Scientific Research Publishing

Open Journal of Obstetrics and Gynecology, 2024, 14, 1176-1184
https://www.scirp.org/journal/ojog
ISSN Online: 2160-8806
ISSN Print: 2160-8792

Postpartum Eclampsia in the Department of Obstetrics Gynecology and Reproductive Medicine of the Souro Sanou University Hospital; Burkina Faso: About 76 Cases

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How to cite this paper: Barnabé, Y.R., Amidou, S., Ahmed, K., Evelyne, K.B., Adama, D. and Der Adolphe, S. (2024) Postpartum Eclampsia in the Department of Obstetrics Gynecology and Reproductive Medicine of the Souro Sanou University Hospital; Burkina Faso: About 76 Cases. *Open Journal of Obstetrics and Gynecology*, **14**, 1176-1184.
https://doi.org/10.4236/ojog.2024.148095

Received: July 5, 2024
Accepted: August 10, 2024
Published: August 13, 2024

Abstract

Background: Postpartum eclampsia is a life-threatening obstetric emergency. Its management is multidisciplinary. Despite measures taken to accelerate the reduction of maternal, fetal and infant mortality in Burkina Faso, maternal deaths related to postpartum eclampsia persist. The aim of the study was to investigate the epidemiological, clinical and prognostic aspects of postpartum eclampsia in the obstetrics department of the Sourô Sanou University Hospital in Bobo-Dioulasso. **Method:** This was a descriptive cross-sectional study with retrospective data collection covering the period from June 1, 2018 to May 31, 2019. We included 76 patients in the study; the variables studied were the epidemiological, clinical and prognostic aspects. The data collected were entered on a microcomputer and analyzed with the EPI info version 7.2 software. **Results:** The prevalence of postpartum eclampsia was 0.87% compared to admissions to the obstetrics department. The average age of the patients was 23 years old with the extremes of 15 and 39 years old. Primiparas accounted for 39.47%, housewives 53%, and home births accounted for 15.79%. Seizures accounted for 55% of the reasons for admission, the average time to onset of these seizures postpartum was 3.8 days with extremes of 1 and 30 days with 45% of seizures occurring postpartum immediately. Maternal complications were noted in 42.10% of cases with 5 cases of Hellp syndrome, 3 cases of renal failure, and 3 cases of acute pulmonary edema. We recorded 4 cases of maternal death, representing a case fatality rate of 5.2%. **Conclusion**: Postpartum eclampsia is common in the obstetrics department of the Souro Sanou University Hospital Center with a significant case fatality rate. Empha-

sis should be placed on monitoring and prevention, especially women at risk of developing postpartum eclampsia for better maternal prognosis.

Keywords

Eclampsia, Postpartum, Epidemiology, Prognosis

1. Introduction

According to the World Health Organization (WHO), the association of hypertension and pregnancy constitutes a genuine public health problem. These complications are dominated by eclampsia and premature abruption of the normally inserted placenta (PINP) [1]-[3]. Eclampsia is a serious complication of pregnancy, responsible for significant maternal morbidity and mortality. It is defined by the occurrence of one or more seizures and/or altered consciousness before, during and after delivery, irrespective of known pre-eclampsia [4]-[6]. According to literature reviews, frequencies differ from country to country. In developed countries, eclampsia is a rare phenomenon, with a worldwide frequency of 4.9 per 100,000 births [4] [7]. The highest incidences are reported in countries with limited resources. In sub-Saharan Africa, its incidence varies between 9 and 34 per 1000 live births [4] [8] [9]. Eclampsia can occur ante, per or post-partum. Among postpartum eclampsia, early and late forms are distinguished according to whether the convulsive seizure occurs before or beyond 48 hours after delivery [10] [11]. In Burkina Faso, studies carried out on eclampsia noted a hospital frequency varying between 1% and 9‰ [1] [2] [12]-[15]. At Hôpital Sourou Sanou, few studies have been conducted on eclampsia [14] [15] in particular postpartum eclampsia. The aim of the present work is to study the epidemiological, clinical and prognostic aspects of postpartum eclampsia in the obstetrics department of the Sourou University Hospital in order to contribute to the reduction of maternal mortality.

