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Obstetric Emergencies: Frequency, Socio-Demographic Aspects and Risk Factors at the Labe Regional Hospital Maternity Unit (Guinea)

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Abstract

Introduction: Obstetric emergencies are clinical situations of a serious nature, often dangerous, which develop unexpectedly, threatening the vital prognosis of the mother and/or foetus in the short term. The aim of this study was to contribute to a review of obstetric emergencies at the Labé Regional Hospital maternity unit. **Methods:** This was a prospective descriptive and analytical study conducted over a period of 6 months in the maternity unit of the Labé Regional Hospital. It concerned all patients admitted to the department for obstetric emergencies. **Results:** Obstetric emergencies accounted for 20% of obstetric admissions. The mean age of the patients was 25.12 ± 7.15 years, with extremes of 14 and 45 years. The patients were housewives (42.52%), 42.86% did not attend school and 77.41% were from urban areas. The poor were the most numerous (43.52%). The ambulance was the means of transport in only 9% of cases. Acute foetal distress, pre-eclampsia, bony dystocia and post-partum haemorrhage were the most common types of emergency in our series, with frequencies of 27.57%, 22.59%, 17.94% and 10.63% respectively. The risk factors identified were age, origin, gestational age and the state of the maternal pelvis. **Conclusion:** Obstetric emergencies are frequent in our study site and represent a major concern for patients, providers and the community alike. In order to reduce the frequency of obstetric emergencies, young girls should be enrolled in school, the legal age for marriage should be respected, quality antenatal care should be provided in basic health facilities, and proper planning and spacing of pregnancies should be implemented.

1. Introduction

Obstetric emergencies are serious, often dangerous clinical situations that develop unexpectedly, with a short-term impact on the vital prognosis of the mother and/or foetus [1] [2]. Gravido-puerperium puts women at risk of obstetric complications that may be responsible for high maternal and foetal morbidity and mortality [1] [3]. The most common complications are haemorrhage, bony dystocia, acute foetal distress, pre-eclampsia and eclampsia [4] [5].

Obstetric emergencies are the leading cause of maternal mortality worldwide, particularly in developing countries where illiteracy, poverty, lack of antenatal care, poor transport infrastructure and inadequate equipment and personnel combine to exacerbate the problem [6]. In these countries, pregnant women are very often exposed to serious risks that can lead to a fatal outcome. This is often due to the inadequacy of referral facilities and the low educational and socio-economic levels of the population [7].

The frequency of obstetric emergencies varies: 6.1% with a maternal lethality of 9.6% and a foetal lethality of 18.5% in 2017 in Cameroon [8]; 6.03% with a maternal lethality of 2.63% in 2015 in the Democratic Republic of Congo [1] and 31.8% with a maternal lethality of 9.2% in 2015 in Benin [9]. In Guinea [10] in 2021, it was 20.7% with a maternal lethality of 5.2% and a perinatal lethality of 30.3%. The objectives of this study were to calculate the frequency of obstetric emergencies, establish the socio-demographic profile of patients and identify the risk factors associated with obstetric emergencies at Labé Regional Hospital.

2. Methods

2.1. Type and Period of Study

This was a prospective descriptive and analytical study lasting 6 months from 3 August 2018 to 03 February 2019, carried out in the maternity ward of Labé regional hospital.

2.2. Study Population

The study included all patients admitted for obstetric emergencies to the Labé regional hospital maternity unit during the study period.

2.3. Selection Criteria

All patients, regardless of origin, admitted for obstetric emergencies and who agreed to participate in the study were included. All women admitted for obstetric emergencies who refused to participate in the study were excluded.

We conducted an exhaustive recruitment of all patients admitted for obstetric emergencies during the study period who met the criteria. The variables studied were sociodemographic characteristics, obstetric characteristics and risk factors.

2.4. Data Collection, Entry and Analysis

Data were collected using a pre-established questionnaire, entered and analysed using Epi Info 7.2.1, Excel and Pack Office 2013.

For quantitative variables, we formed classes, calculated the mean and standard deviation, and identified the minimum and maximum. For qualitative variables, we determined the proportion expressed as a percentage (%). The most recurrent emergencies were entered into a logistic regression model with socio-demographic data and obstetric characteristics. A p-value of less than 5% with a 95% confidence interval was used as the significance threshold.

2.5. Ethical Considerations

We obtained the agreement of the health authority. Confidentiality and anonymity were respected.

