Medicon Medical Sciences
Volume 6 Issue 4 April 2024
Article Type: Case Report
ISSN: 2972-2721

Convulsions in Children: Epidemiological, Diagnosis and Therapeutic aspects at Labe Regional Hospital

Diop Mamadou Moustapha[1]*, Bangoura MA[2], Kolié O[1,2], Doukouré MA[1], Barry A[1] and Diallo IS[2]

[1]*Department of Pediatrics, Faculty of Health Sciences and Techniques, Gamal Abdel Nasser University, Conakry, Republic of Guinea*

[2]*Institute of Child Nutrition and Health*

***Corresponding Author:** Diop Mamadou Moustapha, Department of Pediatrics, Faculty of Health Sciences and Techniques, Gamal Abdel Nasser University, Conakry, Republic of Guinea.

Received: March 20, 2024; **Published:** March 31, 2024

Summary

Introduction: Convulsions are attacks of muscular contracture of cerebral origin, of multiple etiologies.

Objective: To determine the epidemiological, diagnostic and therapeutic profile of convulsions in children.

Method: This was a prospective descriptive study lasting six months involving 137 patients hospitalized in the pediatric department of the Labé regional hospital.

Results: out of a population of 522 patients, we recorded 137 cases of convulsions in the pediatric department, representing a frequency of 26.2%.

The etiologies of seizures in children were dominated by severe malaria with a frequency of 72.2% followed by lower respiratory infections with 24.8% and epilepsy 11.6%.

In our study, antipyretics were the most used with a frequency of 90.5% followed by antimalarials 72.2% and anticonvulsants 37.9%.

Conclusion: convulsions are very common symptoms of multiple etiologies, treatment remains symptomatic and etiological.

The availability of EEG and blood ionogram would facilitate diagnosis and improve management.

Keywords: convulsions; epilepsy; child; Labé

Introduction

A convulsion corresponds to any spasmodic contraction affecting the musculature of the body. Convulsions are epileptic attacks with tonic and/or clonic motor manifestations [1].

They constitute a diagnostic and therapeutic emergency due to the risk of convulsive status epilepticus, serious neurological sequelae and death [1, 2].

Convulsions are common in children and can reveal serious and curable illnesses such as meningitis and meningoencephalitis. Their clinical manifestations vary according to age [1, 2].

The positive diagnosis of convulsions is quickly made provided that there is a good description of the seizure, which must specify: The febrile or non-febrile nature of the seizure, the movements observed, the partial or generalized appearance of the seizures, the existence of a motor deficit or not, the duration [2].

Its treatment is essentially etiological and symptomatic [3].

The annual incidence of a first critical episode in industrialized countries is 93 to 116 cases per 100,000 inhabitants. 50% are early epilepsies and 50% are occasional seizures (single episode related or not to an acute CNS disorder) [4].

In Guinea, the high number of convulsions in children remains high and there are a multiplicity of etiologies.

The objective of this study was to study the epidemiological, diagnostic and therapeutic profile of convulsions in children at the Labé regional hospital.

Method

This was a prospective descriptive study, lasting 6 months from March 1 to August 31, 2019, which took place in the pediatric department of the Labé regional hospital.

The study included all patients aged 0 to 15 years admitted to the pediatric department of the Labé regional hospital for convulsions during our study period.

We studied socio-demographic parameters (age, sex, origin, educational level and profession of parents), clinical parameters (signs associated with convulsion, personal history of convulsion and characteristics of seizures), Para clinical parameters (Thick gout, TDR, Blood sugar), the diagnosis made and the treatment undertaken.

We carried out an individual interview in search of the reasons for consultation, the history of the illness and the antecedents without distinction of sex. A clinical and para-clinical examination made it possible to search for the etiologies of the convulsions found. Data collection was done on a survey sheet.

Results

Age group (year)	***Numbers***	***%***
0-5	76	55.4
6- 10	49	35.7
11 – 15	12	8.7
Total	137	100
Sex		
Male	77	56.2
Feminine	60	43.8
Total	137	100
Provenance		
Rural	63	45.9
Urban	74	54
Total	137	100

Table 1: Sociodemographic characteristics of convulsions in the pediatric department of the Labé regional hospital.

