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Pre-Eclampsia at Laquintinie Hospital (Douala): Survey of Prevalence and Morbidity from 2010 to 2015

La pré éclampsie à l'Hôpital Laquintinie (Douala) : enquête de prévalence et de morbidité de 2010 à 2015

Essome. H[1,3], Mve Koh V[2], Ekono M[1], M Essiben F[2], Boten M[3], Tocki T. G[3], Foumane P[2].

1: Faculty of Medicine and Pharmaceutical Sciences University of Douala

2: Faculty of Medicine and Biomedical Sciences University of Yaounde I

3 : Laquintinie Hospital Douala

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Corresponding author : Essome Henri essometocky@yahoo.com
Tel : +237 696 47 56 72

RÉSUMÉ

Objectif. La prééclampsie (PE) est la maladie hypertensive la plus fréquente et la plus grave en grossesse Sa létalité demeure élevée dans les pays développés et encore plus dans les séries africaines. Notre objectif était de déterminer la prévalence de la PE et de décrire ses complications à l'Hôpital Laquintinie de Douala. **Matériel et Méthodes :** Nous avons mené une étude descriptive à collecte des données rétrospective pendant 03 mois (18 janvier 2016 au 18 avril 2016) à partir des dossiers de gestantes reçues au service de gynécologie-obstétrique sur une période de 6 ans allant du 1er janvier 2010 au 31 décembre 2015 à l'hôpital Laquintinie de Douala. Nous avons identifié les gestantes ayant eu une TA≥140/90mmHg associée à une protéinurie>0,3g/24h ou à une albuminurie significative (2++) sur bandelette urinaire survenue après 20 semaines d'aménorrhée. **Résultats :** Sur les 17644 accouchements enregistrés durant notre période d'étude, nous avons retrouvé 1080 cas de PE, soit une fréquence de 6,12%. La PE était fréquente chez les primipares (46,7%), dans la tranche d'âge de [20-29] ans. Les gestantes âgées de moins de 20 ans étaient les plus touchées par l'éclampsie. La pré-éclampsie était fréquemment retrouvées chez les gestantes porteuse d'une grossesse gémellaire et ou celles au fœtus macrosome avec respectivement 10,1% et 8,9% de fréquence. Les multipares ayant présenté une prééclampsie avaient souvent un antécédent de PE (43cas soit 4%), d'hypertension artérielle (55cas soit5,1%) et/ou de diabète (5cas soit 0,5%). L'éclampsie représentait la principale complication maternelle (29,7%). Le taux de létalité maternelle était de 0,5%. Les complications fœtales étaient dominées par la prématurité induite (19,5%) et la mort fœtale in utéro (9,4%). **Conclusion :** Cette étude nous révèle que la prééclampsie est fréquente à l'hôpital Laquintinie de Douala avec taux de morbi-mortalité materno- fœtale élevé et demeure donc de ce fait un problème majeur de santé publique.

ABSTRACT

Objective: to determine the prevalence of pre-eclampsia and describe its complications at Laquintinie Hospital in Douala. **Methods**: We conducted a descriptive study with retrospective data collection for 03 months (January 18, 2016 to April 18, 2016) from the records of pregnant women received at the gynecology-obstetrics department over a 6-year period from 1st January 2010 to 31st December 2015 at Laquintinie Hospital in Douala. We identified pregnant women with BP≥140 / 90 mmHg combined with proteinuria> 0.3g / 24h or significant albuminuria (2+) on urine strips after 20 weeks of amenorrhea. **Results**: Of the 17644 deliveries recorded during our study period, we found 1080 cases of PE, a frequency of 6.12%. PE was common among primi-parous women (46.7%) in the age group [20-29] years. Pregnant women under the age of 20 were the most affected by eclampsia. Preeclampsia was frequently found in pregnant women with twin pregnancies and those with macrosomic fetuses with 10.1% and 8.9% frequency, respectively. Multiparous women with preeclampsia often had a history of PE (43 cases or 4%), arterial hypertension (55 cases or 5.1%) and / or diabetes (5 cases or 0.5%). Eclampsia was the principal maternal complication (29.7%). The maternal case fatality rate was 0.5%. Fetal complications were dominated by induced prematurity (19.5%) and intra-uterine fetal death (9.4%). **Conclusion**: This study reveals that pre-eclampsia is frequent in Douala Laquintinie hospital with high maternal-fetal morbidity and mortality rate and therefore remains a major public health problem.