3. Results

3.1. Frequency of Obstetric Emergencies

During the six (6) months of data collection, we recorded 301 patients admitted for obstetric emergencies out of 1505 admissions, *i.e.* a frequency of 20%.

3.2. Socio-Demographic Characteristics of Patients

The average age of the patients was 25.12 ± 7.15 years, with extremes of 14 and 45 years. More than 70% of the patients were under 30 years of age, 42.52% were housewives and 42.86% had no schooling. 77.41% of patients were from urban areas (Table 1).

The majority of patients presenting with obstetric emergencies were transported by personal vehicles (47.51%), followed by motorbike taxis (32.89%) and ambulances (8.97%) (Table 2).

3.3. Obstetrical Characteristics

In our sample, the paucigravida were the most numerous, accounting for 43.52% of the total.

Almost all the patients had attended between one and 3 antenatal clinics (95% of cases). Acute foetal distress, pre-eclampsia, bony dystocia and post-partum haemorrhage were the most common types of emergency in our series, with frequencies of 27.57%, 22.59%, 17.94% and 10.63% respectively (Table 3).

3.4. Risk factors

Logistic regression model: we used a logistic regression model to determine the risk factors for the four main obstetric emergencies in Labé.

Table 1. Distribution of the 301 patients according to socio-demographic characteristics.

Sociodemographic characteristics	Number N = 301	Percentage
Age in years		
<20	106	35.22
20 - 29	106	35.22
30 - 39	78	25.91
≥40	11	3.65
Mean ± Standard deviation	25.12 ± 7.15	
Minimum and maximum	14 et 45 years	
Level of education		
Out of school	129	42.86
Primary	63	20.93
Secondary	96	31.89
University	13	4.32
Profession		
Housewife	128	42.52
Self-employed	106	35.21
Pupil/Student	48	15.95
Employees	19	6.31
Origin		
Rural	68	22.59
Urban	233	77.41

Table 2. Breakdown of 301 patients by means of transport.

Means of transport	Number N = 301	Percentage
Personal vehicle	143	47.51
Motorbike taxi	99	32.89
Ambulance	27	8.97
Public transport	18	5.98
Feet	14	4.65

Table 3. Distribution of the 301 patients according to obstetric characteristics.

Obstetrical characteristics	Number N = 301	Percentage
Gestite		
Primigeste	93	30.90
Paucigeste	131	43.52
Multigeste	77	25.58

Continued

Prenatal consultation		
None	14	4.65
1 - 3	286	95.02
4 or more	1	0.33
Types of emergency		
Acute foetal distress	83	27.57
Preeclampsia	68	22.59
Bone dystocia	54	17.94
Post partum haemorrhage	32	10.63
Placenta previa	31	10.30
Retroplacental haematoma	31	10.30
Anemia	29	9.63
Eclampsia	28	9.30
Breech presentation	20	6.64
Fetopelvic disproportion	20	6.64
Uterine rupture	16	5.32
Procidence of the arm	16	5.32
Pulsatile cord prolapse	12	3.99
Fetal death in utero	10	3.32
Severe malaria	9	2.99
Partial retention of placenta	9	2.99
Retention of second twin	5	1.66

4. Discussion

The frequency of obstetric emergencies in our sample was 20%. In the literature, it varied between 18.5% and 31.8% [6] [11] [12].

This high frequency in this study can be explained by the fact that the regional hospital is the referral facility for all the health structures in the region, thus ensuring the management of emergencies from district hospitals, health centres, clinics and maternity homes. Obstetric emergencies are therefore a major concern for both the population and healthcare providers.

The mean age of our patients was 25.12 ± 7.15 years with extremes of 14 and 45 years. An average age of 24.01 ± 6.30 years with extremes of 15 and 43 years was reported by Samaké A in Mali [13]. However, more than 70% of our population was under 30.

This age group corresponds to the period of full reproductive activity for women. Housewives and those not attending school accounted for 42.52% and 42.86% respectively. In contrast, Owono Etoundi P *et al.* [14] found that over 70% of their samples were students and housewives. The predominance of

housewives could be explained by their position in society. These low-income women are subject to high levels of stress and physical exertion, which favours the rapid onset of complications during pregnancy.

For the place of follow-up, 77.41% of patients were followed up in urban areas, this result is different from Owono Etoundi P et Coll [14] in Yaoundé in 2017, who reported 52.9% of patients followed up in rural areas and 47.1% in urban areas. Ha BTT [15] described that educated women are better able to absorb maternal health messages and are therefore more likely to attend antenatal care services.