Reasons for consultation	*Numbers*	*%*
Fever	124	90.5
Headache	118	86.1
Physical Asthenia	97	70.8
Others	80	58.3
Personal history		
Absence of convulsion	119	86.8
Presence of seizure	18	13.8
Total	137	100.0

Table 2: Clinical characteristics of convulsions in the pediatric department of the Labé regional hospital.

Variables	*Numbers*	*%*
Seizures characteristics		
Febrile seizures	111	81
Non-febrile seizures	26	19
Total	137	100
Type of crisis		
Generalized	135	98.6
Partial	2	1.4
Total	137	100.0
Diagnostics		
Malaria	99	72.2
Acute respiratory infections	34	24.8
Epilepsy	16	11.6
Hypoglycemia	10	7.3
Febrile gastroenteritis	4	2.9

Table 3: Characteristics according to the character, type and diagnosis of the crisis in the pediatric department of the Labé regional hospital.

Symptomatic treatment	*Numbers*	*%*
Antipyretics	124	90.5
Anticonvulsivants	52	37.9
Antiemetics	40	29.2
Rehydration	4	2.9
Absorbents	4	2.9
This		
Favorable	118	86
Discharged against medical advice	14	10.2
Deceased	5	3.6
Total	137	100

Table 4: Distribution of 137 patients according to the type of treatment and patient outcome in the pediatric department of the Labé regional hospital.

Discussion

During our study we recorded 137 cases of convulsions out of a total of 522 children hospitalized in the pediatric department of the Labé regional hospital, a frequency of 26.2%. This result is higher than that of Mwipopo EE et coll [5] in China 2016 which reported a frequency of 3.5%.

The mean age of the patients was 4.55 ± 3.16 years with a range of 1 and 14 years. We observed a predominance in the age range of 0-5 years with a frequency of 55.4%. This result is comparable to that of Wassila A and coin 2011 in Algeria [6] had found a predominance in the age group of 28 days-2 years. This could be explained by the vulnerability of this age group to infections and metabolic abnormalities.

The male gender was predominant, i.e. 56.2% boys compared to 43.8% girls and a sex ratio of 1.28. This result is contrary to that of Mushagalusa B et coll [7] in DR Congo who found a female predominance with 51.1% girls to 48.8% boys and a sex ratio = 0.9.

In our study, 54% of patients came from urban areas compared to 45.9% from rural areas. This result is contrary to that of Dalila B in Algeria in 2014 [8] which reported 42% from rural and 58% urban origins. In rural areas, parents view seizures as mystical illnesses; this would reduce hospital attendance.

In our study, fever and convulsions were the most frequent reasons for consultation in our patients 124 (90.5%) and 118 (86.1%). This result demonstrates that fever was the main symptom in most of the infectious pathologies encountered. Wassila A and all [6] reported that fever accounted for 86%.

During our study, we had 18 cases of personal ATCD of convulsion, representing a frequency of 13.8%; and 119 of the patients had no ATCD of seizures whatever their nature, a frequency of 86.8%. Our results are lower than those of Sall M. G et coll. [9] which during their study at Dakar University Hospital on a sample of 140 cases made it possible to identify 10% of personal ATCD of convulsion. ASMA Chaquir in Marragesh in 2012 in his doctoral thesis to identify a frequency of 16.3% of personal ATCD [10].

During our study, febrile convulsions were the most numerous with a frequency of 81% compared to a frequency of 19% for non-febrile convulsions. Mushagalusa B found a frequency of 63.5% for febrile convulsions in its study carried out in Congo in 2015 [7]. This predominance of febrile convulsions could be explained by the fact that the occurrence of pathologies which can raise the temperature in children are much more frequent.

Convulsions were generalized in 98.5% of patients. This would have been due to the delay in the consultation in our series. This result is comparable to that of Mwipopo EE et coll [5] in China 2016 which reported generalized seizures in 98% and focused seizures in 2%. The RDT, which is the rapid diagnostic test for malaria, was carried out on all our patients and was positive in 84 children or 61.3%. During our study, we only had 15 of our patients who had positive thick smear, or 10.9%. This could be explained by the high frequency of malaria cases during our study period. This result is comparable to that of Poma HA in Mali [11] who reported in his study that 48% of patients had a positive thick smear.

