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Evaluation of Emergency Obstetric and Neonatal Care in the Boulmiougou Health District in Ouagadougou, Burkina Faso

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Authors' contributions

This work was carried out in collaboration among all authors. All authors read and approved the final manuscript.

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ABSTRACT

Objective: To assess the provision of emergency obstetric and neonatal care (EmONC) in the Boulmiougou health district of Ouagadougou, Burkina Faso.

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Methods: This was a longitudinal, descriptive, study conducted at the Boulmiougou Medical Centre with Surgical Antenna in Ouagadougou, Burkina Faso. It was conducted over 6 months between 1st May and 1st November 2022. Our study included all patients who met the escapee's criteria and who were managed at the study site. The participatory observation method was used for data collection, which focused on comprehensive emergency obstetric care as defined in the WHO evaluation guide. We measured the availability of obstetric care, the time taken to provide it and the elements of its monitoring.
Results: The evaluation involved 85 patients who had escaped from hospital. Medical resuscitation was administered within the first 30 minutes for almost all patients. Surgical care was administered within 30 minutes of admission for 35% of patients and within 60 minutes for 52% of patients. Blood transfusion was administered within the first two hours in 41% of patients. In cases of anemia, transfusion was only possible in 25% of patients. In cases of severe hemorrhage, transfusion was only possible in 75% of cases. Antihypertensive treatment was administered within 30 minutes in cases of hypertension and pregnancy. In cases of septicemia, 43% of patients were only able to receive antibiotic treatment after 2 hours.
Conclusion: The quality of management of obstetric complications is inadequate at Boulmiougou Hospital in Ouagadougou, Burkina Faso. The lack of rigour and promptness in the management of these pathologies contributes to worsening maternal morbidity and mortality, which is already too high in our context. Specific staff training and the availability of blood products and emergency medicines in our departments would be a good way of reducing maternal morbidity and mortality.

Keywords: EmONC; escapee; health district; Ouagadougou.

1. INTRODUCTION

Despite progress in reducing maternal mortality, Burkina Faso still suffers from some of the worst maternal and neonatal health indicators south of the Sahara [1,2]. Hemorrhage, infection, dystocia and hypertensive disorders of pregnancy, including pre-eclampsia and eclampsia, are particularly prevalent and are the leading cause of pregnancy-related deaths in the region [3].

A targeted self-evaluation of severe obstetric complications would provide useful information on the inadequacy of their management in our context [4,5,6]. Burkina Faso, which has a maternal mortality ratio of 341 per 100,000 live births despite subsidised obstetric care, has adopted this type of self-assessment to improve the management of emergencies [7,8]. We therefore propose to share the first experience of self-evaluation in a district hospital in the west of Burkina Faso, which is characterised by high attendance, its urban location and the good quality of its health infrastructure.

2. MATERIALS AND METHODS

The study was conducted in the Boulmiougou health district hospital in Ouagadougou, the capital of Burkina Faso, which has 4 urban health districts, including Boulmiougou, which is the largest in terms of patient numbers and capacity. Our study took place from 1st May to 1st November 2022, a period of 6 months. It was a longitudinal and descriptive study.

Patients admitted to the obstetrics and gynecology department of the district hospital during the study period for obstetric complications meeting the criteria for identifying a " escapee's " and presenting with at least one of the following five pathologies were included in the study: severe hemorrhage, severe anemia, arterial hypertension (AH), dystocia and infections during pregnancy, delivery and the post-partum period. The participatory observation method was used for data collection with the help of trained interviewers. For each case recruited, the following variables were taken into account: socio-demographic characteristics, conditions of admission and occurrence of morbidity, dates and times of emergency procedures, dates and times of decision-making and performance of medical and surgical procedures, and elements of subsequent monitoring in the department. The data were analysed using Excel version 11.0 and Epi info version 3.3.2. The evaluation criteria used in our survey were those developed by the World Health Organisation (WHO) for the analysis of the management of escapes. Escaped patient was defined patient whose life-threatening Prognosis was at risk during pregnancy, childbirth or the immediate post-partum period, and who survived as a result of hospital care [9].

3. RESULTS

3.1 Frequency

During the study period, we recorded 2714 emergency patients, 85 of whom had escaped. The drop-out rate was 3%.

