act by the family.

Patient and family satisfaction

Patients were satisfied with management (staff behavior, structure, care provided) in 84% cases and family in 81% cases. Unsatisfied patients (16%) reported bad behavior of personnel and delay in administration of care.

Discussion

We reported a frequency of 3.1 of maternal near miss. 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 [1]. This frequency is comparable to other African series which report rates varying from 3.9% to 14% [7, 8, 9, 10, 11, 12, 13].

Age is one of the major risk factors for obstetric complications [2]. The average age was 26.5 years \pm 1.8 years with extremes ranging from 16 and 43 years. This mean age is similar to those of Itoua and al. [7] in 2008 in Brazzaville, Congo and Rabenasolo and al. [8] in 2006 in Antananarivo, Madagascar, which report 26.5 and 27.6 years of average age respectively. This could be explained by the precocity of sexual intercourse and early marriage in our regions.

The educational level was dominated by not schooled or uneducated with 38 cases, or 44.7%. This rate is comparable to that reported by Sepou and al. [14] in 2000 in Bangui, Central African Republic, that obtains 43.6% uneducated. This result is contrary to that of Itoua and al [7] who find 51.2% secondary level patients. This difference could be explained in general by the national level educational and in particular by the policy of each country for the promotion of girls' education.

Multiparous were most represented in this series with 61.3%

cases. This finding corroborates those of Rabenasolo and al. [8] in 2006 and Gabkika and al. [15] which report a predominance severe maternal morbidities in multiparous of 46.72% and 54% respectively. Multiparity is a risk factor of uterine atony responsible of postpartum hemorrhage, one of the main causes of severe maternal morbidities.

Patients were referred in 187 cases, or 75.4%. Amongst these reported severe obstetric complications, 85.9% cases came from peripheral health centers. This result is superimposed on that of Lamine [16] in 2012 in Bamako, Mali, Itoua and al. [7] and Gabkika and al. [15] which obtain 87.62%, 60% and 84% cases. This would be justified by the fact that in Africa, the organization of health systems is similar concerning the health pyramid from the periphery to the reference center, health evacuations remain a public health problem in our regions and there is a problem of reference and counter - reference.

In this series, the majority of patients had a poorly followed pregnancy (64.7% cases). This rate is found in the range of African literature data [7, 9, 13, 17, 18] which highlights a predominance of severe obstetric complications of the order of 57.9% to 85.5%. This could be explained by the low level of education that does not allow pregnant women to better understand the benefits or benefits of prenatal consultation and the low socio-economic level that limits access to care. 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.

Etiologies of maternal near – miss were dominated by hemorrhagic complications in 66.1 cases and hypertensive complications (17%). the major hemorrhagic complication was the third bleeding stage that represented 20.2 cases. Several authors stress that postpartum hemorrhage is the main cause of severe obstetric morbidities [7, 8, 9, 11, 15, 17, 18, 19, 20, 21]. The prevention of postpartum hemorrhage by the active management of the third stage of labour is essential to reduce the frequency of this hemorrhage in our countries where blood products are often unavailable.

Blood transfusion was performed in 55.2% cases. This finding corroborates those of Gabkika and al. [15], Prual *et al* [20], Hounkpatin *et al*. [22] who report a blood transfusion among

maternal near miss respectively of 56%, 42.9% and 47.6% of cases. These various results could indicate that anemia is one of the important indicators of severe obstetric complications.

Obstetric treatment was dominated by uterine revision in 20% of cases. These results show the interest of the uterine revision as an emergency obstetric gesture in the management of postpartum hemorrhages, since the primary cause of hemorrhage is uterine atony by retention of placental debris or blood clots.

Surgical treatment was performed in 74.11% of cases with 37.6% caesarian section. This caesarean section rate is within the range of African literature data that report a caesarean section rate varying from 20% to 68% [7, 15, 17, 22]. These results show that the management of severe obstetric complications cases requires a functional operating room and that caesarean section is the most common procedure in obstetrics.

Conclusion

The study shows that severe obstetric morbidities are common in our regions. They occur among young women, pauciparous, uneducated, not followed and low socio-economic.

These complications most observed during postpartum are dominated by hemorrhage. Their multidisciplinary management requires the combination of many medical, obstetrical and surgical means. Reduced frequency of severe obstetric complications require quality antenatal care, good monitoring of labour and immediate postpartum.

Concerted action must be taken to vigorously combat poverty, promote health education and improve access to quality emergency obstetric care with the aim of reducing these morbidities that lead to maternal deaths.

