

Problem of Obstetrical Evacuations: About 630 Cases Collected at the Maternity of Bouake University Hospital

Lydie Estelle Djanhan¹, Jean Marc Dia^{2*}, Messou Michelle Menin¹, Yaya Samaké¹,
Claussen M'broh¹, Kouadio Narcisse Kouadio¹, Kouamé Privat Kouakou¹, Yacouba Doumbia¹

¹Department of Gynecology and Obstetrics, University and Hospital Center of Bouaké (CHUB), Bouaké, Côte d'Ivoire

²Department of Gynecology and Obstetrics, University and Hospital Center of Treichville (CHUT), Abidjan, Côte d'Ivoire

Email: *jmlamedia@yahoo.fr

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Abstract

Objective: To improve the care of evacuees at the maternity of the University Hospital Center of Bouaké (CHUB). **Methodology:** This is a cross-sectional and descriptive study over a period of three months that covered 630 cases collected at the Maternity of the university Hospital of Bouaké. **Results:** Obstetric evacuation accounted for 42.5% of admissions to the delivery room. Patients under 20 years and over 34 years of age respectively represented 21% and 13.5% of the total. 62.7% of evacuees were not educated and 84.9% had low economic level. Nulliparous and multiparous women accounted for 54.9% of the patients and 88% had mean prenatal follow up. The evacuations were decided by midwives (91.3%), without previous adapted treatment (79.4%), with a badly filled evacuation card (49.7%) and no partograph. The taxi was the most used means of transportation (75.2%) and most evacuees took less than one hour to access the referral center (61.4%). The reasons for evacuation are mainly dominated by mechanical obstructions (34.8%); on admission the evacuees with no real reference reason were 243 (38.6%) and the diagnosis was inconsistent in 43% of cases. The majority of evacuated women delivered vaginally (69.4%). Most newborns had a satisfactory state at the 5th minute of life (79.4%) and we noted 54 cases (08.3%) of neonatal deaths. 7.8% of evacuees had a complication dominated by postpartum anemia (51.1%); we had lamented 17 cases (2.7%) of maternal deaths among evacuees, attributable to delivery haemorrhage (47.1%) and eclampsia (23.5%). **Conclusion:** A better organization of the reference and an equipment of the peripheral health structures would improve the prognosis of the evacuees.

Keywords

Obstetric Emergencies, Evacuations, Reference, Maternal Mortality

1. Introduction

Maternal mortality is a major public health problem around the world and its assessment shows high numbers, especially in sub-Saharan Africa [1].

According to Adamson Peter [2], 15% of pregnancies don't benefit from modern obstetric care, and to reduce maternal mortality, they should be identified and managed as soon as possible.

For this, an important role is given to the transfer of women to specialized centers, hence the interest of evacuation.

Fournier estimated that two years after the implementation of the referral/evacuation system, very positive effects are obtained with the improvement of basic emergency obstetric and neonatal care coverage, with a decrease in mortality [3].

Several studies on the system of obstetric evacuation have been made in Africa. In Cote d'Ivoire the works on this theme are not recent. We conducted this study whose objective was to carry out a comprehensive evaluation of obstetric evacuation in a reference health center. In this case the CHUB was a referral center for patients from different cities in emergency. This was in order to improve the care of evacuees in the gynecology-obstetrics department.

2. Methodology

This was a transversal and descriptive study conducted over a three-month period from February 1, 2006 to April 30, 2016 on patients discharged from peripheral centers in our department for obstetric emergency.

We included in the study all parturients and recent births (48 hours postpartum) with an evacuation record. Were excluded from the study, parturients and recent births without evacuation records and those with incomplete records. Thus 630 patient met our inclusion criteria,

We studied the following parameters: the frequency of the evacuations, the socio-demographic and clinical characteristics of the evacuees, the data of the evacuation form, the evacuation conditions, the maternal-fetal prognosis.

Data collection was done using a survey questionnaire, delivery records and obstetric emergencies, evacuees medical records and evacuation support, which is the evacuation record.

The data were analyzed using Epi Info 7, Excel and Word software.

Framework of the study

The University Hospital of Bouaké is the only center of reference of the second largest city of the Ivory Coast. It covers a population of 3.5 million.

The patients evacuated in our department come from three different zones. Those coming from:

- the city of Bouaké travel less than 5 kilometers.
- the region of Gbèkè (in the surrounding areas of Bouaké) travel between 5 - 75 kilometers.
- the other regions than the region of Gbèkè travel more than 75 kilometers.

In our department, we practice an average of 6000 deliveries a year and 13,000 consultations including 9000 prenatal consultations

3. Results

3.1. The Frequency of Obstetric Evacuation

During the study period we recorded 1484 obstetric emergencies, of which 1101 were evacuees from the peripheral centers, a frequency of 74.2%.

Of these 1101 evacuees, 630 met our inclusion criteria, a frequency of 42.5%.

3.2. Socio-Demographic Characteristics

In 84.9% the socio-economic level was judged low (**Table 1**).