3.2 Socio-demographic Characteristics of Patients

- Age

The average age of the patients was 25 years, with extremes of 15 and 45 years (standard deviation of 6.2).

- Occupation and level of education

Seventy-six (76) patients had no formal education and 68 were housewives with no income-generating activity.

- Obstetrical history

Obstetrical history included: 5 previous caesarean sections, 8 abortions, 2 stillbirths, 33 nulliparous, 22 pauci parous and 30 multiparous.

3.3 Clinical Aspects

3.3.1 Origin/Mode of admission

Thirty-seven (37) patients (43.5%) came from other health districts in the city of Bobo Dioulasso. Patients referred from the Health and Social Promotion Centres (CSPS) of the health district represented 65.9%. Direct admissions involved 29 patients.

3.3.2 Obstetrical period and need for resuscitation

The gravidopuerperal period at the time of patient inclusion was distributed as follows: third trimester 56.5%, 17 or 20% were in the first trimester 20%, 07 or 8.2% were in the second trimester, 10 or 11.8% were postpartum and 3 or 3.5% were postabortion. Resuscitation care was required on admission in 21 patients (25%).

3.3.3 Obstetrical complications

The various obstetric complications are presented in Table 1.

3.3.4 Pregnancy outcome

Pregnancy outcome was characterised by the following events:

- ✓ Delivery: 58 cases, 42 by caesarean section (49.4%) and 16 by vaginal delivery (18.8%). The condition of the newborns was as follows: 24.1% stillborn and 75.9% alive. The average hospital stay was 6.3 days, with extremes of 2 days and 19 days.
- ✓ laparotomy for ectopic pregnancy: 12 cases (14.1%),
- ✓ abortion in 8 cases (9.4%). These cases received post-abortion care.

Table 1. Distribution of patients by cause of hemorrhage

Obstetric complications	Number	%
Pulmonary embolism	12	27.3
Severe anaemia	9	20.4
Placenta previa	8	18.2
Abortion	5	11.4
Delivery haemorrhage	4	9.1
Retroplacental haematoma	3	6.8
Molar pregnancy	2	4.5
Puerperal infection	1	2.3
Total	44	100

3.4 Quality of Emergency Care

3.4.1 Delay in emergency care

The distribution of patients according to the time taken to receive care and the pathology is shown in Table 2.

The emergency procedures of taking a venous line and administering fluids were carried out within the first 30 minutes. The average time taken to obtain a blood test was 159 minutes.

3.4.2 Quality of management

- Vascular filling

Ninety-five percent (95%) of patients benefited from emergency procedures, i.e. venipuncture and blood sampling for additional tests. However, the rate of renal assessment in hypertensive patients was low. The median time between prescription and receipt of laboratory results was

159 minutes, with extremes of 10 minutes and 660 minutes (11 hours).

- Blood transfusion

In cases of hemorrhage, 33 out of 44 patients (75%) received a blood transfusion. The time taken for the blood transfusion was considered unsatisfactory in 60.7% of cases because it took more than two hours from the time the request was made. The average time taken for a blood transfusion was 166 minutes.

- Antihypertensive and anticonvulsant treatment

Antihypertensives and anticonvulsants were administered in 88% and 75% of cases respectively, and within less than 15 minutes. In 62.5% of cases, the coagulation test at the patient's bedside, recommended because of the risk of hemorrhagic complications, was not carried out. The average time taken to evacuate the uterus was 51 minutes in cases of eclampsia and 24 hours in cases of severe pre-eclampsia.

- Management of dystocia

The average time to intervention was 43.6 minutes. In 94.7% (18 cases) tocolysis was not carried out in cases of prerupture syndrome.

- Antibiotic treatment

The average time taken to take a biological sample after admission was 14 minutes. The time taken to administer antibiotics was 97.6 minutes.

- Treatment monitoring

During treatment monitoring, blood pressure, pulse rate and temperature were not taken regularly and decreased in frequency from day one to day three.

The assessment of the quality of treatment monitoring is presented in Table 3.

- Overall assessment of quality of care

The distribution of the different types of morbidity according to the level of quality of care is shown in Table 4.