2. Method

The study took place in the obstetrics department of the Souro Sanou University Hospital in Bobo Dioulasso. It was a descriptive cross-sectional study with retrospective data collection from June 1, 2018 to May 31, 2019, a 12-month period. The study included all patients who had given birth or had been admitted to the obstetrics department after childbirth, and in whose records a diagnosis of eclampsia had been made. We carried out an exhaustive sampling of all cases of post-partum eclampsia for which the records were usable. A total of 76 patients were included in the study. We collected the data ourselves and the technique used was literature review using a questionnaire containing the study variables. Patient files and hospitalization registers were used as data sources. The variables collected were epidemiological, clinical and biological parameters, as well as the evolution of patients hospitalized for post-partum eclampsia during the

study period. A pre-test carried out at the Dafra medical center with surgical branch on September 15, 2019 validated the collection. Data were entered and analyzed on a microcomputer using Epi-Info version 7.0 software. Our variables were described using tables in which descriptive statistics such as means, standard deviations and proportions were highlighted. The authorization of the competent authorities of the Souro sanou University Hospital and the favorable opinion of the ethics committee of Burkina Faso were obtained prior to data collection. The anonymity of patient names on the files was respected.

3. Results

3.1. Epidemiological Aspects

During the period of our study, we recorded 76 cases of postpartum eclampsia out of a total of 8714 admissions, *i.e.* a frequency of 0.87%. The average age of our patients was 23, with extremes of 15 and 39; the 20 - 24 age group accounted for 33%. Housewives were found in 70% of cases (Table 1).

Table 1. Distribution of patients by socio-demographic characteristics.

Sociodemographic characteristics	Number	Percentage
Age group (years)		
15 - 19	30	39.5
20 - 24	25	33
25 - 29	9	11.84
30 - 34	6	7.89
35 - 39	6	7.89
Main occupation		
Housewife	53	70
Tradeswoman	8	10.5
Employees	2	2.5
Students	13	17
Origin		
Rural	55	72
Urbain	21	28
Parity		
Primipare	30	39.47
Paucipare	14	18.42
Multiparous	6	7.89
Large multiparous	26	34.21
Place of delivery		
Health center	64	84.21
Home	12	15.79
Pregnancy follow-up		
Regularly monitored	27	35.53
Irregularly	49	64.47

3.2. Clinical Aspects

Among the reasons for admission, loss of consciousness accounted for 24%, hypertension 21% and seizures 55%. The average time to onset of seizures in the post-partum period was 3.8 days, with extremes of 1 and 30 days. Patients who convulsed on the first postpartum day accounted for 45%, between days 2 and 7 for 22.5%, between days 8 and 14 for 23.5%, between days 15 and 21 for 6.5% and between days 21 and 30 for 2.5%. The average number of seizures was 4.1, with extremes of 2 and 12. More than half (58%) had more than three seizures. Predictive signs of eclampsia were headache (30.3%) and visual disturbances (19.69%). In terms of general signs, 43.5% of patients were in poor general condition, with systolic blood pressure over 160 mmhg in more than half the cases. Predictive signs of eclampsia and general signs are shown in Table 2 and Table 3 respectively.

Table 2. Distribution of patients according to signs predictive of postpartum eclampsia.

Functional signs	Number	Percentage
Headache	20	30.3
Visual disturbances	13	19.69
Epigastric pain	12	18.18
Ringing in the ears	11	16.66
Sharp osteotendinous reflexes	10	15.15

Table 3. Distribution of patients according to general signs on admission.

General signs	Number	Percentage
General condition		
Good	1	1.5
Fair	42	55
Poor	33	43.5
Awareness		
Clear	36	47.5
Obsessive	32	42
Comatose	8	10.5
Clinical anemia		
Yes	13	17
No	63	83
Oedema of lower limbs		
Yes	14	18.5
No	62	81.5
Systolic blood pessure (PAS)		
<140 mmhg	2	2.7
140 mmhg < PAS ≤ 160 mmhg	36	47.3
>160 mmhg	38	50

Continued

Diastolic blood pressure (PAD)		
90 mmhg	5	6.5
91 mmhg < PAD ≤ 109 mmhg	35	46
>110 mmhg	36	47.5
Presence of fever		
Yes	8	10.5
No	68	89.5

3.3. Biological and Radiological Data

Urea and creatinine levels were taken in all patients. Three cases of renal failure were diagnosed, *i.e.* 4%, with creatinine levels above 90 µmol. Albuminuria was greater than or equal to 4 crosses in 92% of cases, with extremes of 2 and 4 crosses. Liver function tests were carried out in 40 patients (52.5%). Elevated liver enzymes were found in 5 patients (12.5%). Obstetrical ultrasound was performed in all 76 patients, and revealed placental debris in 21 (27.63%). Electrocardiograms were performed on 7 patients during hospitalization, *i.e.* 9.2%, with 3 cases showing no particularities and 4 cases showing abnormalities such as sinus bradycardia, right bundle branch block, subepicardial ischemia and anteroseptal ischemia respectively. Fundus examinations were performed in 6 patients (8%), with 3 patients showing abnormalities such as bilateral partial retinal detachment, hypertensive retinopathy and vitreous haemorrhage, and 3 patients with no abnormal fundus findings.

