

## Eclampsia at N'Djamena South District Hospital, Chad: epidemiological aspects and foeto-maternal prognosis

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### Abstract

**Background:** Eclampsia is the second cause of maternal death in Chad. It constitutes one of the most difficult obstetric emergencies at N'Djamena south district hospital.

**Objective:** The aim of this work was to determine the eclampsia' epidemiologic aspects, and the foeto-maternal prognosis.

**Methods:** This was a retrospective descriptive and analytic survey for one year (January, 1<sup>st</sup> 2014 to December, 31<sup>st</sup> 2014) conducted at N'Djamena south district hospital. The study sample consisted of two groups: Survey group composed of eclampsia patients; Control group in which three women recorded after every eclampsia positive case were included systematically. Chi-square ( $X^2$ ) test ( $p < 0.05$ ) was used to compare variables.

**Results:** The incidence of eclampsia was 02.55%. The age of the patients varied between 15 and 43 years, average 28.1 years. The age group between 15-19 years were more represented 46%. Forty-eight per cent of the survey group have never done prenatal consultation. The majority of patients (60%) presented eclampsia during pregnancy. Fifty eight per cent of newborns had no abnormality but 10% had intrauterine death. The mother prognosis was marked by four maternal deaths (8%).

**Conclusion:** The incidence of eclampsia is increasing in Chad in relation to previous reports. Foeto-maternal prognoses are marked by high mortality rate, which calls for increased awareness education and improved prenatal care programs.

**Key words:** Eclampsia Epidemiology, Foeto-maternal prognosis

### Introduction

According to 2004 report the maternal' death rate in Chad was estimated to be 1089 for every 100,000 living births [1] and it is the most elevated in the sub-Saharan Africa region. Eclampsia was reported to be the second highest cause of maternal deaths [2]. Pre eclampsia' complications were also reported to constitute the most difficult obstetric emergencies at N'Djamena south district hospital. Such eclampsia related deaths could reduce with improvement of prenatal care services and programs.

General lack or insufficient prenatal care services coupled by poor health facilities and poor treatment make the prognosis poor [4]. Death related to eclampsia occurs in 0.1 to 10% of the cases in Chad [5,6]. However, exact epidemiological situation of eclampsia in the country is scanty or none existent. The aim of this study therefore was to determine the epidemiology of foeto-maternal eclampsia and their prognosis at N'Djamena south district hospital.

### Materials and Methods

This was a retrospective descriptive and analytic study covering the period of one year, January to December 2014. The population consisted of pregnant women who gave birth or were admitted post-partum in N'Djamena south district hospital during the period of the survey.

The study sample consisted of two groups: (i) The study group composed of eclampsia patients and (ii) The control group in which three eclampsia negative pregnant women or newly delivered women were recorded after every eclampsia positive case.

Data analysis was done by Epi info 6.0 French. Chi-square ( $X^2$ ) test ( $p < 0.05$ ) was used to compare variables.

## Results

*Prevalence of eclampsia:* Overall 1957 child birth cases were recorded during the study period in which 50 (2.5%) were eclampsia positive (Table 1).

**Table 1:** Age distribution of eclampsia positive patients and none positive controls

Age group	Eclampsia (+) No. (%)	Eclampsia(-) No. (%)	P-value
15-19	23(46)	20(13.3)	0.647
20-24	12(24)	57(38)	
25-29	6(12)	35(23.3)	
30-34	4(8)	29(19.3)	
≥35	5(10)	9(6)	
Total	50(100)	150(100)	0.285

Age distribution of the patients varied between 15 and 43 years, mean 28.1 years in which more women were recorded in the age group 15 to 19 years.

*Mode of admission and source:* More than half of the patients ( $n=27/50$  i.e. 54%) lived in rural zone. Majority (76%) of the patients were referred from peripheral health facilities. Data on antenatal survey indicated that 48% of the eclampsia positive women did not have antenatal consultations and only 16% had 4 or more antenatal consultations (Table 2) as required by WHO.

**Table 2:** Surveillance of pregnancy and the parity

Prenatal or visits	Eclampsia (No.) (%)	No eclampsia (-) (No.) (%)	P value
None	24 (48)	23 (15.3)	0.884
1-3	18 (36)	30 (20)	0.083
≥4	8 (16)	97 (64.7)	
Total	50 (100)	150 (100)	
Parity	Eclampsia (No.) (%)	No eclampsia (No.) (%)	P-value
Uniparas	21 (42)	36 (24)	0.465
Pauciparas	16 (32)	64 (42.7)	0.000
Multiparas	13(26)	50 (33.3)	
Total	50 (100)	150 (100)	

**Table 3:** Period of contracting eclampsia

Contracting period	No.	(%)
Pregnancy	30	60
Per partum (during delivery)	17	34
Post-partum	3	06
Total	50	100

The majority of patients (60%) were diagnosed with eclampsia during pregnancy.