In our sample, only 8.97% of patients were transported by ambulance compared with 47.51% by personal vehicles and 32.89% by motorbike taxis. Similarly, Tchaou BA *et al.* [12] in Benin in 2015 reported that 2.2% of patients received medical transport compared with 78.9% in public transport vehicles. The inadequacy of the road network, the lack of ambulances in hospitals and the absence of Emergency Medical Assistance Services (SAMU) would justify this result.

Multi-gestures represented 69.10% of our sample. The same trend was observed by Boyoma BM [11] 2011 in DRC 81.1%. Almost all (95%) of our pregnant women had had one to 3 antenatal consultations. Mutombo K *et al.* [1] in 2015 noted that 72.37% of their sample had not received antenatal care. For the same group, Owono Etoundi P and Coll [14] in Yaoundé 2017 noted 48.6% in their study. According to the World Health Organisation [12], antenatal consultations are therefore a privileged means of reducing the unfavourable outcome of high-risk pregnancies in particular and pregnancies in general.

Acute foetal distress, pre-eclampsia, bony dystocia and post partum haemorrhage were the most frequent types of emergency in our series with frequencies of 27.57%, 22.59%, 17.94% and 10.63% respectively. Our result is similar to that of Tonato Bagnan J.A. *et al.* [16] who reported that haemorrhage, hypertensive pathologies and acute foetal distress dominated the types of emergency with respectively 36%, 24.5% and 15.3%. On the other hand, Owono Etoundi P et Coll [14] in Yaoundé 2017 noted hypertensive pathologies (72.3%), antepartum haemorrhage (13.5%) and infections (10.2%) as the most frequent types. In the series by Tchaou BA *et al.* [12] in Benin in 2015, the major groups of obstetric emergencies identified in descending order were: dystocia, haemorrhagic emergencies, hypertensive emergencies, foetal hypoxia, infectious emergencies and anaemia in pregnancy.

For post partum haemorrhage with basic socio-demographic characteristics (Table 4), we found that pregnant women aged 20 - 29 years had a higher risk of post partum haemorrhage than those ≤20 years (p = 0.0142). The fact that the mother was attended in an urban area was a statistically significant protective factor for haemorrhage with p = 0.0036. With regard to pre-eclampsia (Table 5), we found a statistically significant associationbetween gestational age over 35 compared with 20 - 29 and the occurrence of pre-eclampsia (p = 0.049).

Table 4. Logistic regression model of obstetric haemorrhage with baseline socio-demographic characteristics.

Basic sociodemographic characteristics	Odds Ratio	95%	P-Value
Mother's age in years			
<18/18 - 25	0.7921	0.1965	0.7432
26 - 35/18 - 25	2.8395	1.2333	0.0142
>35/18 - 25	1.9836	0.5589	0.2892
Health facility of origin			
Urban/rural	0.3119	0.1423	0.0036
Mother's level of education			
Primary/no education	0.3524	0.0961	0.1156
Secondary/no education	0.7122	0.2792	0.4776
University/no education	0.5916	0.0594	0.6544

Table 5. Logistic regression model of preeclampsia with basic socio-demographic characteristics.

Basic sociodemographic characteristics	Odds Ratio	95%	P-Value
Mother's age in years			
<18/18 - 25	0.2393	0.0529	0.0632
26 - 35/18 - 25	1.3841	0.7219	0.3277
>35/18 - 25	2.6713	1.0004	0.0499
Health facility of origin			
Urban/rural	0.9403	0.4550	0.8680
Mother's level of education			
Primary/no education	1.4268	0.6581	0.3680
Secondary/not educated	0.7869	0.3642	0.5421
University/not in education	0.2291	0.0250	0.1919

Concerning acute foetal distress (Table 6), the fact that the mother was followed in an urban area was identified as a risk factor with p = 0.036. Age between 20 - 29 years was a protective factor compared with 30 - 39 years with p = 0.0046. On the other hand, age under 18 years was a statistically significant risk factor for the occurrence of osseous dystocia with p = 0.00001 (Table 7). According to the results of the regression (Table 8), being primigravida or paucigravida represented a statistically significant risk factor compared with multigestation in the occurrence of osseous dystocia with respective p values of 0.0001 and 0.0003.

The immaturity of the maternal organism in women under 18 years of age, generally at their first gesture, especially early marriage in an African context, would explain our result.