In our study, malaria remains by far the most common cause of seizures; it was incriminated in 99 of our patients or 72.2% followed by respiratory infections with 24.8%. This result is similar to that of Mushagalusa B et coll [7] in Congo in 2015 which found malaria, ENT infections and lower respiratory infections with respectively: 68.9%; 14% and 9.3%. This result could be explained by the fact that the study was carried out during the rainy season. Wassila A and co in 2011 [6] in Algeria reported as causes of convulsions fever 71%, metabolic disorders in newborns 15%; and in last position 14% of central origin.

Antipyretics (90.5%), antimalarials (72.2%) and anticonvulsants (37.9%) were the most used. Helps I am Mali [11] had used the antibiotic 60.3%; Diazepam+ Gardenal 57.5%; the antimalarial 56.1% and diazepam 39.7%.

The evolution was favorable in 118 patients or 86.1%. During our study, we recorded 5 cases of death or 3.6% and 14 cases discharged against medical advice. The deaths would be linked to the delay in consultation and insufficient resuscitation resources. The departures against medical advice would be due on the one hand to the lack of resources, and on the other hand to the empirical consideration of the convulsions by the parents. Vassila A et al in 2011 [6] in Algeria had reported a favorable development in 54.3%; 8% convulsive illness and 16% death. The deaths were linked to the delay in consultation and the empirical consideration of convulsions by the parents.

Conclusion

Seizures are clinical manifestations of several pathologies; they were frequent in the pediatric department of the Labé Regional Hospital. They mainly affect children aged 0 to 5 years with a slight male predominance.

The most common etiologies were severe malaria, acute respiratory infections and epilepsy.

Convulsions are very common symptoms of multiple etiologies, treatment remains symptomatic and etiological. The overall management of convulsions in children requires a good knowledge not only of the type of seizures, but also of their causes in order to guide the therapeutic choice.

The availability of EEG and blood ionogram would facilitate diagnosis and improve management.

Conflict of interest

The authors declare that there is no conflict of interest.

Contribution of the authors

All authors contributed significantly to the research and the development of this scientific article.

References

1. Claris O and Owono M. "The pediatrics extern's booklet: Convulsion in the NRS and in children". Tsunami edition (2011).
2. Bourrilon A., et al. "Collection for the pediatric practitioner: Convulsion". 5th edition (2013): 584.
3. Bajer B., et al. Seizure in NRS and children Editing (2012).
4. Pinto da Costa N and Smur PH Robert Debré. "Management of status epilepticus in children (neonates excluded)". Neurological Review 165 (2009): 390-397.
5. Mwipopo EE., et al. "Profile and clinical characterization of seizures in hospitalized children". Pan Afr Med J 24 (2016): 313.
6. Wassila A, Samira H and Kahouadji. "Convulsions in children". Doctor of Medicine thesis: Abou Bekr University Belkald; Algeria 40 (2011): 27-29.
7. Mushagalusa B., et al. "Febrile convulsions in Lwiro (Eastern DRC)". International Journal of Innovation and Applied Studies 10.1 (2015): 36-40.
8. Dalila B. "Convulsive status in children: Management in intensive care and etiological approach". Doctoral thesis in medicine: University of Oran; Algeria 309 (2014): 124.
9. Sall MG., et al. "Hyperpyretic convulsions at Dakar University Hospital". Med Afr Noire 39.2 (1992): 119-121
10. Kariuki SM., et al. "The Association Between Childhood Seizures and Later Childhood Emotional and Behavioral Problems: Findings from a Nationally Representative Birth Cohort". Psychosom Med 78.5 (2016): 620-628.
11. Poma HA. "Febrile convulsions in infants in the pediatric intensive care unit of the Gabriel Touré hospital". Doctoral thesis in medicine: University of Bamako; Bamako 101 (2009): 204.

Volume 6 Issue 4 April 2024