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Management of Obstetric Emergencies at the Maternity Center of the University Hospital Center of Oueme-Plateau (CHUD O/P) in Benin

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Abstract

Introduction: Obstetric emergencies constitute public health problems in our countries.

Objective: To analyze how obstetric emergencies are managed from the clinical, therapeutic, and prognosis point of view in the gynecology and obstetrics department of the Centre Hospitalier Universitaire Départemental of Ouémé-Plateau.

Patients and methods: It was a cross-sectional, descriptive and analytical study carried out at the maternity CHUD-OP over a period of 06 months from February 2016 to August 2016. It was conducted on an exhaustive sample of all patients admitted to the CHUD-OP maternity and treated for complications of gravido-puerperium. Non-obstetric emergencies were not included. Statistical analysis and testing were performed on CS PRO 6.2 and SPSS software by comparing averages and deviations, using the Pearson chi-square for the dichotomous variables, accepting a significant probability $p \leq 0.05$. The principles of confidentiality were respected.

Results: The frequency of admission of obstetric emergencies was 34.9%. Epidemiologically, the mean age was 27.35 ± 5.71 years. 31.4% were nulliparous, and 69.3% had low-paid occupational activities. Clinically, the reference was in 70.4% of cases the mode of admission, non-medical (95.1%) and without venous access (59.1%). The causes were: dystocia (30.7%); hemorrhagic emergencies (25.9%); hypertensive emergencies (21.5%); fetal hypoxia (17.8%) and infections (4.0%). Therapeutically, the average duration of a treatment was 4.1 ± 1.3 hours and was performed in 67.5% of cases by a caesarean. At the prognostic level, the sequences of layers were complicated in 10.1% of the cases, marked mainly by anemia (38.1%) and arterial hypertension (28.6%). Maternal and neonatal lethality cases represented 3.8% and 11.5%, respectively.

Conclusion: The maternal and fetal mortality rate associated with obstetric emergencies is still high at CHUD-OP. The reductionof morbidity and mortality requires the improvement of the quality of care and the reference system.

Keywords: Obstetric emergency; Morbidity; Mortality; Pregnancy; Delivery

Introduction

The obstetric emergency, the first circumstance of maternal mortality, is a real public health issue. Despite the implementation of multiple programs to combat maternal mortality, about 830 women worldwide die from preventable causes linked to their pregnancy and childbirth with 99% of all maternal deaths occurring in developing countries particularly in sub-Saharan Africa. The maternal mortality ratio in Sub-Saharan Africa is 510 maternal deaths per 100,000 live births, compared to 12 per 100,000 live births in developed countries [1]. In Benin in 2015, out of 100,000 live births, 405 women died from complications of childbirth [2]. Apart from the main causes of maternal deaths, delays in decision-making, access to health facilities and care occupy a no less important place in the worsening of the maternal and perinatal prognosis.

Objective

To analyze the clinical, therapeutic and prognostic aspects of obstetric emergencies in the gynecology and obstetrics department of the Centre Hospitalier Universitaire Départemental of Ouémé-Plateau (CHUD O/P).

Patients and Methods

This was a cross-sectional, descriptive and analytical study conducted at CHUD O/P maternity over a period of 06 months from February 2016 to August 2016. The source population consisted of all pregnant or post-partum patients (0 to 42 days) admitted to the emergency department of the obstetric gynecology department of the CHUD O/P during the study period. The target population was those patients with complications of gravido-puerperality.

The obstetric emergency is defined as any pathological situation occurring during pregnancy, during delivery or within 42 days of the sequelae and in which a diagnosis and treatment must be made very

quickly to preserve the maternal and/or fetal vital prognosis. In operational terms, it is the woman whose life is threatened immediately within 24 to 48 hours by an obstetric pathology [3].

- Inclusion criteria: All patients admitted to CHUD O/P maternity and treated forcomplications of gravoderma-puerperium.
- Criteria for non-inclusion: Non-obstetric emergencies were not included.
- Sampling: It was exhaustive and the sample size was 622 cases of obstetric emergencies. The variables studied were socio-demographic, diagnostic, therapeutic and prognostic. Statistical analysis and testing was performed on CS PRO 6.2 and SPSS software by comparing means and standard deviations, using the Pearson chi-square for the dichotomous variables, accepting a significant probability p 0.05. For ethical considerations, confidentiality and anonymity were respected.