3.4. Maternal Prognosis

In our study, 32 patients presented complications attributable to eclampsia, *i.e.* 42.10% of our sample. Among these complications, 3 cases of acute lung edema were reported; 13 patients (17%) were anemic, 3 cases (4%) of renal failure, 5 cases (6.57%) of Hellp syndrome, 5 cases (6.57%) of cardiac abnormalities on electrocardiogram and 3 cases (4%) of fundus abnormalities such as bilateral partial retinal detachment, hypertensive retinopathy and vitreous hemorrhage. We recorded 4 cases of maternal death, for a case-fatality rate of 5.2%.

4. Discussion

4.1. Epidemiological Aspects

Post-partum eclampsia remains a fairly frequent pathology in our context; we found a frequency of 0.87% in relation to admissions to the obstetrics department. This rate is similar to those reported by Belley in Douala and Chhabbra [16] in India, who reported 0.95% and 0.98% respectively in their series. It is higher than those of Lubarsky in the USA [17], Ducarme in France [18]; Bourret in Rouen [19], who reported respective rates of 0.29%, 0.81‰ and 0.35‰ of postpartum eclampsia in their studies. Analyzing these results we note a great

variability in the frequency of postpartum eclampsia across countries and even regions of the globe. In fact, in developed countries, thanks to better organization of prenatal surveillance and improved patient care, the incidence of this condition is low. In developing countries, on the other hand, the high incidence may be linked to inadequate health coverage and poor management of hypertensive states associated with pregnancy. Several studies report a higher incidence of postpartum eclampsia in younger patients [16] [20]. Similarly, a study in Uganda found that postpartum eclampsia was more common in patients under 24 years of age [21]. This confirms our results, where the average age of our patients was 23, with 33% under 24. Regarding origin, the majority of patients in our series came from rural areas, with a proportion of 72%. This is indicative of the urgency of eclampsia and the difficulty of managing it in peripheral health centers, due to limited technical resources. In our study, housewives were in the majority (70%). This vulnerability may be linked to the physical and psychological overwork to which they are exposed, and which predisposes them to severe pre-eclampsia that can complicate into eclampsia in the postpartum period if not treated properly.

4.2. Clinical Features

The clinical picture of eclampsia includes seizures superimposed on existing symptoms of pre-eclampsia. In our study, seizures were noted as the reason for admission in 55.26% of cases. The vast majority of seizures usually occur within the first 48 hours postpartum [22]. We reported 45% of cases occurring in the immediate postpartum period. This should not obscure the possibility of eclampsia occurring several weeks after delivery, as reported by Minnerup et al [23] in Germany, with postpartum eclampsia occurring 8 weeks after delivery. Headache, visual disturbances, epigastric pain and sharp osteotendinous reflexes are the only clinical signs predictive of eclampsia. At least one of these is found in 85% of cases [24]. Patients with delayed eclampsia report the occurrence of these predictive signs in the hours preceding the attack, and admit not having consulted a doctor [25]. They attribute these symptoms to postnatal fatigue. We noted respectively 30% of headaches and 19.69% of visual disturbances. Eclampsia is accompanied by a disturbance in the state of consciousness, progressively ranging from a dazed state to coma. In our series, 10.53% of patients were in coma. This can be explained in part by the rapid evolution of the pathology, but also by the delay in consultation and accessibility of health and care centers.

4.3. Maternal Prognosis

In our series, we noted 31.6% of maternal complications attributable to eclampsia. Conde-agudelo [26] in Colombia found 30% maternal complications, similar to our rate. Postpartum eclampsia is a life-threatening obstetric emergency. Properly managed, the outcome can be favorable, but death can also occur in cases of delayed consultation and poor management including failure to comply

with the magnesium sulfate and catapressan protocol, and inadequate vascular filling. The case fatality rate for postpartum eclampsia in our study was 5.2%. Lubarsky [17] in the USA and Sibai [27] in England found no eclampsia-related maternal deaths in their studies. The deaths observed in our study were related to a delay in consultation, and these patients were admitted in a comatose state.

4.4. Limitations

The retrospective nature of our study was a source of limitations, notably the lack of information in certain files, and the state of consciousness of certain patients at entry. Despite these limitations, we arrived at these results, which we have compared with data in the literature.

5. Conclusion

Postpartum eclampsia is common in the obstetrics department of the Souro Sanou University Hospital, with a non-negligible case-fatality rate. This study exposes the realities faced by some patients, due to their socio-demographic profile and pregnancy follow-up. Emphasis should be placed on monitoring and prevention, especially for women at risk of developing eclampsia in the postpartum period, for a better maternal prognosis.

Conflicts of Interest

The authors declare no conflicts of interest regarding the publication of this paper.

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