INTRODUCTION

Pre-eclampsia is defined as pregnancy-related hypertension ≥ 140 mmHg at systole and ≥90 mmHg at diastole associated with proteinuria greater than 0.3g / 24h occurring after 20 weeks of amenorrhea [1]. This pathology still causes much physio-pathological and therapeutic controversies [2]. According to Nores et al hypertension (HTN) during pregnancy is a current issue whose epidemiological importance is increasing. It is a major global health problem [3, 4,5].

It occupies an important place in the hypertensive diseases in pregnancy which are classified in 4 groups which are: the chronic HTN, the gestational HTN, the pre-eclampsia added to a chronic HTN and the pre-eclampsia itself [6]. Its frequency in the world is estimated at 20% of hypertensive pregnant women; its lethality is still high in developed countries and even more in African series [7-11]. In France, it remains the second leading cause of maternal deaths in obstetrics after hemorrhages of delivery with about 20 deaths per year [12-14].

In black Africa, its prevalence is around 25%; it affects one pregnancy in 2000 with 30% of maternal deaths and 20% of fetal and neonatal deaths [15,16]. In Cameroon, it represents a major pathological entity in hypertensive diseases on pregnancy with 77.88% of hypertensive patients and a frequency of 4.97% [6].

It is therefore a worrying pathology because of its high prevalence and its complications involving the materno-fetal vital prognosis in the short term. At Laquintinie Hospital in Douala, the relevant and therefore reliable epidemiological data of pre-eclampsia were not known.

Our work was therefore aimed at determining the epidemiological and morbid characteristics of pregnant women who had pre-eclampsia at Laquintinie Hospital in Douala over a period from January 1, 2010 to December 31, 2015.

MATERIALS AND METHODS

This was a descriptive study with retrospective data collection that ran from January 18, 2016 to April 18, 2016 and covered a 06-year period from January 1, 2010 to December 31, 2015 at Laquintinie Hospital in Douala. Case recruitment was done through the counting of pregnant women records that were received during this period We identified the pregnant women who had HTN≥140 / 90 mmHg associated with proteinuria> 0.3g / 24h or significant albuminuria (2 ++) on urine strip after 20 weeks of amenorrhea. We excluded files that were considered incomplete and those that were pregnant with chronic hypertension. Sampling was consecutive non-probabilistic. Data collection was done using a pre-tested survey form with socio-demographic, clinical and para-clinical variables. An ethical clearance had been obtained from the ethics committee of the Faculty of Medicine and Pharmaceutical Sciences of the University of Douala. The data was recorded and processed using the EPI Info 7 and Excel 2007 software and analysed using the SPSS 20 software.

RESULTS

During the period of our study (from January 1, 2010 to December 31, 2015) we recorded 17644 deliveries and 1080 cases of pre-eclampsia, a frequency of 6.12% (Table 1). We had higher rates of preeclampsia in 2013 and 2014.

Clinical features

Table II presents the clinical aspects of our study. The average age was 28 years ± 6 years (range: 15-47). The age group [20-29] accounted for more than half of the study population (54.5%; 589/1080). The primiparous were the most numerous (46.7%, 504/1080). Few patients had a history of preeclampsia (4%, 43/1080) or hypertension (5.1%, 55/1080). Preeclampsia often occurred in term patients (60.3%, 651/1080). In 10.1% (109/1080) of the cases, preeclampsia occurred in twin pregnancies and 70.6% (763/1080) of the pre-eclampsia delivered by caesarean section. Practitioners tend to take the high path for delivery of preeclamptic patients (Fig 1)

Complications

Table III shows maternal and fetal complications. The most common maternal complication was eclampsia (29.7%, 321/1080). Maternal lethality was 0.5% (5/1080). Fetal complications were dominated by neonatal asphyxia (28.5%, 279/1080) and prematurity (19.5%, 221/1080). Nearly half of all patients under the age of 20 had eclampsia (48.6%; 53/109) (Figure 2)

Table I: Annual distribution of the preeclamptic

Year	2010	2011	2012	2013	2014	2015	Total
Nb of deliveries							17644
Cases of PE	147	140	184	230	234	145	1080
% of PE	0,83	0,79	1,04	1,30	1,32	0,82	6,12

PE: preeclampsia

Table II: Clinical characteristics (N=1080)

