

Research Article

# Eclampsia: Sociodemographic Aspect, Management and Maternal and Fetal Prognosis in the Gynecology - Obstetrics Department of the Ignace Deen National Hospital, CHU of Conakry

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## Abstract

**Introduction:** Eclampsia is a serious complication of pre-eclampsia that poses short-term maternal and fetal life-threatening risks. The objectives were to calculate the frequency of eclampsia, to describe the sociodemographic profile, the management and the maternal and fetal prognosis of eclamptic patients treated in the department. **Methodology:** This was a prospective, longitudinal, descriptive study. of 6 months from August 1, 2023 to January 31, 2024 carried out at the reference maternity of the Ignace Deen National Hospital in Conakry, Guinea, covering all women received for eclampsia occurring during pregnancy, labor and postpartum during the study period, whose acceptance of participation in the study was obtained either through the patients themselves or through their parents. **Results:** during the study period, we recorded 3,101 deliveries, including 82 cases of eclampsia, representing a frequency of 2.64%. These were mainly young patients in the 15-19 age group (35.0%), housewives (40.0%), not in school (39.0%), married (83.0%) and primiparous 73.2%. Maternal complications were dominated by eclamptic coma (24.4%) and status eclampticus 11.0%. The maternal case fatality rate was 7.2%. Prematurity (43.9%), stillbirths (15.3%) and hypotrophy (13.4%) were the main neonatal complications with 22 cases of perinatal deaths recorded. **Conclusion:** The frequency of eclampsia as well as maternal and neonatal morbidity and mortality were not negligible despite the improvement in the conditions of pre-eclampsia management in our health structures. Early and adequate management of eclampsia could contribute to the improvement of the maternal-fetal prognosis. **Keywords:** eclampsia, sociodemographic aspect, management, maternal - fetal prognosis, Conakry.

## Keywords

Eclampsia, Sociodemographic Aspect, Maternal and Fetal Prognosis, Conakry

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## 1. Introduction

Eclampsia is a serious complication of pre-eclampsia that threatens maternal and fetal life in the short term [1]. Eclampsia is one of the leading causes of maternal death in developing countries where its incidence is still high [1]. It has become rare in developed countries thanks to early screening of high blood pressure (HBP) [2]. It is characterized by a convulsive attack followed by a comatose state, occurring during the last months of pregnancy, labor or more rarely postpartum [3]. Maternal complications of eclampsia are mainly dominated by acute pulmonary edema (APE), acute renal failure (ARF), retroplacental hematoma (RPH), cerebrovascular accident (CVA), HELLP syndrome, status eclampticus and eclamptic coma. However, fetal ones are dominated by intrauterine growth retardation, acute or chronic fetal hypoxia, prematurity and fetal death in utero [4]. It is responsible on average for 15% of maternal mortality and has a perinatal lethality of 40% [2]. Eclampsia is responsible for 50,000 deaths per year worldwide [5]. In France, Ducarne et al. in 2009 reported an incidence of eclampsia of 0.08% in the Gynecological and Obstetric Surgery Department of the Jean-Verdier University Hospital with a predominance of HELLP syndrome (62.5%) and intrauterine growth retardation (43.8%) [5].

In Morocco, B. Sabir et al. in 2006 revealed a prevalence of 19% in the maternity ward of the Ibn-Rochd University Hospital over a period of 3 years with 12.13% of acute renal failure (ARF) [6].

In Ivory Coast, Kouadio et al. in 2019 revealed an incidence of eclampsia of 1.69% at the Bouaké University Hospital over a period of 2 years with 15% of IRA and 40% of acute fetal distress (AFD) [7]. In Guinea, Baldé O et al. in 2017 reported a frequency of eclampsia of 2.4% in the gynecology and obstetrics department of the Donka National Hospital during a period of 6 months with 47.2% of retro-placental hematoma (RPH) and 34.6% of acute fetal distress [3]. Thus, the high frequency of eclampsia, the maternal and fetal complications generated motivated the realization of this work which had the objective of calculating the frequency of eclampsia, of describing the sociodemographic profile, the management and the maternal and fetal prognosis of eclamptic patients treated in the department.