Results

Epidemiological aspects

- Frequency: During the study period, 622 obstetric emergencies were collected on 1784 admissions, a 34.9% prevalence of admissions. 1549 childbirth were performed.
- The average age of patients was 27.3 years old with extremes of 15 and 48 years old. The most represented age group is that of patients aged between 20 and 34 years old (80%). They were primigest and paucigest in 26.5% and 38.7% of cases respectively and had never given birth in 31.4% of cases. The mean gesture was 3.04 ± 1.94 with extremes of 1 and 12 and the mean parity was 1.91 ± 1.92 with extremes of 0 and 10.
- The most represented occupational groups consisted: of salespeople, artisans respectively 42.1%, 27.2%. The majority (63.2%) were enrolled up to primary level in 30.7% (191/622).
- Medical and surgical history: High blood pressure (HTA), blood transfusion, viral hepatitis was found in 14.5%, 6.3% and 2.3% of cases, respectively. A uterine scar was noted in 19.5% of cases.

Diagnostic aspects

- Pregnancy monitoring: Pregnancy monitoring was done 9 times out of 10 by a trained agent. The mean prenatal consultation was 4.38 ± 2.39 with extremes of 0 and 12. Nearly 6 out of 10 pregnancies (62.4%) had at least 4 prenatal visits. The prenatal assessment was partially completed; HIV testing (91.3%); obstetric ultrasound (83.3%); blood grouping (28.4%).
- The reference of a peripheral structure was the admission mode in 70.4% of the cases (438/622). Transportation was unmonitored in 95.2% of cases (417/438), without an ad hoc injection system in 42.2% of cases (185/438). The reference period was 1 to 2 hours in 38.5% of cases.
- Obstetric emergencies involved 87.6% of pregnant women. They occurred at an average gestational age of 35.69 WA ± 7.89 with extremes of 5 and 43 weeks of amenorrhea (WA). The majority occurred in the third trimester of pregnancy (91.9%) (Table 1).

	Number (N=622)	Frequency in Percentage (%)
Pregnant women	545	87.6
1st trimester (<15 WA)	33	6.1
2nd trimester (15-28 WA)	11	2.0
3rd trimester	501	91.9
Term pregnant women [28-37 WA]	101	18.5
Before term pregnant women [37-41 WA]	347	63.7
Post term pregnant women (>41 WA)	53	9.7
Women in postpartum	77	12.4

Table 1: Distribution of patients according to the period (gravido-puerpéralité) of occurrence of emergencies.

Main signs of severity were: palpebral mucosa (19.9%), severe hypertensive (15.1%), meconium amniotic fluid (8.5%), shock (6, 4%), convulsive seizures (4.5%), hyperthermia (4.2%), hemorrhage with high abundance (3.2) and coma (0.2%).

The biological assessments noted severe anemia in 8.8%; leukocytosis in 38.1% and thrombocytopenia in 7.1% of cases.

From the highest to the lowest frequency, there were:

Dystocia (30.7%); hemorrhagic emergencies (25.9%); hypertensive emergencies (21.5%); fetal hypoxia (17.8%) and infections (4.0%).

Dystocia was mechanical in about ¾th of the cases (74.8%) (Table 2).

	Number (N=199)	Frequency in Percentage (%)
Mechanical dystocia	95	47.74
Bone dystocia	55	27.64

Ovular dysfocia	40	20.10
Dynamic dystocia	50	25.12
Other		
Fetal-pelvic disproportion	33	17.2
Pre-rupture syndrome	20	10.4
Failure to commit	1	0.5

Table 2: Distribution of patients by dystocia Distribution of patients according to dystocia.

Hemorrhage in the 2nd and 3rd trimester (43.5%) and postpartum haemorrhage (32.3%) accounted for a significant proportion of hemorrhagic emergencies. Severe preeclampsia dominated hypertensive emergencies with 43.3% of patients (Table 3).

Funicular causes have been the most frequent etiologies in cases of fetal hypoxia; 15 out of 25 had an ovular infection; 9 endometritis and 1 sepsis (Tables 4 and 5).