Table 6. Logistic regression model of obstetric acute foetal distress with baseline socio-demographic characteristics.

Basic sociodemographic characteristics	Odds Ratio	95%	P-Value
Mother's age in years			
<18/18 - 25	1.0512	0.4408	0.9104
26-35/18-25	0.6810	0.3611	0.2354
>35/18 - 25	0.4961	0.1529	0.2431
Health facility of origin			
Urban/rural	2.2797	1.0540	0.0363
Mother's level of education			
Primary/no education	0.9801	0.4647	0.9578
Secondary/not educated	0.6923	0.3420	0.3066
University/not in education	0.8410	0.2142	0.8040

Table 7. logistic regression model of the narrowed pelvis or obstetrical limit with the basic socio-demographic characteristics.

Basic sociodemographic characteristics	Odds Ratio	95%	P-Value
Mother's age in years			
<18/18 - 25	2.4466	1.0511	0.0379
26 - 35/18 - 25	0.2541	0.0986	0.0046
36 - 45/18 - 25	0.1890	0.0237	0.1154
Health facility of origin			
Urban/rural	1.4429	0.6061	0.4074
Mother's level of education			
Primary/no education	1.3208	0.4986	0.5756
Secondary/not educated	1.8467	0.7927	0.1551
University/not in education	3.6934	0.7830	0.0988

Table 8. Logistic regression model of shrunken or borderline pelvis with obstetric characteristics.

Obstetrical characteristics	Odds Ratio	95%	P-Value
Gestite			
Pauci geste/Multi geste	9.8784	2.851	0.0003
Primigeste/Multi geste	1.9776	4.0805	0.0001
Prenatal consultation			
1 - 3	0.3018	0.0646	0.1279
4 or more	0.5944	0.3071	0.1227

In the literature [17] [18], it is described that the occurrence of obstetrical complications is associated with the presence of factors such as the mother's age, level of education, religion, parity, socio-economic level and the absence of a health facility.

5. Conclusions

This study has shown that obstetric emergencies are frequent at our site.

The profile of the patient developing the obstetrical emergency was that of a patient in the 20 - 29 age group, not educated, from the urban area and multiple gestures.

Acute foetal distress, pre-eclampsia, bony dystocia and post-partum haemorrhage were the most common types of emergency. The risk factors identified were: age, origin, gestational age and the state of the maternal pelvis.

In order to reduce the frequency of obstetric emergencies, young girls should be enrolled in school, the legal age for marriage should be respected, quality antenatal consultations should be offered in basic facilities, and proper planning and ideal spacing of pregnancies should be applied for health reasons.

It follows from this study that adequate management of obstetric emergencies is a matter for the health authorities, service providers, pregnant women and the community.

Conflicts of Interest

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

References

[1] Mutombo, C.K., Mukandila, A.M. and Mikenji, J.B. (2015) Profil et pronostic des urgences obstétricales en salle de travail de la Maternité Bonzola à Mbujimayi. *Mali Méd*, **30**, 65-73.

[2] Prasad, D., Nishat, H., Tiwary, B., Nisha, S., Sinha, A. and Goel, N. (2018) Review of Obstetrical Emergencies and Fetal Outcome in a Tertiary Care Centre. *International Journal of Research in Medical Sciences*, **6**, 1554-1558. https://doi.org/10.18203/2320-6012.ijrms20181467

[3] Mekango, D.E., Alemayehu, M., Gebregergs, G.B., Medhanyie, A.A. and Goba, G. (2017) Determinants of Maternal Near Miss Among Women in Public Hospital Maternity Wards in Northern Ethiopia: A Facility Based Case-Control Study. *PLOS ONE*, **12**, e0183886. https://doi.org/10.1371/journal.pone.0183886

[4] AMANHI Maternal Morbidity Study Group (2016) Burden of Severe Maternal Morbidité and Association with Adverse Birth Outcomes in Sub-Saharan Africa and South Asia: Protocol for a Prospective Cohort Study. *Journal of Global Health*, **6**, 1-10.

