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Evaluation of Obstetric Emergencies at Gao Hospital in Mali

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Abstract

The aim was to evaluate obstetric emergencies at the Gao hospital. **Materials and Methods:** This was a descriptive, cross-sectional, analytical, prospective study from January 1 to December 31, 2015, *i.e.* a period of 12 months. **Results:** During our study period, we registered 1853 patients among whom were 88 cases of obstetric emergencies, *i.e.* a frequency of 4.75%. The age group between 15 and 19 years old was the most concerned. Obstetric emergencies are dominated by: placenta previa 20.45%, retroplacental hematoma (RPH) 12.5%, fetal distress (FAS) 12.5%, postpartum hemorrhage (PPH) due to uterine atony 13.63%. Caesarean section was the most used mode of delivery with 70.45%. The maternal death rate was 6.82%. The cause of maternal death was haemorrhage. We say that obstetric emergencies are a public health problem in the world. The conditions of evacuations and the unfavorable socio-economic conditions are the main problems in our context. **Conclusion:** Urgent care and an improvement in the standard of living of the population are necessary to reduce fetal-maternal mortality.

Keywords

Evacuation, Emergency, Obstetrics, Obstetrical Emergencies, References

1. Introduction

Obstetric emergencies are multiple causes of maternal and neonatal death and are expressed by various clinical pictures that have in common the therapeutic urgency [1]. They have always posed public health problems in the world, particularly in developing countries, both in terms of their scale and their management. Every minute a woman dies from complications of pregnancy, childbirth and the postpartum period. 99% of these deaths occur in developing countries [1]. Maternal mortality can be controlled if pregnancy complications are managed properly and in a timely manner. The solution to the problem of mortality is also of an organizational nature [1]. The certainty that a natural birth is possible and safe for the mother and the fetus is never absolute [2]. In 1978, for example, in Alma Ata, developing countries opted for a pyramid-type system of health care to provide basic and local health care to the population. Linking the different levels of care has been an essential element since the beginning of primary health care (PHC). The Referral/Evacuation system has been designed to complement the principle of PHC which is to treat patients at a first level of care as close as possible to their home with all the necessary competence [3]. Thus, the following levels of care have been identified according to the health pyramid in Mali: the first level of contact of the population with health services is the community health center (CS Com), the second level of contact or first level of Reference is the Reference Health Center (CS Ref), the third level of contact is the Regional and National Hospitals or second level of health reference [1]. The organisation of the Referral/Evacuation system guarantees the cohesion of the health system. Thus, the present work proposes to evaluate the system of referrals/evacuations of obstetric emergencies at the Gao hospital by setting the following objectives.

2. Objectives

The aim was to evaluate the system of referrals/evacuations of obstetric emergencies at the Gao hospital.

3. Materials and Methods

It was a descriptive, cross-sectional, prospective analytical study from January 1 to December 31, 2015, *i.e.* a period of 12 months. These were all patients admitted to the delivery room. Any parturient referred to an emergency for an obstetric problem was included. Women evacuated for abortion; Women evacuated for GEU; Women who came on their own were excluded. To conduct this study, we analyzed each case taking into account sociodemographic, clinical, paraclinical and therapeutic data and the evolution during hospitalization. To do this, we have drawn up a survey sheet in the form of a questionnaire. Data were collected from: Questionnaires serving as a survey sheet, Patient files, Operative report register, Hospitalization registers, Mother's health record, Evacuation supports: reference/evacuation sheet, partograph, Emergency Obstetric and Neonatal Care Registry (SONU). The data entry was carried out using the Epi info version 7 software.

The data were analyzed on the Epi info version 7 software. The statistical test used was chi2 with a significance level of p < 5% [4] [5].

4. Results

4.1. Epidemiological Aspects

We recorded 1853 women including 88 referrals/evacuations, *i.e.* a frequency of 4.75%. The age group between 15 - 19 years old was the most represented with a frequency of 39.77%. Housewives accounted for 90.90% and they were sonrhaïs in 60.23%. Most of them came from community health centers, *i.e.* 78.75%. The cart was the most used means of transport, with a rate of 45.45%. These epidemiological aspects are presented in **Table 1**.