	Number (N=161)	**Frequency in Percentage (%)**
1st Trimester	39	24.2
Haemorrhagic Abortion	25	15.53
Ectopic pregnancy	13	8.1
Molecular Pregnancy	1	0.6
2nd and 3rd Trimesters		43.5
Placenta previa hemorrhagic	33	20.5
Retro-placental hematoma	28	17.4
Uterine rupture	9	5.6
Postpartum hemorrhage		32.3
Hemorrhage of the deliverance	25	15.5
Contemporary hemorrhage of the deliverance	22	13.7
Postpartum Postpartum Hemorrhage	5	3.1

Table 3: Distribution of patients according to hemorrhagic emergencies.

	Number (N=134)	**Frequency in Percentage (%)**
Pre-eclampsia		
Severe	58	43.3
Moderate	12	9.0
Gestational hypertension	24	17.9
Eclampsia pre and per partum	22	16.4
Postpartum eclampsia	17	12.7
Hypertensive encephalopathy	1	0.7

Table 4: Distribution of patients according to hypertensive emergencies.

	Number (N=63)	Frequency in Percentage (%)
Anemia	24	38.1
High Blood Pressure	18	28.6
Hemorrhage	8	12.7
Infection of the surgical wound	6	9.5
Postpartum eclampsia	4	6.3
Fistule	1	1.6
Sequelae of ophthalmology of hypertension (Blindness)	1	1.6
Motor and neurological sequelae of hypertension	1	1.6

Table 5: Distribution of patients according to the nature of the complications.

Therapeutic aspects

Blood transfusion was required for 118 patients (18.9%) due to severe anemia. The management of hypertensive emergencies was carried out by magnesium sulphate for cases of severe preeclampsia in 95.9% of cases (93/97) and by Clonidine and/or Nicardipine for hypertensive outbreaks according to the protocol.

The delivery was performed by Caesarean section in 83.8% of cases (420/501). The indications were: fetal hypoxia 97.1% (99/102); dystocia 95.4% (187/196); infectious emergencies 93.8% (15/16); hypertensive emergencies 65.5% (76/116); haemorrhagic emergencies 58.9% (43/73).

Furthermore, we performed: 3 hysterectomies of haemostasis (0.5%); 13 salpingectomies (2.9%) for ectopic pregnancy; 25 Manual aspiration intrauterine (4.0%) and 101 uterine revision (16.2%). The rachi-anesthesia was the mode of anesthesia practiced in 61.3% of the cases. The average duration of patient care was 4.18 ± 1.33 hours with extremes of 0.25 (15 min) and 191.30 min.

Prognostic aspects

Maternal prognosis

- Morbidity: The sequels were complicated for 63 patients, representing a rate of 10.1%. Complications were dominated by anemia (38.1%), hypertension (28.6%), hemorrhage (12.7%) and surgical wound infections (9.5%). The duration of hospitalization was 2-7 days in 77% (479/622) of the cases.
- Mortality: We recorded 24 maternal deaths, i.e. a maternal mortality rate of 24/62=0.8%. They were mostly referred (21/24). The causes were from the higher to the lower frequency: hemorrhages (50%), postpartum infections (20.7%) and anemia (12.5%).

Fetal prognosis

- Morbidity: 475 live births out of 537 were recorded (88.4%) with 25.8% having poor adaptation to ectopic life, requiring neonatal resuscitation and neonatal transfer. Neonatal distress (41.6%) and neonatal infection (23.4%), neonatal distress (10.4%) and prematurity (16.9%) accounted for most of the reasons for transfer.
- Mortality: Fetal mortality was 11.5%.

Discussion

Epidemiological aspects

Obstetric emergencies accounted for more than one-third of admissions in our service. A study carried out in 2013 by Tchaou et al. at Parakou University Hospital reported a similar frequency of 31.8% (1,231 obstetric cases including 507 emergencies) [4]. Lower frequencies have been reported by other authors including Kadima et al. [5] in Mali in 2013 (6.03%), Steven et al. in 2012 in America (0.6%), Oliveira et al. (2006) in Brazil (2.1%) [6,7]. These disparate frequencies show that obstetric emergencies remain a public health problem, affecting mainly the developing countries and testify to the level of development of the health system.

According to the WHO, Girard et al. these are preventable causes in the majority of cases [2,8].

Clinical aspects

The reference was the mode of admission in 70.4% of the cases. Our rates are much higher than those of Tshabu at the CUGO and Cissé in Senegal which were respectively 23.3% and 46.7% [9,10].