[5] Geller, S.E., Koch, A.R., Garland, C.E., MacDonald, E.J., Storey, F. and Lawton, B. (2018) A Global View of Severe Maternal Morbidity: Moving beyond Maternal Mortality. *Reproductive Health*, **15**, 98. https://doi.org/10.1186/s12978-018-0527-2

[6] Mustafa Adelaja, L. and Olufemi Taiwo, O. (2011) Maternal and Fetal Outcome of

Obstetric Emergencies in a Tertiary Health Institution in South-Western Nigeria. *Obstetrics and Gynecology*, **2011**, Article ID: 160932. https://doi.org/10.5402/2011/160932

[7] Compaoré, D.G., Meda, N., Goufodji, S., Djangnikpo, L., Agbla, S. and Borchert, M. (2014) Cross-Sectional Study of Obstetric "Escapees" and Maternal Deaths in Hospitals in Benin, Burkina Faso and Niger. *Revue d'Épidémiologie et de Santé Publique*, **62**, S248. https://doi.org/10.1016/j.respe.2014.06.250

[8] Tcheyanou, L.L.K. (2015) Obstetric Emergencies in the Intensive Care Unit of the Gynaecological-Obstetric and Paediatric Hospital of Yaoundé: Epidemiology, Clinic and Prognosis. *health Sciences and Disease*, **8**, 216-223.

[9] Blaise, A.T., Nouessewa Fanny, M.H., Kabibou, S. and Eugène, Z.M.C. (2015) Obstetrical Emergencies at Parakou University Hospital in Benin: Clinical, Therapeutic and Evolutionary Aspects. *European Scientific Journal*, **11**, 260-272.

[10] Diallo, M.H., Diallo, F.B., Keita, M., Baldé, D.B., Barry, A.B., Baldé, I.S., *et al.* (2021) Gynecological and Obstetrical Emergencies at the University Clinic of Gynecology-Obstetrics of the National Hospital Donka Guinea. *Open Journal of Obstetrics and Gynecology*, **11**, 1862-1874. https://doi.org/10.4236/ojog.2021.1112173

[11] Boyoma, B.M. (2011) Study of the Frequency of Obstetrical Emergencies at the Kamina General Referral Hospital, Democratic Republic of Congo. *Memoire Online*, **13**, 18.

[12] Tchaou, B.A., Hounkponou, N.F.M., Salifou, K., Zoumenou, E. and Chobli, M. (2015) Obstetric Emergencies at the Parakou University Hospital in Benin: Clinical, Therapeutic and Evolutionary Aspects. *European Scientific Journal*, **11**, 1857-1881.

[13] Samakè, A., Traoré, S.O., Kéita, M., Albachar, H., Traoré, O.M., Diallo, M., *et al.* (2020) Unattended Pregnancies: Maternal and Perinatal Prognosis at the Commune V Reference Health Centre in the District of Bamako. *Health Sciences and Diseases*, **21**, 74-77.

[14] Owono Etoundi, P., Metogo Mbengono, A.J., Tchokam, L., Danwang, C., Kago Tcheyanou, L., Afane Ela, A., *et al.* (2017) Obstetric Complications Admitted to the Intensive Care Unit: Epidemiology, Diagnosis and Prognosis. *Health Sciences and Diseases*, **18**, 48-52.

[15] Ha, B.T.T., Tac, P.V., Duc, D.M., Duong, D.T.T. and Thi, L.M. (2015) Factors Associated with Four or More Antenatal Care Services among Pregnant Women: A Cross-Sectional Survey in Eight South Central Coast Provinces of Vietnam. *International Journal of Women's Health*, **7**, 699-706. https://doi.org/10.2147/IJWH.S87276

[16] Tonato Bagnan, J.A., Lokossou, M.S.H.S., Tshabu Aguemon, C., Yessoufou, M.M.A.O., Adisso, S., Lokossou, A. and Perrin, R.X. (2017) Obstetrical Emergencies at the University Gynaecology and Obstetrics Clinic (Cugo) of the Centre National Hospitalier et Universitaire Hubert Koutoucou Maga (CNHU-HKM) in Cotonou: Epidemiological and Prognostic Aspects. *Journal of SAGO* (*Gynaecology - Obstetrics and Reproductive Health*), **18**, 1-10.

[17] Manyeh, A.K., Nathan, R. and Nelson, G. (2018) Maternal Mortality in Ifakara Health and Demographic Surveillance System: Spatial Patterns, Trends and Risk Factors, 2006-2010. *PLOS ONE*, **13**, e0205370. https://doi.org/10.1371/journal.pone.0205370

[18] Kynes, J.M. and Newton, M.W. (2019) Anaesthesia Providers and Maternal Mortality in Africa. *The Lancet Global Health*, **7**, e1321. https://doi.org/10.1016/S2214-109X(19)30284-0