

Obstetrical Emergencies: Clinic and Management at the Ignace Deen Maternity Hospital of the Conakry University Hospital Centre (Guinea)

Conté Ibrahima^{1,*}, Diallo Abdourahamane¹, Diallo Boubacar Siddi², Sylla Ibrahima¹, Yansané Fatoumata¹, Bah Ibrahima Koussy¹, Baldé Ibrahima Sory¹, Sy Telly¹

¹Department of Obstetrics and Gynaecology, Ignace Deen Hôpital National, University Hospital Centre, Conakry, Guinea

²Department of Obstetrics and Gynaecology, Donka National Hospital, University Hospital Centre, Conakry, Guinea

Email address:

conteib1976@gmail.com (Conté Ibrahima)

*Corresponding author

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Abstract: *Introduction:* the objectives of this study were to calculate the frequency, describe the clinic and management of obstetric emergencies in the maternity ward of the Ignace Deen national hospital. *Methods:* this was a prospective cross-sectional descriptive study lasting 6 months, from 1 January to 30 June 2019, covering all patients treated for obstetric emergencies in the maternity ward of the Ignace Deen National Hospital during the study period. *Results:* Obstetric emergencies accounted for 30.48% of consultations during the study period. The average age of patients was 26.30 years, with extremes of 15 and 45 years. Nulliparous women were the most represented with a rate of 34.73%. Emergencies occurred in full-term pregnancies in 71.29% of cases. Acute foetal distress and arterial hypertension and its complications were the main obstetric emergencies encountered, with proportions of 22.65% and 21.36% respectively. Treatment was surgical in 82.73% of cases. Maternal mortality was 5% and foetal mortality 30%. *Conclusion:* Obstetric emergencies are frequent in our working environment and are the cause of several maternal and perinatal deaths. Measures must be taken to improve monitoring of pregnancies and childbirth, which would make it possible to avoid most obstetric complications.

Keywords: Emergency, Pregnancy, Clinic, Care, Ignace Deen

1. Introduction

Obstetric emergencies are often dramatic clinical situations with a short-term impact on the vital prognosis of the mother and/or foetus. [1]. They are the main cause of maternal mortality worldwide, particularly in developing countries where illiteracy, poverty, lack of antenatal care, poor transport and lack of equipment and personnel exacerbate the problem [2].

Every year, more than 273,000 maternal deaths and 2 million neonatal deaths occur worldwide, the vast majority in low-income countries [3, 4]. Numerous studies on maternal mortality have shown that the quality of obstetric services, as well as the provision of timely and adequate care for obstetric

emergencies, are essential for reducing maternal morbidity and mortality in institutions [5].

Indeed, it is estimated that a large proportion of maternal deaths could be prevented by adequate antenatal and postnatal care, skilled attendance at birth and the availability of emergency care to treat obstetric complications [6]. There are many reasons why women do not have rapid access to quality services, including the "three delays": delay in deciding to seek care; delay in accessing the facility and/or delay in providing appropriate care once in a facility [7]. In Congo, in 2019, a study by Remy B B et al [8] noted that obstetric emergencies accounted for 20.6% of admissions, compared with 2.2% in Mali in 2019 by Keita M et al [9], and 19% in Guinea by Diallo B S et al [10] in 2019 at the maternity ward of the Donka national hospital. The

objectives of this study were to determine the frequency, describe the clinical socio-demographic data and the management of obstetric emergencies at the facility.

2. Patients and Methods

This was a prospective cross-sectional descriptive study lasting 6 months, from 1 January to 30 June 2019, of all patients admitted to the maternity unit of the Ignace Deen National Hospital during the study period for obstetric emergencies. We included in our study all women admitted to the Ignace Deen maternity hospital for a life-threatening obstetric condition requiring immediate care and who agreed to participate in the study. The sample was recruited from all women seen for an obstetric emergency during the study period who agreed to take part in the study.

The variables were qualitative and quantitative and included sociodemographic, clinical, therapeutic and prognostic headings. Data were collected using an individual questionnaire. Data were entered and analysed using Epi Info 7.2.2 software.

Ethical considerations: authorisation to carry out this study was obtained from the head of department, and anonymity and confidentiality were respected.

The limitations and difficulties encountered during the study were the reluctance of some patients and the unavailability of the antenatal follow-up booklet for others.

3. Results

3.1. Frequency of Obstetric Emergencies

During the study period, we saw 3287 patients, of whom 1002 were seen for obstetric emergencies, i.e. a frequency of 30.48%.