The Ouémé-Plateau Departmental University Hospital Center is the only public reference center in the Ouémé-Plateau area in southern Benin. It covers an area of 1,676 km^2 and includes a population estimated at 1,100,404 inhabitants in 2013.

This was a non-medical reference (95.1%) and without venous access (59.1%). The reference period was 1 to 2 hours in 38.5%. Tshabu et al. reported to the CUGO that 80.5% of the patients referred were not provided with medical assistance during their transport and without venous access (37.9%) [9]. These poor discharge conditions aggravate the maternal and fetal prognosis and reveal a poor organization of the referral system for obstetric emergencies. These transfers were responsible for 87.5% (21/24) of deaths in our study.

The causes of obstetric emergencies are the same from one study to another, but their ranking differs from one country to another. By 2015, 85% of global obstetric emergencies according to WHO [2] are due to hemorrhages, postpartum infections, high blood pressure and abortions.

In our study, classified by decreasing frequency are: dystocia, hemorrhagic emergencies, hypertensive emergencies, fetal hypoxia of unidentified causes and infectious emergencies with 30.7%, 25.9%, 21.5%, 17.9% and 4.0% respectively.

Dystocias

The frequency of dystocia was 30.7%. They were dynamic and mechanical with a predominance of mechanical dystocia (74.8%). These were pelvic abnormalities (28.6%), fetal pelvic disproportions (17.2%) and dystocia presentations (23.8%). Tchaou et al. [4] also found a predominance of dystocia (32.0%) over a period of 6 months.

These women should have been referenced before any work started if the basin abnormalities were detected.

Haemorrhagic emergencies

They are dominated by hemorrhages in the second and third trimesters of pregnancy (43.5%). They aggravate morbidity and perinatal mortality by induced prematurity and postpartum hemorrhage.

Hypertensive emergencies

Data from the literature show that the prevalence of hypertension during pregnancy varies between 10 and 15% [11]. It is a risk factor for mortality during pregnancy. The prevalence rate of hypertension in our series is 21.5% much higher than the rates found by Hounkponou et al. in Parakou (6.2%) [12].

The hypertension was complicated by eclampsia for 4 patients (6.3%) with 2 deaths rising, the problem of the follow-up of the pregnancies by qualified agents in our countries.

Foetal hypoxia

Perinatal hypoxia involves the vital prognosis of the fetus within hours or even minutes after its installation. It requires fast and adequate care. Philopoulos demonstrates that the use of Fetal Electrical Monitoring is associated with a significant reduction in neonatal and infant mortality [13].

In our series, the prevalence was 17.8%. Caesarean delivery was the mode of delivery in 98% of cases (101/103).

Infectious emergencies

The frequency of infectious emergencies was 4.0% dominated by ovular infection (60%). Higher rates were found by Tchaou in Parakou (12.4%) and Ngbale in Bangui (10.7%) [3,14]. Advances in antibiotic medicine have greatly improved the prognosis of these emergencies. Antibiotic therapy was performed in more than 9 out of 10 women in our study.

Therapeutic aspects

Emergency management met the recommendations in most cases with a surgical penalty in 67.5% of cases.

Pronostic aspects

24 maternal deaths were recorded, i.e. a maternal case fatality rate of 3.8%. This rate is way above the 0.4% reported by Tchaou in 2013 in Parakou [4]. Hemorrhage was the leading cause of death (50%) followed by infections (20.7%). The same finding was made by Chelli et al. in Tunisia, where hemorrhage was implicated in 35.5% of cases in maternal death followed by hypertension (19.3%) [15]. Foumane in Yaoundé found high blood pressure as the leading cause of maternal death (22.4%) followed by HIV/AIDS (19.2%) and septic abortions (17.2%) [16].

The obstetric hemorrhagic emergency constitutes a specific situation which imposes an immediate multidisciplinary management where obstetrician, anesthetist-resuscitator and interventional radiologist are involved.

We have recorded 62 perinatal deaths, 46 of which are per-partum. Neonatal mortality is one of the major contingents of infant mortality in developing countries. Garba et al. in Niger finds a hospital neonatal mortality rate of 85.7% [17].

Conclusion

Our study shows that emergency obstetric care deserves consolidation in our regions with the need to improve the referral system and the ongoing retraining of health workers on emergency obstetric and neonatal care.

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