Table 1. Epidemiological aspects of obstetric emergencies at Gao hospital from January 1 to December 31, 2015 in Mali.

Age	Staff	Percentage (%)
Under 15 years of age	1	1.14
15 to 19 years old	**35**	**39.77**
20 to 25 years	24	27.27
More than 25 years	28	31.82
Profession	**Staff**	**Percentage (%)**
Domestic help	4	4.55
Housewife	**80**	**90.90**
Official	1	1.15
Merchant	3	3.40
Ethnic group	**Staff**	**Percentage (%)**
Arabic	2	2.27
Bellah	30	34.09
Fulani	3	3.41
Sonrhai	**53**	**60.23**
Home Health Center	**Staff**	**Percentage (%)**
CSCOM	**63**	**78.75**
CSREF	17	21.25
Transport	**Staff**	**Percentage (%)**
Cart	**40**	**45.45**
Foot	8	9.09
Car	30	34.09
Motorcycle	10	11.36
Marital status	**Staff**	**Percentage (%)**
Bachelor	10	11.36
Divorcee	1	1.14
Bride	**75**	**85.23**
Cohabitation	1	1.14
Widow	**1**	**1.14**

4.2. Clinical Aspects

Nulliparous women are the most represented with a frequency of 27.27%. The scarred uterus was the most represented with 6.81% and 52.27% of parturients did not have any ANC. Term parturients were the most represented with a frequency of 85.23% and 62.50% of our women were referred or evacuated by nurses and 44.32% of our women were referred or evacuated without an accompanying health worker. 56.82% of parturients did not have a partograph on admission. HRP was the most represented motif with a frequency of 22.72%. Placenta previa was the most common diagnosis with a frequency of 20.45%. In 70.45%; There was a concordance between the reference reason and the diagnosis made. These clinical aspects are summarized in Table 2 and Table 3.

Table 2. Clinical aspects of obstetric emergencies at Gao hospital from January 1 to December 31, 2015 in Mali.

Gesture	Staff	Percentage (%)
Primigravida (1)	**32**	**36.37**
Paucigeste (2 - 3)	24	27.27
Multi-Gesture (4 - 5)	9	10.23
Large Multi-Gesture (>6)	23	26.14
Parity	**Staff**	**Percentage (%)**
Nulliparous (0)	**24**	**27.27**
Primariparous (1)	18	20.45
Pauciparous (2 - 3)	13	14.77
Multipar (4 - 5)	12	13.64
Large multiparous (>6 plus)	21	23.86
Surgical history	**Staff**	**Percentage (%)**
Caesarean section	6	6.81
GEU	1	1.14
Cystectomy	2	2.27
No history	**79**	**89.77**
Number of ANCs	**Staff**	**Percentage (%)**
0	**46**	**52.27**
1	28	31.82
2	11	12.50
≥3	3	3.41
Gestational age	**Staff**	**Percentage (%)**
Preterm	8	9.09
Term	**75**	**85.23**
Post-term	5	5.68
Presence of partograph	**Staff**	**Percentage (%)**
No	**50**	**56.82**
Yes	**38**	**43.18**

Table 3. Clinical aspects of obstetric emergencies at the Gao hospital from January 1 to December 31, 2015 in Mali.