Table 1. Distribution of patients according to sociodemographic data (N = 630).

Socio-demographic characteristics	population	Percentage (%)
Age (years)		
<20	132	21
20 - 24	156	24.8
25 - 29	138	21.9
30 - 34	119	18.9
>34	85	13.5
Parity		
nulliparous	217	34.4
pauciparous	284	45.1
multiparous	129	20.5
economic level*		
low	535	84,9
mean	95	15,1
high	00	00
Level of education		
None	395	62.7
Primary	120	19
Secondary	83	13.2
Superior	32	5.1
Quality of prenatal follow-up**		
Good	00	00
Mean	554	88
bad	76	12

*The economic level was deemed low when the monthly income of the couple was below the minimum wage in Côte d'Ivoire (100 euros). And it was estimated average when income was less than 200 euros (less than the double of the minimum wage). **Prenatal follow-up was considered good when the recommended number of prenatal consultations (PCN) and prenatal check up (PCU) were actually performed. It was average when PCN or PCU were not completely done. And it was considered bad when no PCN and no PCU were done. 88% of the patients had mean prenatal follow up.

The average age was 25.93 years, with extremes of 14 years and 48 years. Patients under 20 years and over 34 years of age respectively represented 21% and 13.5% of the total.

62.7% of evacuees were not educated and 84.9% had low economic level.

Nulliparous and multiparous women accounted for 54.9% of the patients.

3.3. The Evacuation Parameters

Urban health centers evacuated 75.2% of patients; the evacuees came from the city of Bouaké in 69.8% of the cases. Most of the evacuations were done by midwives (91.3%).

The evacuation form was badly filled in 49.70% of cases. No partograph was associated with the evacuation record for all evacuees (**Table 2**).

79.4% of patients did not receive care prior to evacuation.

The taxi was the most used means of transport (75.2%). It should be noted that no health worker accompanied the evacuees.

The average time spent in our series was 1 h 21 minutes with a minimum of 7 minutes and a maximum of 18.5 hours.

The evacuees took more than 1 hour to access the CHUB maternity in 38.6% of cases.

Table 2. Distribution of patients according to evacuation parameters (N = 630).

parameters	population	Percentage (%)
Origin*		
city of Bouake	440	69.8
Region of Gbèkè	119	18.9
Other regions	71	11.3
Origin Structure		
Urban Health Centers	477	75.7
Rural Health Centers	71	11.3
General hospitals	64	10.1
Private clinics	18	2.9
Officer in charge of the evacuation		
midwives	590	93.6
nurses	34	05.4
Doctors	06	01
Evacuation form		
Well completed	317	50.3
Badly completed	313	49.7
Care before evacuation		
Care adapted to the motive	130	20.6
No	500	79.4

Continued

Means of evacuation		
Taxis	482	76.5
Ambulances	139	22.1
Personal vehicles	05	0.8
Motorbikes	04	0.6
Journey duration (hour)		
<1	387	61.4
1 - 2	122	19.4
2 - 4	76	12.1
>4	45	7.1

4. Clinical Data**4.1. The Diagnosis Retained on Admission**

The evacuees who did not present any real motive of reference accounted for 38.6%; mechanical dystocia was used as a diagnosis in 26.3% of cases (**Table 3**).

In 43% of cases the diagnosis was not consistent with the motive for the evacuation.

4.2. The Mode of Delivery and the Condition of the Newborn

69.4% of evacuees delivered vaginally.

84.8% of newborns had apgar scores ≥ 7 and 08.3% of newborns died (**Table 4**).

4.3. The Maternal Prognosis

In 89.5% of cases the evolution was satisfactory.

We noted 17 maternal deaths in the evacuees out of 23 maternal deaths recorded in the service during the study period, including 52.9% by post-partum hemorrhage (**Table 5**).

5. Discussion**5.1. The Frequency of Obstetric Evacuation**

In our study, the frequency of obstretic evacuation was 42.5%.

The frequencies vary from one study to another. This is due to the way patients are recruited, the criteria for inclusion, the importance of the center and its location area.

This high rate reported in our series could be explained by the fact that our hospital (study center) is the only reference university and hospital center located in province; It is in the second largest city of Cote d'Ivoire and covers a radius of about 200 km.

Table 3. Distribution of patients according to diagnosis on admission.

diagnosis	population	Percentage (%)
Diagnosis retained		
- Evacuees without problems	243	38.6
- Mechanical dystocia	166	26.3
- acute foetal suffering	62	09.8
- high blood pressure and complications	44	07
- post partum Hemorrhage	29	04.6
- third term pregnancy Hemorrhagia	24	03.8
- Other	62	09.8
- total	630	100
Concordant diagnosis		
Yes	359	57
No	271	43
total	630	100

Table 4. Distribution of patients according to the mode of delivery and the condition of the newborn.