*Term of pregnancy and health status:* Fifty eight (58%) carried pregnancy to full term (superior to 37 weeks) while this was 34 weeks and 36 weeks 6 days for 16%. Most of the women (78%) were conscious while 10% were in a coma.

*Method of delivery:* About half (52%) of the women had Caesarean section.

*Foetal prognosis:* In the data on foetal prognosis, 64% had a score of Apgar  $\geq 8$  at 1<sup>st</sup> minute while 4% of the foetuses scored Apgar  $\leq 3$  at 1<sup>st</sup> minute (Table 4).

**Table 4:** Foetal prognosis

Foetal prognosis	Eclampsia (+) No. (%)	Eclampsia (-) No. (%)	P value
Normal	29 (58)	114 (76)	0.275
Small for term	8 (16)	13 (8.7)	
Prematurity	4 (8)	8 (5.3)	
Intrauterine death	5 (10)	4 (2.7)	0.738
Precocious neonatal death	1 (2)	5 (3.3)	0.102
Neonatal asphyxia	3 (6)	6 (4)	
Total	50 (100)	150 (100)	

Majority (58%) of newborns did not show any abnormality but 10% of fetus had died intrauterine as compared to 76% without abnormalities and only 2% fetal mortality rate in the control group.

*Maternal prognosis:* Eight (8%) in the group of eclampsia positive died (three presented a cerebral vascular accident another one a renal deficiency). In the control group we recorded one death (0.7%,  $p=0.179$ ).

## Discussion

Eclampsia incidence of 2.5 was recorded in the current study out of 1957 births that took place within a period of one year in N'djamena south district hospital, Chad. The rate was higher than those reported in other studies on eclampsia in Africa [6-9]. Such high incidence could be associated with the high number of patients visiting the study hospital and its proximity to the rural communities whose record of antenatal visits was poor [6].

Adolescence constitutes an important risk factor for onset of eclampsia [10]. Adolescence age group (15-19 years) recorded significantly higher incidence of eclampsia than the control counterparts, 46% vs. 13.3% ( $p=0.647$ ). This was also higher than that recorded in the older age groups, an observation that was also reported in earlier studies [6-11].

Data on parity in relation to incidence of eclampsia indicated significantly higher incidence (42%) in primiparous against 24% in the control group ( $p=0.465$ ).

This was contrary to earlier report that multiparas constituted more than half of the number of patients with eclampsia [9]. Other studies also in Africa [7, 12, 13] reported the primiparous as the main high risk group constituting more than half of the eclampsia patients.

Prenatal consultations play an important role in the prevention of eclampsia such that the higher rate of prenatal consultations the lower the incidence of eclampsia [4]. We recorded significantly higher number (48%) of the eclampsia patients in those who did not have any prenatal consultation against 15.3% in the control group ( $p=0.884$ ). However, this was a reverse of earlier report in which eclampsia was reported in 48.75% of patients who had been followed during pregnancy [6]. Such discrepancy could point to other factors which were not considered in either studies including the study set up or the delivery of services in the relevant facilities.

The findings in this study recorded 8% mortality rate from the eclampsia mothers and 0.7% for controls ( $p=0.179$ ). The rate was higher than that reported in various studies conducted elsewhere [8, 13-15] but lower than 17.9% reported in Dakar [7]. The high mortality rate could be attributed to delays to seek medical care and to the traditional beliefs that associate eclampsia symptoms with witchcraft.

Other clinical signs observed included hypotrophy in 16% of the new-borns from eclampsia mothers compared to 8.7% in the control mothers ( $p=0.275$ ) a finding that was also observed in an earlier study [12].

For foetal prognosis, significantly high number (10%) of intrauterine death was recorded in the test group but only 2.7% in the control group ( $p=0.738$ ) The rate of stillbirth was close to that reported in an earlier study [14].

Significant negative correlation in neonatal death rate was recorded in foetuses from the eclampsia cases (2%) compared to 3.3% in the control group, ( $p=0.102$ ). The discrepancy could be due to poor services, poor health facilities and poor access to health facilities from the rural areas.

## Conclusion

The prevalence of eclampsia was reported in this study is higher than previously reported. Prognosis for foetus and the mother was poor and associated with high mortality rate. Incidence of eclampsia and foeto-maternal complications reduced with improvement of prenatal surveillance consultations. It is therefore important to introduce early the prenatal education for awareness of eclampsia related symptoms like severe headaches, fuzzy vision, and generalized oedema.

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