Reasons for referral/evacuation	Staff	Percentage (%)
Feto-pelvic disproportion	12	13.64
Dynamic dystocia	8	9.09
Postpartum hemorrhage	15	17.04
Retroplacental hematoma	**20**	**22.72**
Placenta preavia (PP)	9	10.22
Pre-eclampsia/eclampsia	5	5.68
Cord prolapse	5	5.68
Uterine rupture (RU)	3	3.41
Acute fetal distress (PP)	11	12.50
Diagnosis on admission	**Staff**	**Percentage (%)**
Fetopelvic disproportion	9	10.23
Dynamic dystocia	6	6.81
Mechanical dystocia	5	5.68
Eclampsia	3	3.41
Postpartum A hemorrhage (Atonia hemorrhage)	12	13.63
Postpartum B hemorrhage (Soft tissue tear)	3	3.41
HRP	11	12.50
PP	**18**	**20.45**
pre-eclampsia	2	2.27
Prolapse of the A cord (clapper)	2	2.27
Cord B prolapse (non-flapping)	3	3.41
RU	3	3.41
SFA	11	12.50
Concordance between reasons	**Staff**	**Percentage (%)**
No	26	29.55
Yes	**62**	**70.45**

4.3. Therapeutic and Prognostic Aspects

The majority of our patients, 70.45%, were caesarean section and 84.10% of children were alive. A little more than half of the workforce, *i.e.* 51.14% of parturients, took more than 2 hours to be evacuated. The care was provided in less than 1 hour for 70.45% of our parturients and 36.37% had traveled more than 45km. The duration of hospitalization of 3 days was the most represented with a frequency of 50% and 4.54% of our women had anemia and 93.18 of our women had no complications. The maternal mortality ratio was 6.82%. These therapeutic and prognostic aspects are presented in Table 4 and Table 5.

Table 4. The therapeutic and prognostic aspects of obstetric emergencies at the Gao hospital from January 1 to December 31, 2015 in Mali.

Type of delivery	Staff	Percentage (%)
Low Lane	26	29.55
Caesarean section	**62**	**70.45**
Pregnancy outcome	**Staff**	**Percentage (%)**
Living child	**74**	**84.10**
Fresh stillbirth	10	11.36
Macerated stillbirth	4	4.54
Estimated time spent at the health centre	**Staff**	**Percentage (%)**
Acceptable (less than 1 hour)	18	20.46
Long (between 1 and 2 hours)	25	28.40
Too long (more than 2 hours)	**45**	**51.14**

Table 5. The therapeutic and prognostic aspects of obstetric emergencies at the Gao hospital from January 1 to December 31, 2015 in Mali.

Estimated time spent at the health centre	Staff	Percentage (%)
Acceptable (less than 1 hour)	62	70.45
Long (between 1 and 2 hours)	17	19.32
Too long (more than 2 hours)	9	10.23
Estimated distance traveled	**Staff**	**Percentage (%)**
≤5 km	18	20.45
6 - 20 km	13	14.77
21 - 45 km	25	28.40
>45 km	**32**	**36.37**
Number of days in hospital	**Staff**	**Percentage (%)**
1	16	18.18
2	13	14.77
3	**44**	**50.00**
≥4	15	17.05
Post-operative complications	**Staff**	**Percentage (%)**
Anaemia	4	4.54
Eclampsia	1	1.13
Suppuration	1	1.13
No	82	93.18
Mother's condition at discharge	**Staff**	**Percentage (%)**
Deceased	6	6.82
Living	82	93.18
Condition of the newborn at discharge	**Staff**	**Percentage (%)**
Died within 24 hours	2	2.27
Stillborn	14	15.91
Alive	**72**	**81.82**

5. Discussion

5.1. Epidemiological Aspects

The frequency of obstetric emergencies was 4.75% out of a total of 1853 patients registered in 12 months. This frequency can be explained by the size of its population of 681,872 inhabitants on the one hand and by the size of its health area (40 health areas) on the other. Our frequency is slightly lower than those of Sidibe D. [6]: 17.15% and Dougnon F. [7]: 28.5%. This gradual decrease in emergencies is evidence of an improvement in socio-health infrastructure, including the creation of new community health centres, the fairly correct application of the referral/evacuation system at the local level, and capacity building to reduce maternal-fetal mortality. The young age of the majority of our patients could be related to early marriage leading to the occurrence of early pregnancies in a context of physical immaturity, thus confirming the progressive increase in mechanical dystocia. They were married in 85.23% of cases and 90.90% were housewives. The majority of our women marry early.