3.2. Socio-Demographic and Obstetric Characteristics of Patients

Table 1. Breakdown of women seen for obstetric emergencies by socio-demographic characteristics.

| Socio-demographic characteristics | Number N: 1002 | Frequency (%) |
|-----------------------------------|--------------------------|---------------|
| Age | | |
| 19 years | 152 | 15.17 |
| 20–24 years | 279 | 27.84 |
| 25–29 years | 251 | 25.05 |
| 30–34 years | 185 | 18.46 |
| 35–39 years | 118 | 11.78 |
| 40 and more | 17 | 1.70 |
| Profession | | |
| Housewife | 361 | 36.03 |
| Liberal profession | 344 | 34.33 |
| Pupil/Student | 160 | 15.95 |
| Employed | 137 | 13.67 |
| Level of education | | |
| No education | 479 | 47.80 |
| Primary | 151 | 15.07 |
| Secondary | 196 | 19.56 |
| Higher | 176 | 17.56 |
| Average age (26.30 years) | Extreme age (15 and 45). | |

Housewives were the most numerous with a proportion of 36.03%. The educational level was dominated by patients with no schooling (47.80%).

Breakdown of women admitted for obstetric emergencies by mode of admission: in our study, the majority of emergencies were attended by women who had been evacuated, i.e. 62.00%, compared with 38.00% who had come themselves.

Table 2. Breakdown of women seen for obstetric emergencies by obstetric characteristics.

| Obstetrical characteristics | Number N: 1002 | Frequency (%) |
|-------------------------------|----------------|---------------|
| Prenatal consultation | | |
| No consultation | 132 | 13.17 |
| 1 Consultation | 420 | 41.92 |
| ≥ 4 Consultations | 450 | 44.91 |
| Parity | | |
| Nulliparous | 358 | 35.73 |
| Primiparous | 222 | 22.16 |
| Pauciparous | 241 | 24.05 |
| Multiparous | 181 | 18.06 |
| Age of pregnancy | | |
| Pre-term | 283 | 28.24 |
| Term | 678 | 67.66 |
| Post term | 41 | 4.10 |
| Time of occurrence | | |
| During work | 638 | 63.67 |
| Before labour | 285 | 28.44 |
| During the Post-partum period | 79 | 7.89 |

Emergencies occurred in 678 full-term pregnancies (67.66%), 283 pre-term pregnancies (28.24%) and 8 post-term pregnancies (4.10%). Parity was dominated by 358 nulliparous women (35.73%) and 241 pauciparous women (24.05%). Women in labour predominated in 63.67% of cases, followed by women not in labour in 28.44% of cases and women in post partum in 7.89% of cases (table 2).

3.3. Clinical

Table 3. Breakdown of women seen for obstetric emergencies, by diagnosis on admission and retained diagnosis.

| Diagnosis on admission | Number N: 1002 | Frequency (%) |
|---|----------------|---------------|
| Arterial hypertension | 273 | 27.25 |
| Acute foetal asphyxia | 227 | 22.65 |
| Haemorrhage in the 2nd and 3rd trimesters | 221 | 22.06 |
| Dystocia | 129 | 12.87 |
| 1st trimester haemorrhage | 37 | 3.69 |
| Post-partum haemorrhage | 35 | 3.49 |
| Anemia | 33 | 3.29 |
| Infection | 20 | 2.00 |
| Pre-rupture syndrome | 13 | 1.30 |
| Threat of premature delivery | 9 | 0.90 |
| Procidence of the cord | 5 | 0.50 |
| Diagnosis selected | | |
| Acute foetal asphyxia | 227 | 22.55 |
| Severe pre-eclampsia | 214 | 21.36 |
| Retroplacental haematoma | 147 | 14.67 |
| Dystocia | 129 | 12.87 |
| Eclampsia | 86 | 8.68 |
| Soft tissue tear | 59 | 5.89 |
| Placenta praevia | 46 | 4.59 |
| Ectopic pregnancy | 31 | 3.09 |

| Diagnosis on admission | Number N: 1002 | Frequency (%) |
|------------------------|----------------|---------------|
| Uterine rupture | 28 | 2.79 |
| Delivery haemorrhage | 22 | 2.19 |
| Other | 13 | 1.30 |

The main diagnoses on patient admission (table 3) were hypertension (273 cases or 27.25%), acute fetal distress (227 cases or 22.65%) and 2nd and 3rd trimester haemorrhage (221 cases or 22.06%). The most common diagnoses were acute fetal asphyxia (227 cases, 22.65%), severe pre-eclampsia (214 cases, 21.36%) and retroplacental hematoma (147 cases, 14.67%).