4. DISCUSSION

The incidence of escapees was 3.1% in our series. Our results are similar to those of Mayi-tsonga in Libreville [10], who found a prevalence of 3.15%. Canvassing and direct identification of our patients enabled systematic recruitment. Monitoring was deemed inadequate in 59% of hemorrhage cases. Routine coagulation testing and vascular filling were not observed among practitioners. Shortcomings in the initial training of staff and an excessive workload could explain the neglect of this aspect, which is vital in acute hemorrhage cases.

The administration of antihypertensive and anticonvulsant drugs, and especially tocolytics in the event of pre-rupture, was inadequate. The non-availability of drugs in the delivery room and their non-inclusion in emergency consultation kits could partly explain the shortcomings noted in the management of these complications which cause maternal and fetal mortality.

Table 2. Distribution of patients according to the time taken to seek care and pathology

Treatment time	<30min n	30-60min n	60-120min n	>120min n	N
Haemorrhage n=					
• Blood collection	3	10	12	15	40
• transfusion	3	9	6	11	29
• specific treatment	7	9	6	19	41
Dystocia					
• caesarean section/laparotomy	8	12	2	1	23
Hypertensive disorder					
• antihypertensive	7	1	0	0	8
• anticonvulsant	6	2	0	0	8
• childbirth	0	2	2	3	7

Infection					
• sample	6	1	0	0	7
• antibiotic	1	1	2	3	7

Table 3. Assessment of the quality of surveillance of various morbidities according to WHO criteria

	Haemorrhage	Dystocia	High blood pressure	Infection
Satisfactory	5	10	6	3
Intermediate	13	4	2	2
Poor	26	9	3	2
Total	44	23	11	7

Table 4. Breakdown of morbidity by level of quality of care based on WHO criteria (in percentages)

Morbidity	Good quality	Intermediate quality	Poor quality
Dystocia	34.8	65.2	0
Haemorrhage	39.5	16.3	44.2
Hypertensive disorders	62.5	37.5	0
Infection	14.3	71.4	14.3

The average time taken to insert the venous line and take the biological sample was around 15 minutes. This procedure is essential to stabilise the maternal hemodynamic state and to administer life-saving care.

In our series, only 25% of patients requiring emergency blood transfusion were transfused within a reasonable time. In cases of anemia and cataclysmic hemorrhage, blood transfusion should be performed as a matter of urgency. Like our results, Saisonou [11] found an unmet need rate of 45% in 5 maternity units in Benin. The problem of the lack of labile blood products has suddenly worsened in recent years in our countries. Despite major organisational efforts by the National Blood Transfusion Centre, the coverage rate for obstetric emergencies remains low. Volunteer blood donors are becoming increasingly rare. There is an urgent need to raise public awareness of this issue, because blood, that precious liquid, is irreplaceable in saving lives in the event of hemorrhage.

In our series, there were a number of strengths in the administration of antihypertensive and anticonvulsant drugs, the management of which was judged to be fairly satisfactory. This result differs from that found by Mayi-tsonga S. in Gabon and Saisonou in Benin [10,11]. This difference could be explained by the fact that in Burkina Faso, these treatments are included in the consultation kit and are therefore immediately accessible.

The delay in administering antibiotics was long. This could be explained by the clinical condition of the patients, who often required the removal of a collapse before the antibiotics were administered, in accordance with the protocol used in the study department. This attitude is debated by other authors who recommend immediate antibiotic treatment concomitant with recovery from shock.

Our study showed that the majority of patients were able to undergo obstetric procedures within the times recommended in the literature [12,13,14,15,16,17]. There is no scientific medical evidence or standard for the time taken to perform an obstetric procedure, particularly a caesarean section. However, the authors recognise that 60 minutes is an acceptable time to start an emergency caesarean section. In our series, 87% of patients underwent caesarean section within this time frame. According to Helmy, 40 minutes would seem a realistic time for an emergency caesarean [18].

Subsidised caesarean section in Burkina Faso reduces the financial barriers to access to caesarean section, which explains our results, which contrast with those of other countries. The average delay of 41 minutes for a caesarean section could be improved by the

presence of operating theatre staff on site 24 hours a day.

5. CONCLUSION

The quality of management of obstetric complications is very poor in the Do district hospital. The lack of rigour and promptness contributes to an increase in maternal mortality. Specific staff training and the availability of blood products and emergency medicines in maternity units would be an asset in improving the quality of care.

CONSENT

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

ETHICAL APPROVAL

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

COMPETING INTERESTS

Authors have declared that no competing interests exist.

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