5.2. Clinical Aspects

Nulliparous women represent 27.27% in our study. Large multiparous women represent 23.86%. The risk in these women is due to the fragility of the uterus following multiple and close pregnancies [8]. Our rate is close to that of SIDIBE D. [6]: 23.71%, but higher than that of Thiero M. [9]: 11.9%. In 52.27% of cases, women had had a prenatal consultation and 3.41% had had more than 4 antenatal consultations. This rate is lower than that of Coulibaly M [10] who found a rate of 52.9%. Lack of monitoring during pregnancy and poor quality of ANCs are thought to be a clear risk factor during pregnancy and delivery. The distance traveled varies from 2 to 90 km in our study. This result is lower than that found by Macalou B. [11] whose extremes are from 2 to 250 km but higher than the Alamine rate [12] whose extremes are from 1 to 20 km. Our result is in line with the status of a reference health center. The cart is the most frequently used means 45.45%. This rate is slightly lower than that of Coulibaly M [10] 74% but significantly higher than the levels of Alamine [12] (0.8%) and Macalou B [11] (14.71%). This result can be explained by the efforts made by the supervisory authorities to provide reference structures with logistical resources: carts. The average time is 2 hours with extremes ranging from less than 1 hour to more than 2 hours. This result is comparable to that of Diarra N. [13] whose extremes are less than 1 hour and more than 4 hours. We are seeing an increase in transport time due to the unavailability of ambulances. Among the diagnoses retained after the examination in the delivery room, the main ones are: placenta previa: 20.45%; hemorrhage due to uterine atony: 13.63%; These results are different from those found by Diarra N. [13] whose main diagnoses were: stationary dilation: 15.10%; acute fetal distress 7.92%; and also those found by Thiero [9] whose diagnoses were: Vicious presentations 14.41%; Feto-pelvic disproportion14.41%; Bone dystocia 13.80%. After the diagnoses were made, we focused on one element to assess the maternal-

fetal prognosis, namely the delay in the evacuations. Uterine rupture accounted for 3.41% in our study. Our frequency is higher than those of Sidibe D. [6] and Samake Y. [14] with 0.8% and 0.68% respectively. It is lower than that of Traore Y. [15] who found a frequency of 3.8%. Uterine rupture is the consequence of dystocia that is not well known or neglected. Uterine rupture is also due to the fragility of the uterus, especially in large multiparous Merger R. [8]. During our study, the frequency of eclampsia was 3.41%. Our frequency is higher than that of Hyjazi *et al.* [16]: 1.07% and Diarra N. *et al.* [13]: 1.8%. The frequency of retroplacental hematoma was 12.50% in our study.

5.3. Therapeutic and Prognostic Aspects

The therapeutic approach depends on the diagnosis made and the general condition of the patient. We used: free caesarean section in 70, 45%; the low way in 29.55%; These results are different from those reported by Thiero [9], *i.e.*: caesarean section in 50%; vaginal delivery in 42.50%; of those of Alamine [12], *i.e.*: caesarean section in 25.30%, vaginal delivery in 73.10%.

Maternal-fetal prognosis: The general condition of some evacuees is aggravated by the delay in care and the absence of a mini blood bank. These factors increase morbidity and mortality in the short term. During the study period, we recorded 93.18% of simple postpartum compared to 6.82% of maternal mortality. Complications are mainly represented by: anemia; endometritis, eclampsia, suppuration. **The fetal prognosis:** It remains satisfactory with 81.82% of newborns in good condition at discharge despite the absence of a neonatology department, thanks to the efforts made by all the teams to manage cases of complications requiring urgent intervention. Manual resuscitation maneuvers make it possible in the majority of cases to correct minor respiratory distress.

6. Conclusion

Obstetric emergencies are a public health problem worldwide. Evacuation conditions and unfavourable socio-economic conditions are the main problems. Urgent care and an improvement in the standard of living of the population are necessary to reduce maternal and neonatal mortality.

Conflicts of Interest

The authors declare no conflicts of interest regarding the publication of this paper.

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