Delivery conditions	population	percentage (%)
Mode of delivery		
Vaginal route	437	69.4
caesarean	177	28.1
laparotomy	16	02.5
Total	630	100
Apgarscore		
≥7	551	84.8
0	54	08.3
1 - 6	45	06.9
total	650	100
condition of the newborn		
satisfactory	516	79, 4
referred in neonatology	80	12.3
deceased	54	08.3
total	650	100

Table 5. Distribution of patients according to maternal prognosis.

prognosis	population	percentage (%)
Prognosis		
Satisfactory evolution	564	89.5
Complications	49	07.8
deaths	17	02.6
total	630	100
causes of death		
- post partum Hemorrhage	09	52.9
- Eclampsia	04	23.5
- acute pulmonary edema	02	11; 7
- Brain embolism	01	05.9
- severe malaria	01	05.9
- total	17	100

5.2. Sociodemographic Profile

From the analysis of our results, the patients studied had many risk factors that could have been detected earlier to prevent certain complications.

The first factor identified is related to age. We have indeed noted a high rate of patient at the extreme ages of their fertility: 21% of adolescent girls and 13.5% of patients over 34 years. These are periods of high risk of complications in obstetrics. These situations are common in our regions because of socio-cultural habits. Indeed the area of Bouaké is a semi-urban area where early marriages are common in the rural part. Moreover, in these rural areas the notion of family planning is hardly accepted, explaining that women over 34 continue to have children. Several authors have found the same thing as us by reporting high rates of adolescent girls in their study [4] [5] [6] [7] [8].

The second risk factor found was parity. The majority of our patients were either nulliparous (34.4%) or multiparous (20.5%), who are 2 groups exposed to obstetric complications.

The third risk factor identified was the poor socio-economic conditions of the majority of our patients: 84.9% of patients had a low economic level, rates copied to those reported by Traore D. [7] and Macalou B. [9] and Cisse [10]; and 62.7% were not educated.

These patients were thus exposed to the ignorance and financial difficulties of management of the pregnancy.

The last risk factor identified was poor pregnancy monitoring. Indeed, no patient had a good prenatal follow-up.

Given these different risk factors, it is therefore important to provide a high-performance evacuation system to reduce maternal mortality as advocated by Adamson Peter [2]

5.3. The Evacuation Parameters

-health worker responsible for the evacuation

In our series 91.3% of the patients were evacuated by midwives, compared to 6% by doctors; several authors found such high rates of evacuation by midwives [4] [7] [8] [11]. On the other hand, Berthe D [12] in Mali noted in his study 34.4% evacuations made by doctors compared to 24.8% by midwives.

The high rate of evacuation performed by midwives testifies the fact that among medical staff they are the most numerous in the obstetrical health structures in Cote d'Ivoire (1 midwife for 2000 inhabitants compared to 1 doctor for 9000 inhabitants).

The retraining, upgrading and awareness of some midwives could help prevent abusive evacuations and delays in evacuation.

-Means of transport

74.6% of the patients were evacuated by taxi in our work; Sépou [11] reported a rate of 68.6% whereas the ambulance was the most used means of evacuation in the series of Thiam [5], Thera [13], Guindo [14].

The disadvantage of the transfer made in non-medical conditions is the aggravation of the health conditions of the patients.

It is therefore necessary that interventions aiming at improving the transport of women with complications be divided into two categories: those aiming at improving the transport of women from their community to the health center and those aiming at improving transport between two health centers of different levels [15].

-The Admission delay

The average time taken by patients to access the reference center in our series was 1 h 21 minutes

The high admission time was due to road conditions, lack of vehicle and distance. It was also due to the lack of financial means, the non-acceptance of "the eventual cesarean section". These reasons sent the parents home before going to the referral center.

The lack of medical transport and the high admission delay help to delay the referral of patients and this contributes to aggravate the fetomaternal prognosis

5.4. Clinical Data

In 43% of the cases the diagnosis was not consistent and 38.6% of the evacuees had not presented a real reason for referral;

This evacuation would be triggered by a superficial diagnosis related to the quality of the health worker and / or the quality of the technical platform; The delivery could have been done in the first contact health center and avoid the cost of additional transportation.

Thera [13] noted in his study that 92.2% of references were adequate, 78.3% justified and 72.2% appropriate.

During the study period, we recorded 23 cases of maternal deaths including 17

discharged patients (74%) meeting our inclusion criteria; results comparable to those reported by Cisse ML: [10] and Tshalu-Aguemon [16].

These patients arrived in our service in very precarious states due to the lack of adequate care before their transfer, the lack of adequate means of evacuation, the admission time delayed. Obstetric evacuation remains a negative factor in the maternal-fetal prognosis in our regions and makes access to effective care one of the solutions to the drama of maternal mortality.

6. Conclusions

This study enabled us to highlight that the evacuations were poorly organized. The patients were poorly prepared; they were evacuated in mediocre conditions worsening prognosis of mothers and newborns.

There is therefore a need to continue strengthening the capacity of peripheral maternity hospitals in terms of material and human resources to make them the minimum care facilities for obstetric emergencies; and to ensure the continuous training and retraining of health workers. This would contribute, through the reduction of certain factors aggravating the prognosis of the evacuated patients, to the reduction of maternal mortality which is still very high in our country.

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