3.4. Taking Charge

Table 4. Breakdown of women seen for obstetric emergencies according to medical treatment and obstetric procedure.

| Medical treatment and obstetrical procedure | Number | Frequency (%) |
|---|--------|---------------|
| Infusion of solutions | 928 | 92.61 |
| Antibiotic therapy | 283 | 28.24 |
| Anticonvulsant | 276 | 27.54 |
| Antihypertensive | 270 | 26.95 |
| Blood transfusion | 187 | 18.66 |
| Utero tonic | 76 | 7.58 |
| Resuscitation | 37 | 3.69 |
| Uterine revision | 32 | 3.19 |
| Uterine massage | 14 | 1.40 |
| Prostaglandin | 9 | 0.90 |
| Tocolytics | 8 | 0.80 |
| Diuretic | 7 | 0.69 |
| Antimalarial | 5 | 0.50 |
| Dabbing | 2 | 0.19 |
| Aspiration | 2 | 0.19 |
| Compression of the abdominal aorta | 1 | 0.09 |

In 92.61% of cases, we proceeded with vascular filling by infusion of isotonic solutions; 28.24% of our patients received antibiotics, 26.95% antihypertensive drugs; 18.66% were transfused and 3.69% were resuscitated.

Table 5. Breakdown of women seen for obstetric emergencies according to surgical treatment.

| Surgical treatment | Number | Frequency (%) |
|-----------------------------------|--------|---------------|
| Caesarean section | 754 | 90.95 |
| Salpingectomy | 31 | 3.74 |
| Hysterorraphy for uterine rupture | 25 | 3.02 |
| Soft tissue suture | 16 | 1.93 |
| Haemostasis hysterectomy | 3 | 0.36 |
| Total | 829 | 100.00 |

Of the 1002 cases, 829 patients received surgical management, i.e. 82.73%. This surgical management was dominated by caesarean section in 90.95% of cases.

Overall, 95% of patients were saved, compared with 5% of maternal deaths.

Table 6. Breakdown of maternal deaths by cause.

| Causes of maternal death | Number (47) | Frequency (%) |
|--------------------------|-------------|---------------|
| Haemorrhagic shock | 22 | 46.81 |
| Eclampsia coma | 13 | 27.66 |
| Acute renal failure | 4 | 8.51 |
| Acute lung oedema | 3 | 6.38 |

| Causes of maternal death | Number (47) | Frequency (%) |
|--|-------------|---------------|
| Severe anaemia | 3 | 6.38 |
| Disseminated intravascular coagulation | 1 | 2.13 |
| Septic shock | 1 | 2.13 |

The main causes of death were haemorrhagic shock in 46.81% of cases and eclamptic coma in 27.66% of cases.

Fetal outcome: in our study, most of the 610 newborns (70%) were saved, compared with 258 (30%) who died.

Table 7. Breakdown of women seen for obstetric emergencies by cause of fetal death.

| Cause | Number | Frequency (%) |
|--------------|--------|---------------|
| Hypoxia | 182 | 70.54 |
| Prematurity | 47 | 18.22 |
| Infection | 27 | 10.47 |
| Malformation | 2 | 0.77 |
| Total | 258 | 100.00 |

The majority of deaths were due to hypoxia in 70.54% of cases, followed by prematurity in 18.22% of cases and infection in 10.47% of cases.

4. Discussion

Obstetric emergencies are a real problem in our context due to the considerable frequency found in our study (30.48%). However, this frequency is close to that reported in Benin in 2016, where the authors found a frequency of 34.8% [11]. On the other hand, it is higher than that reported by Tonato Bagnan J. A. et al [12] at the university gynaecology and obstetrics clinic in Cotonou, where obstetric emergencies accounted for 21.7% of admissions.

The high rate of obstetric emergencies in our study may be related to the fact that the maternity unit of the Ignace Deen national hospital is a last resort referral centre in the Guinean health pyramid. This maternity hospital receives emergencies from all the country's health facilities. It could also be explained by the fact that our hospital was the only operational referral centre during the study period. These frequencies, although disparate, bear witness to the real public health problem of obstetric emergencies in developing countries, and reflect the low level of development of the health system.

