Original Research Article

Outcome of obstetric referrals at the Bogodogo University Teaching Hospital: context of free emergency obstetric and neonatal care

Abstract

Objective: To describe the epidemiological, clinical and prognostic aspects of obstetric referrals to the University teaching Hospital Bogodogo (UTH-B) in Ouagadougou, Burkina Faso.

Materials and methods: This was a retrospective descriptive study of obstetric referrals made by peripheral health facilities to the gynecology and obstetrics department of the Bogodogo University Hospital in Ouagadougou, Burkina Faso. The study population consisted of all patients referred from 1 January 2020 to 31 December 2022.

Results: During the study period, we recorded 9806 admissions for obstetric pathologies. Of these obstetric pathologies, 42.47% had been referred. The mean age of the patients was 26.11 years [13-49]. Referred patients from health facilities in the city of Ouagadougou represented 96% of the sample. The reasons for referral were dominated by pre-eclampsia and eclampsia in 24.57% of cases. We recorded a total of 161 cases of maternal death, representing a case-fatality rate of 3.9%. Some 26.55% of newborns had been resuscitated and then referred to the neonatology department.

Conclusion: Despite the implementation of free emergency obstetric and neonatal care, the maternal and neonatal prognosis during obstetric referrals is guarded. It is important to look for other factors that worsen maternal and neonatal prognosis in order to take corrective measures.

Key words: referrals, prognosis, UTH-B, Ouagadougou.

1- Introduction

In Burkina Faso, the government health care referral policy states that, if a referral/transfer is required, a primary care provider or centre should refer the patient to the next level health facility (a frontline hospital, level B or level C hospital) and not directly to a higher level (Level A) hospital. Unfortunately, this pyramidal referral system seems to contribute to mediocre results in

the management of obstetric emergencies, especially in certain countries with limited resources, marked by delays in patient transfer [5].

The Department of Gynecology and Obstetrics at the University teaching Hospital of Bogodogo (UTH-B) is the referral centre par excellence for many peripheral facilities in the city of Ouagadougou and in Burkina Faso. The maternal mortality ratio there is 2,000 deaths per 100,000 live births [13, 17, 18, 23]. One of the reasons that could explain the scale of this phenomenon is the poor organisation of the referral and counter-referral system. Patients are usually evacuated late, in precarious conditions [1, 3, 18]. To solve the problem of excess maternal mortality linked to delayed referral, the government of Burkina Faso decided in 2006 to grant a subsidy for emergency obstetric and neonatal care, which should allow therapeutic management without prepayment for any obstetric complication In this study, the authors set out to describe the maternal and fetal prognosis of patients referred to this facility, which is the true mirror of reproductive health in Burkina Faso after only a few years of implementation of this state subsidy.

2-Materials and methods

The study was conducted in The Department of Gynecology and Obstetrics at the University teaching Hospital of Bogodogo (UTH-B). This was a retrospective and descriptive study of obstetric referrals. The study population consisted of all patients referred to the department during the study period, which ran from 1 January 2020 to 31 December 2022, a period of 36 months. Only patients referred for obstetrical reasons were included in the study. Data were collected from patient records, the operating theatre register and the delivery register. Study variables included socio-demographic characteristics; clinical, prognostic and evolutionary elements of the pregnancy, as well as the mother-child relationship. The data were entered and analysed using SPSS version 17.0 software.

3-Results

3.1-frequency of obstetric referrals

We recorded 9806 admissions for obstetric pathology, 42.47% of which were referred.

3.2-Social and demographic characteristics

The average age of the patients was 26.11 years, with extremes of 13 and 49 years. The 15 to 19 age group was the most represented, with 927 patients (22.3%). Married patients accounted for 89.80%. Housewives accounted for 74.4% and pupils and students for 7.9%. There were 1,467 patients (35.2%) who did not attend school. The primary level of education was the most represented, with 1848 patients (44.40%).

The average parity was 6.2 with extremes of 1 and 11 deliveries. Large multiparous women numbered 1287, i.e. 30.9% of patients. Of the patients, 96% were from the city of Ouagadougou and 4% from rural areas. Patients were referred in the absence of an emergency in 1035 cases, i.e. 24.8%, and as an emergency in 3130 cases, i.e. 75.2%.

3.3 Reason for referral

The distribution of patients according to the reason for referral is shown in Table 1.

Table 1: Distribution of patients according to reason for evacuation or referral

Reason for evacuation	Number	Percentage
Eclampsia	523	12.55
Pre-eclampsia	467	11.21
Threatened abortion	439	10.54
Third trimester haemorrhage	408	9.80
Post partum haemorrhage	391	9.38
Dystocia	365	8.76
Acute foetal distress	324	7.77
High blood pressure	267	6.41
Threat of premature delivery	191	4.60

Pulmonary embolism	190	4.56
Iterative caesarean section	137	3.28
Haemoglobinopathy	113	2.71
premature rupture of the membranes	79	1.90
intra-uterine fetal death	76	1.82
Large fetus	39	0.93
Heart disease and pregnancy	36	0.90
Prolonged pregnancy	22	0.52
Fetal malformation	13	0.31
Other	85	2.04
Total	4165	100.00

3.4 Maternal prognosis

We recorded a total of 161 cases of death, representing 3.9% of referrals. The different direct and indirect causes of maternal death are presented in Table 2.