Variables	Number	Frequency (%)
Age (years)		
< 20	109	10,1
20 - 29	589	54,5
30 -39	331	30,6
≥ 40	51	4,7
Parity		
Primiparous	504	46,7
Pauciparous	283	26,2
Multiparous	209	19,4
Non defined	84	7,8
Gestational age		
< 32	47	4,3
32 – 36	249	23,1
37 – 41	651	60,3
> 41	35	3,2
Not specified	98	9,1
Patients past history		
Preeclampsia	43	4,0
HTN	55	5,1
Diabetis	5	0,5
Obesity	4	0,4
Characteristics of present pregnancy		
Twin pregnancy	109	10,1
Excessive uterine height	96	8,9
Hydramnios	3	0,3
Mode of delivery		
Caesarian section	763	70 ,6
Vaginal delivery	317	29,4

Table III: Complications		
Variables	Number	%
Maternal complications		
Eclampsia	321	29,7
Retroplacentar hematoma	39	3,6
HELLP syndrome	17	1,6
Pulmonary oedema	4	0,4
Disseminated Intravascular coagulation	2	0,2
Death	5	0,5
Fetal complications		
Prematurity	221	19,5
Intra-uterine fetal death	102	9,4
Neonatal asphyxia	279	25,8
Intra-uterine growth retardation	71	6,6

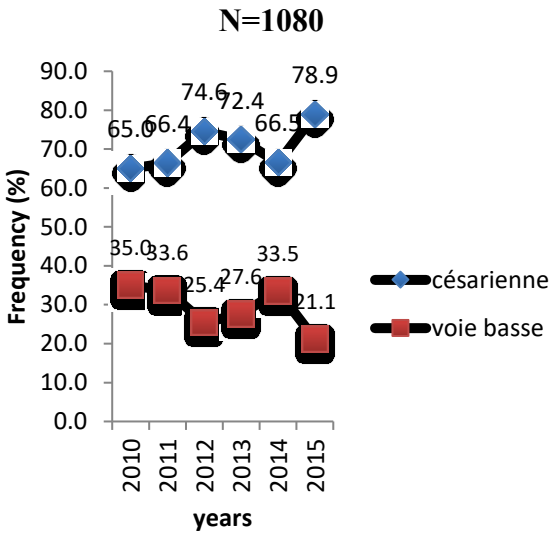

Figure 1: Evolution of mode of delivery with respect to years

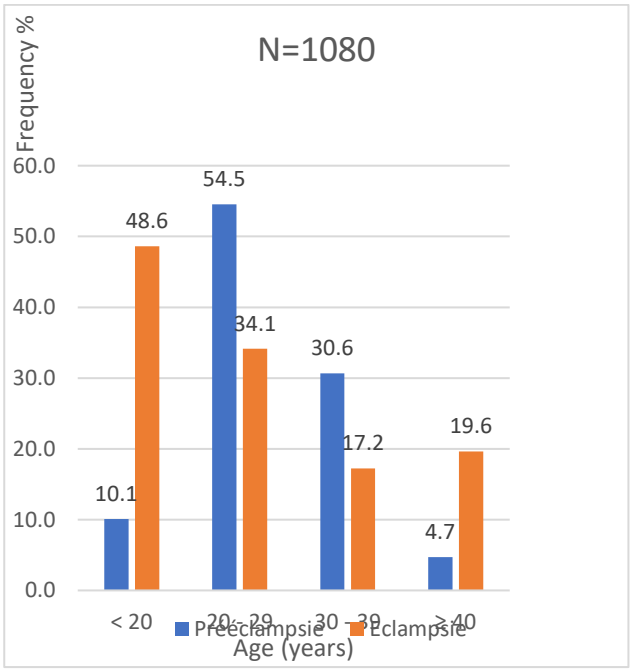

Figure 2: Distribution of pre-eclampsia and eclampsia with respect to age.