The mean age of patients consulting for obstetric emergencies and the extremes found in our study corroborate those reported by Tchaou B A et al [13] who reported a mean age of 26.7 ± 6.2 with extremes of 15 and 45 years. Similarly, Samaké et al [14] reported an average age of 26 years with extremes of 15 and 44 years.

These results show that obstetric emergencies classically concern young women, as this age group corresponds to the period when women reproduce the most.

In our study, housewives and those with a low level of education were the most affected by obstetric emergencies. This leads us to hypothesise that low socio-economic and educational levels are involved in pregnancy monitoring in order to avoid the occurrence of

detectable emergencies. Awareness-raising campaigns targeting this group should be undertaken by decision-makers.

Our results regarding the mode of admission are comparable to those of Diallo, M H et al [15] in 2021 at Donka who reported that 56.70% were evacuated compared with 43.3% who came on their own.

Although antenatal care does not prevent obstetric emergencies, it does at least enable the early detection of certain pathologies related to or occurring during pregnancy, or prevent them from developing into more serious situations. In our study, we found a high proportion of women who had had fewer than 3 antenatal consultations, including 7.64% who had not had any antenatal consultation at all. This is relatively better than the figure reported by Maleya A et al [16] in Congo in 2017, where 21.23% of women in their series had not attended any antenatal clinic.

As in the study by Accorsi S et al [17], we found that nulliparous women were the most represented in our study.

In our study, hypertension and its complications were the most frequent obstetric emergencies. Our results are comparable to those of Ouattara A et al [18] who found 12.55% eclampsia and 11.21% pre-eclampsia.

The high rate of uterine rupture in our series is higher than that of Fouelifack F Y et al [19] in 2019 who reported 1.23%.

The high frequency of acute foetal distress could be explained by the delay in evacuation of patients, transport and management.

The high incidence of pre-eclampsia, eclampsia and haemorrhage could be explained by poor monitoring of pregnancies and poor management of deliveries.

The therapeutic attitude depended on the admission diagnosis, the general condition, and the prognosis for the mother and the foetus.

Our results relating to the administration of magnesium sulphate (27.54%) as an anticonvulsant are lower than those reported by Diallo, M. et al [15] in Donka, who found that magnesium sulphate was used to treat or prevent convulsive seizures in 43.6% of cases.

These treatments based on magnesium sulphate and nifedipine can be explained by their accessibility, availability and good therapeutic results.

Our surgical approach was dominated by caesarean section in 90.95% of cases, salpingectomy, hysterorrhaphy and soft tissue suture. This result is close to that of Kazi S et al [20] 81% caesarean section and much lower than Kinenkinda X et al [21] in 2017 in Lubumbashi, Democratic Republic of Congo found 48.6%.

Although the therapeutic attitude depends on the maternal-fetal prognosis, it appears that caesarean section is the first therapeutic indication in emergencies with the constant concern of saving the mother and/or foetus.

Obstetric emergencies are a major cause of maternal death in countries where access to healthcare is limited and where there is a lack of health infrastructure. Mortality was 5% in our study, and the main causes of death were haemorrhagic

shock and eclamptic coma.

Our results differ from those reported by Mutombo k.C et al [1] and Mbachu I et al [22] who found 2.63% and 8.8% maternal deaths respectively.

Hypovolaemia due to haemorrhagic shock was the leading cause of death, followed by coma due to eclampsia.

The results relating to haemorrhagic shock and eclampsia-related coma can be explained by the unavailability of blood products and the absence of an intensive care unit.

Fetal mortality in our study was 30%. This rate is twice as high as that reported by Diallo M et al [23] in Senegal in 2019, who found 14.7%. This neonatal mortality rate in our study could be correlated with the absence of a neonatology department in our facility for the immediate and adequate care of sick newborns and premature infants.

5. Conclusion

Our study shows that obstetric emergencies are a major public health problem because of their frequency. Most of the women in our study were young, nulliparous, not in education, had low-paid jobs and were evacuated from the suburbs. The study showed that the main method of dealing with obstetric emergencies was caesarean section. The maternal mortality rate remains high, due to haemorrhage. Fetal mortality is high, with acute fetal distress and prematurity the main causes.

It follows from all the above that avoiding pregnancies too early and too numerous, good prenatal monitoring and promptness in making evacuation decisions would contribute considerably to reducing maternal-foetal mortality.

Declaration of Interests

The authors declare that they have no competing interests.

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