## 2. Methodology

### 2.1. Type and Duration of the Study

This was a Prospective, Longitudinal Descriptive Study of a 6-Month Period From August 1, 2023 to January 31, 2024 Carried Out at the Reference Maternity Ward of the Ignace Deen National Hospital in Conakry, Guinea.

All women admitted for eclampsia occurring during pregnancy, labor and postpartum during the study period and who agreed to participate in the study were included in the study; those who were unconscious obtained parental permission.

We conducted exhaustive recruitment of all cases that met the inclusion criteria.

These data were collected by interviewing patients or their entourage and observing the care from reception to discharge.

The variables were qualitative and quantitative, including sociodemographic, clinical and prognostic data.

### 2.2. Data Analysis

Data analysis was carried out using SPSS software in its version 21. For qualitative variables, we calculated proportions and for quantitative variables, means with standard deviations and extremes were calculated.

### 2.3. Ethical Considerations

Informed consent was obtained from participants or their families. Confidentiality and anonymity were maintained. The results obtained will be used solely for scientific purposes.

## 3. Results

During the study period we recorded 3101 deliveries including 82 cases of eclampsia, a frequency of 2.64%.

**Table 1.** Sociodemographic characteristics and obstetric history of eclamptic patients treated at the Gynecology-Obstetrics Department of the Ignace Deen National Hospital in Conakry from August 1, 2023 to January 31, 2024 (N=82).

Features	Staff	Percentage
Maternal age (years)		
15-19	29	35.4
20-24	21	25.6
25-29	15	18.3
30-34	11	13.4
≥ 35	6	7.3
Average: 23.6±6.1 years	Extremes: 15 and 35 years old	
Occupation		
Housewife	33	40.0
Students	18	22.0
Liberal Profession	22	26.8
Employees	9	11.0
Educational level		

Features	Staff	Percentage
Not in school	32	39.0
Primary	9	11.0
Secondary	29	35.4
Superior	12	14.6
Marital Status		
Bride	68	83.0
Bachelor	14	17.0
Parity		
Primiparous	60	73.2
Pauciparous	16	19.5
Multiparous	6	7.3
Average parity: 1.11±1.3	Extremes: 1 and 5	

**Table 2.** Maternal complications of eclamptic patients treated at the Gynecology-Obstetrics Department of the Ignace Deen National Hospital in Conakry from August 1, 2023 to January 31, 2024 (N=82).

Complications	Staff	Percentage
Eclamptic coma	20	24.4
Status eclampticus	9	11.0
IRA	7	8.5
HRP	5	6.1
OAP	3	3.7
Hellp syndrome	3	3.7
stroke	1	1.2

IRA: Acute renal failure; PHR: Retroplacental hematoma; PAO: Acute pulmonary edema; CVA: Cerebrovascular accident.

**Maternal lethality:** During the study period, we recorded 6 cases of maternal death out of a total of 82 eclamptic patients, all of whom died in eclamptic coma, representing a lethality rate of 7.2%.

**Table 3.** Distribution of newborns according to Apgar score at the 1st and 5th minute (N=83).

Apgar score	Staff	Percentage
1st minute		
0	11	13.3

Apgar score	Staff	Percentage
1-6	22	26.5
≥7	50	60.2
Average: 7.03±3.36 out of 10	0 and 10	
5th minute		
0	11	13.3
1-6	1	1.2
≥7	71	85.5
Average: 8.18±3.45 out of 10	Extremes: 0 and 10	

**Table 4.** Distribution of newborns according to their condition at birth (N=83).

State at birth	Staff	Percentage
Prematurity	36	43.9
Hypotrophy	11	13.4
Stillborn	13	15.3

**Perinatal mortality:** during the data collection period, We recorded 22 cases of perinatal deaths, including 13 cases of in-utero fetal death and 22 cases of early neonatal deaths.

### 4. Discussion

Our frequency The frequency of eclampsia was 2.64%. This was close to those found by Kampo et al. [1] in 2020 in Mali and Diouf et al. [7] in 2013 in Senegal with 2.34% and 1.35% respectively, but lower than that found in France by Ducarme et al. [5] in 2009 with a frequency of 0.08%.