Table 2: Distribution of patients according to direct and indirect cause of death

Direct and indirect causes of death	**Number**	**Percentage**
Haemorrhage in childbirth	43	26.7
Preeclampsia/eclampsia	56	34.8
Uterine rupture	12	7.5
Pulmonary embolism	2	1.2
Septic abortion	3	1.9
Post-partum infections	6	3.7
HIV/AIDS and pregnancy	5	3.1
Malaria in pregnancy	7	4.3

Sickle cell disease in pregnancy	2	1.2
Chronic anaemia	13	8.2
Heart disease	5	3.1
Other	7	4.3
Total	**161**	**100**

Among the deaths, 64.6% occurred in the obstetrics and gynecology department, 7.5% during referral in the evacuation ambulance and 28% died in the intensive care unit. One hundred and fourteen (114) deaths (70.8%) were recorded in the post-partum period. Thirty (30) patients (18.6%) died in the antepartum period and 17 (10.6%) died in the perpartum period.

3.5 Fetal and neonatal prognosis

The distribution of newborns according to their clinical condition is shown in Table 3.

Table 3: Distribution of newborns according to the Apgar score at birth

Condition of the newborn at birth	**Number**	**Percentage**
Apgar score <6	883	26.55
Apgar score ≥6	2397	72.10
Not specified	45	1.35
Total	3325	100.00

Newborns were transferred to neonatology in 807 cases, i.e. 24.27%. The distribution of newborns according to the reason for referral to neonatology is presented in table 4.

Table 4: Breakdown of newborns by reason for referral to neonatology

Reference motif	Number	Percentage
Neonatal suffering	413	51.17
Prematurity	216	26.76

Neonatal infection	63	7.80
HIV-positive mother	55	6.81
Fetal hypotrophy	24	3
Fetal macrosomia	23	2.85
Fetal malformation	13	1.61
Total	**807**	**100.00**

Hydrocephalus, omphalocele, club foot, cleft palate and harelip were the main malformations found. In 81.15% of cases, the newborn was alive when discharged from hospital.

4. Discussion

4.1-Maternal mortality

We recorded a case fatality rate of 3.9% for referrals. This result is comparable to that reported by DIARRA [7]. However, it is lower than that of LANKOANDE [18], who found a rate of 10% in the same care facility. The WHO standard, which considers a case-fatality rate of less than 1% to be acceptable, is therefore not met. The difference between our results and those of LANKOANDE in the context of our work could be explained by the positive impact of the subsidy granted to emergency obstetric and neonatal care since 2006 by the government authorities. Thanks to this subsidy, obstetric complications were treated without prepayment. Delays in referral, poor organisation of the referral system, the poor quality of our transport infrastructure, the non-availability of certain emergency medicines and the under-equipment of reception facilities are all factors contributing to maternal mortality [1,2,3,10,14,17,20,24,25]. Long distances in unfavourable conditions, with a road network that is not always of good quality, contribute to the worsening of the condition of patients referred [8, 9, 11, 12, 14].

In our study, the main cause of death was pre-eclampsia/eclampsia. In these situations, death occurred due to a lack of space in the intensive care unit or a shortage of certain essential drugs such as magnesium sulphate. These facts have been noted by several authors [1,2,3,10,11,12,17], who describe obstetric referral as a negative factor in maternal and foetal prognosis and make access to effective care one of the solutions to the tragedy of maternal death.

Pre-eclampsia and eclampsia, haemorrhage and anaemia were the main causes of maternal death in our study. EYOKO [12] reported the same aetiologies in his various studies. For THIERO [25], on the other hand, dystocia was the main cause of maternal death.

Two out of three deaths recorded in our department occurred during the post-partum period. A large proportion of these deaths were avoidable. These deaths could have been avoided if emergency obstetric and neonatal care had been provided.

4.2-Stillbirths and early neonatal mortality

During our study, we recorded 18.85% of neonatal deaths. This distressing finding is shared by DIARRA [7]. In 2001, DOLO [10], in a study of risk factors for stillbirth, found that the risk of stillbirth was two times higher in referred women than in self-referred women. EBENYE [11] also made the same observation. DIALLO [6] revealed that the incidence of stillbirths in children born to referred mothers was 6 times higher than that of non-referred mothers.

5. Conclusion

Maternal and neonatal prognosis in referred patients is a public health concern despite free care at UTH-B. Raising public awareness of the need for focused antenatal consultations, providing peripheral facilities with logistics to facilitate referrals, and training staff in the management of emergency obstetric and neonatal care would undoubtedly help to reduce this scourge, which only delays or undermines efforts to achieve sustainable development objectives

Conflict of Interest Statement

the authors declare no conflicts of interest

Ethical Approval:

As per international standards or university standards written ethical approval has been collected and preserved by the author(s).

Consent

As per international standards or university standards, respondents' written consent has been collected and preserved by the author(s).

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