DISCUSSION

Our data is discussed in the light of the work of authors from the same geographical area and elsewhere for reliable collection variables. During our study period from 1 January 2010 to 31 December 2015, we recorded 17644 deliveries and 1080 cases of pre-eclampsia giving a frequency of (13.2% in 2010, 4.2% in 2011, 6 2% in 2012, 6.4% in 2013, 7.7% in 2014 and 4% in 2015) 6.12%. This rate differs from the 4.97% and 14.97% reported respectively by Mboudou et al and Cisse et al, whose rate is significantly higher than our yield [2-6]. This difference would probably be due to the sampling used in the different studies. Pre-eclampsia was mostly in the 20-29 age group with an average age of 28 +/- 6. This result is similar to that of Cisse et al., Moutaik et al., And Kartouk et al, who reported an average age of 28.5 years, 29.9 years and 28.0 years, respectively, of pre-eclampsia [2,18, 25]. These results diverge from those obtained by Mboudou et al in Cameroon, where the [30-34] age group was more affected with an average age of 32.4 years [6]. The predominance of 20-29-year olds in the consultations of our series could explain this difference. The below-20 age group accounted for 48.6% of eclampsia cases. Our data differ from that of Jharioly et al and Mboudou et al who were 25-35 years old and 30-34 years old respectively [5-6]. With regards to obstetrical history, primi-parous women were predominantly pre-eclamptic with a rate of 46.7%; and the majority of primiparas had an age ≤29 years old. This result is superimposable to those of the studies of Kartout et al., Mboudou et al, as well as data from the literature [6,25]. This is not in agreement with the study of Jharioly et al, in which the pre-eclamptic variable mainly concerned multiparas [5]. Twin pregnancy was the most common factor associated with the occurrence of preeclampsia, macrosomia being secondary. A history of hypertension, pre-eclampsia, and diabetes was ranked third, fourth and fifth, respectively, and was most commonly seen in multiparous women. This is consistent with the literature and the study by Kartout et al that found that patients with these antecedents represented a population at high risk of developing a first or second episode of pre-eclampsia [25].

We report 29.7% of the eclampsia cases that constitute the first maternal complication of our study. This high rate could be explained by the delay in the management because of long periods of rupture in magnesium sulphate. Retroplacental hematoma (RPH) occupies 2nd place with 3.6%, which coincides with the study of Cissé et al and is comparable to that of the literature [2]. These complications are high in African countries and are rare in developed countries. However, it should be noted that in developed countries eclampsia complicates an average of 1 to 5% pre-eclampsia, an incidence of 25 to 50 per 100,000 births, while RPH complicates 3 to 5% pre-eclampsia. This differs from the results of Moutaik et al and Mboudou et al who present RPH as the main complication [6,18]. This difference would probably be due to 2 facts in our series. On one hand we had more cases of seizures as signs of severity and on the other hand the delay in the management complicating pre-eclampsia.

We found 5 cases of maternal deaths following eclampsia attacks; a maternal case fatality rate of 0.5%. This agrees with the study by Kartout et al which represents eclampsia as the leading cause of maternal mortality (4 cases / 8), unlike in developed countries where it represents 0-1.8% [25]. Induced prematurity is the main foetal complication (19.5%) followed by intra-uterine foetal death (IUFD) 9.4% (109 cases). This is consistent with the study by Cisse et al which reports 5 to 10% of IUFD due to prematurity. It disagrees with Moutaik et al which shows the IUFD as the first complication with 9.3% followed by prematurity (8.5%) [2,18]. Caesarean section was the majority mode of delivery in our series (70%) with a cumulative rate of 27.40% (296 cases) of prematurity. The predominance of the practice of caesarean section before term was correlated with the maternal salvage of the indication and thus justifies the high rate of induced prematurity. This is consistent with the work of Cisse et al [2] Between 37-41 weeks, the vaginal delivery predominated with 67.8%. For a gestational age above 41 weeks the rate was high at 4.2%. This could be explained by the fact that pregnant women in the period of the term (37 -41SA) developed postpartum form of preeclampsia. 1. More than half of the new-borns in our series (602 cases: 55.7%) had an apgar score between 8 and 10 in the first minute of life. Limitations of our study relate to the birth weights not always reported in the documents stripped thus motivating a subsequent study on foetal well-being in a context of pre-eclampsia.

CONCLUSION

Pre-eclampsia is a real disease in Laquintinie hospital in Douala with a frequency of 6.12%. It occurs preferentially in young, primi-parous women and those under 20 are most affected by eclampsia. Twin pregnancies and macrosomia are the dominant associated factors, followed by history of pre-eclampsia, hypertension, and diabetes. Eclampsia is the main maternal complication and the leading cause of death with a maternal case fatality rate of 0.5%. Induced prematurity, on the other hand, is the first fetal complication. The IUFD ranks second with a lethality rate of 9.4%.

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Conflicts of interest

The authors declare that they have no conflict of interest

Contributions of the authors

ESSOME: data collection, design, manuscript writing and co study direction, MVE, EKONO ESSIBEN, BOTEN, TOCKI, FOUMANE read and corrected the manuscript.

Authors email-address;

ESSOME Henri: essometocky@yahoo.com
MVE KOH Valere: vmvekoh@yahoo.com
EKONO Michel : ekonom2148@yahoo.fr
ESSIBEN Felix: essibenx@yahoo.com
BOTEN Merlin: kyobotini@yahoo.fr
TOCKI Grace: tockigrace@yahoo.fr
FOUMANE Pascal : pfoumane2004@yahoo.fr

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