This high frequency in our series could be explained by the fact that the maternity ward of the Ignace Deen National Hospital has been the only level III reference center for obstetric emergencies for 10 years, taking care of parturients coming from secondary structures (public and private) in the capital and its outskirts due to the closure of the Donka maternity ward for renovation work.

Sociodemographically, the mean age of patients was 23.6 years, which was similar to that found in the Congolese study conducted by Guimbi et al. [8] in 2009 which reported an average age of 23.6 years with extremes of 16 - 42 years.

The predominance of housewives (40%) observed in our study corroborates that of Ouattara et al. [9] in 2014 in Burkina Faso reporting a higher proportion than ours (62.80).

According to our results, patients who were not in school were the most frequently encountered with 39%, which is close to the result of Belley Priso et al. [10] in 2009 in Cam-

eroneo who reported a low level of education in more than three-quarters of the eclamptic patients included in their study.

Primiparity concerned approximately 3/4 of women, i.e. 73.9%. This result is similar to those of Buambo-Bamanga et al. [2] in 2009 in Congo and Ardhaoui et al. [11] in 2015 at the Ibn Rochd University Hospital in Morocco with respectively: 68.4% and 63.4%. This could be explained by the fact that primiparity is a predisposing factor for the occurrence of eclampsia.

Fetal heart sounds were absent in 20% of cases, which is higher than those noted by Ouattara et al. [9] in 2014 in Burkina Faso with an absence of FHS (Fetal Heart Sounds) in 17.7%.

In our series, 1/3 of patients, or 39%, developed maternal complications with a predominance of eclamptic coma in approximately 1/4 of cases, or 24.4%. This is higher than that of Ouattara et al. [9] in 2014 in Burkina Faso which recorded 22.7% of maternal complications with a predominance of eclamptic coma in 7.9%. This could be explained by the late evacuations of eclamptic patients in our structure with an altered general condition in the majority of cases.

The high evacuation rate in the study was due either to insufficient technical equipment, or to a lack of hospitalization space in peripheral health structures and/or qualified personnel.

Maternal case fatality recorded in this study was 7.3%, which is lower than that of Bekoin-Abhe et al. [12] in 2021 in Ivory Coast which reported 15.3%. This result would be due to collaboration between obstetrics and intensive care services. However, the ultimate objective remains zero maternal mortality as in the series by Ducarme et al. in France [5]. Eclamptic coma was the only cause of death encountered in this series. The late evacuation of patients, the poor clinical condition at reception marked by a deep comatose state, the difficult access to the intensive care unit of the Ignace Deen National Hospital due to limited reception capacity could explain these cases of death in this clinical picture.

The prematurity rate observed in our series was 43.9%, which is significantly higher than that of Traoré et al. [13] in 2020 in Mali who found 29.5%. Perinatal lethality was high (25.9%). This frequency is higher than that found by Kampo et al. [1] in 2020 in Mali with 21.5%. This could be explained by the absence of a neonatology unit in this health facility for rapid care of newborns in distress. The newborns in distress were all evacuated to the INCH (Institute of Nutrition and Child Health) of the Donka National Hospital, which is the only neonatology department for the entire city of Conakry and its outskirts.

## 5. Conclusion

This work shows a significant frequency of eclampsia despite the improvement in the conditions for managing pre-eclampsia in our health structures.

The epidemiological profile was that of a young, uneducated, married, primiparous patient. Eclamptic coma and status eclampticus were the most common maternal complications, and neonatal complications included prematurity and stillbirths. Maternal and perinatal lethality were high.

Early and adequate management of eclampsia could contribute to improving maternal-fetal prognosis.

## Abbreviations

ARF	Acute Renal Failure
CHU	University Hospital Center
RPH	Retroplacental Hematoma
FHS	Fetal Heart Sounds
APE	Acute Pulmonary Edema
HBP	High Blood Pressure
AFD	Acute Fetal Distress
INCH	Institute of Nutrition and Child Health

## Author Contributions

All authors contributed to the completion of this work.

## Conflicts of Interest

The authors declare no conflicts of interest.

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