References

- World Health Organization. Beyond the numbers: reviewing maternal deaths and complications to make pregnancy safer. WHO, Geneva 2004, 164p.
- De Brouwere V, Zinnen V, Delvaux T, Leké R. Guidelines and tools for organizing and conducting maternal death reviews. *International Journal of Gynecology and Obstetrics* 2014;127:S21-S23.
- World Health Organization. Evaluating the quality of care for severe pregnancy complications: the WHO near-miss approach for maternal health. WHO, Geneva 2011,34p.
- Say L, Souza JP, Pattinson RC. WHO working group on Maternal Mortality and Morbidity classifications: Maternal near-miss-towards a standard tool for monitoring quality of maternal healthcare. *Best Pract Res Clin Obstet Gynaecol* 2009;23:287-296.
- Sousa MH, Cecatti JG, Hardy EE, Serruy SJ. Severe maternal morbidity (near-miss) as a sentinel event of maternal death. An attempt to use routine data for surveillance. *Reprod Health* 2008;5:16-9.
- National Institute for Statistics of Economic and Demographic Studies. (INSEED). Demographic and Health Survey III (EDST3). Ministry of Planning and Cooperation 2015, 32p.
- Itoua C, Ockoro-Gokaba T, Mbemba-Moutounou GM, Gombet-Koulimaya CE, Mokoko JC, Mbongo JA *et al.* Near miss in Obstetrics: epidemiology and materno – fetal prognosis in Brazzaville University Hospital Center. *SAGO Abstracts Journal*, Bamako 2008,178.
- Rabenasolo H, Raobijaona H, Rasolofondraibe A. Near-miss: épidémiologie et prise en charge de 100 cas vus au CHU de Tananarive. *Méd Afr Noire* 2006;53(11):624-629.
- Mayi-Tsonga S, Meye JF, Tagne A, Ndombi I, Diallo T, Oksana L *et al.* Audit of severe maternal morbidity (near miss) in Gabon. *Clinics in Mother and Child Health* 2007;4(2):717-722.
- Saizonou J, Godin I, Ouendo EM, Zerbo R, Dujardin B. The quality of management of obstetric emergencies in maternity reference in Benin: The point of view of «near miss» and their expectations. *Tropical Medicine and International Health* 2006;11(5):72-680.
- Randriatsarafara FM, Tomeba FCM, Rafamatanantsoa JF, Ranjalahy RJ, Andrianampanalarivo RH, Randrianarimanana VD. Obstetric complications and near miss views at the University Hospital of Gynaecology and Obstetrics of Befelatanana. *Malgache J Gynaecol Obstet* 2015;1:12-16.
- Elena Prada, Akinrinola Bankole, Olufemi T. Oladapo, Olutosin Awolude A, Isaac Adewole F *et al.* Maternal Near-Miss due to Unsafe Abortion and Associated Short-Term Health and Socio-Economic Consequences in Nigeria. *Afr J Reprod Health* 2015;19(2):52-62.
- Olufemi Oladapo T, Adewale Sule-Odu O, Adetola Olatunji O, Olusoji Daniel J. Near-miss" obstetric events and maternal deaths in Sagamu, Nigeria: a retrospective study. *Reprod Health* 2005;2:9 doi: 10.1186/1742-4755-2-9.
- Sepou A, Yanza MC, Nguembi E, Bangamingo JP, Nali MN. Prenatal care in a semi urban area in Central Africa Republic: frequency, factors influencing attendance, Mother and neonatal prognosis. *Med Trop* 2000;60(2):257-261.
- Gabkika Bray Madoue, Saleh Abdelsalam, Doumbia Madjouma Badara Aliou, Adoum Offi, Sabre Emile, Ehdjolbo Pallai *et al.* Maternal near-miss in N'Djamena Mother and Child Hospital, Chad. *South Sudan Medical Journal* 2017;10(2):28-31.
- Lamine GC. Audit of Near-Miss at the reference health center of the commune VI of the district of Bamako [thesis: Med]. Bamako: Bamako University 2012.
- Ayele B, Amenu D, Gurmessa A. Prevalence of Maternal Near Miss and Maternal Death in Atat Hospital, Ethiopia. *J Womens Health, Issues Care* 2014;3(6):5.
- Ouattara A, Ouédraogo S, Lankoandé B, Coulibaly N, Kain DP, Tougma SA *et al.* Causes of Maternal Mortality According to Reports of Maternal Death Audits in the University Teaching Hospital Bogodogo (UTH-B) from January to December 2017. *Open Journal of Obstetrics and Gynecology* 2018;8:1345-1353.
- Iwuh IA, Fawcus S, Schoeman L. Maternal near-miss audit in the Metro West maternity service, Cape Town, South Africa: A retrospective observational study. *SAMJ* 2018;108(3):171-175.
- Pruhal A, Bouvier-Colle MH, Bernis L, Breart G. Severe maternal morbidity from direct obstetric causes in West Africa: incidence and case fatality rates. *Bulletin of the World Health Organization* 2000;78(5):593-602.
- Reena RP, Radha KR. Factors Associated with Maternal Near - Miss: A Study from Kerala. *Indian Journal of Public Health*. *Indian Journal of Public Health* 2018;62(1):58-60.
- Hounkpatin B, Obossou AAA, Aguemon CT, Hounkponou FN, Aboubakar M, Sehluan C *et al.* The Impact of Audits of Maternal Deaths and Near Miss at University Hospital of Mother and Child Lagoon (Benin). *Clinics Mother Child Health* 2016;13:218. doi:10.4172/2090-7214.1000218