CLINICAL STUDIES / ETUDES CLINIQUES

PSYCHOPATHOLOGIC DISORDERS ASSOCIATED WITH EPILEPSY AT THE YAOUNDÉ GENERAL HOSPITAL.

TROUBLES PSYCHOPATHOLOGIQUES ASSOCIES A L'EPILEPSIE A L'HOPITAL GENERAL DE YAOUNDE.

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ABSTRACT

Introduction

The psychopathological disorders associated with epilepsy are very specific entities that disrupt patients' life quality. The main challenges are diagnostic and therapeutic, especially in countries with limited resources.

Objective

To determine the frequency of psychopathological disorders and associated factors in patients with epilepsy, followed at the neurology unit of the Yaoundé General Hospital.

Methods

For 6 months, we conducted a descriptive cross-sectional study in adults aged 18 and above with epilepsy. Socio-demographic data, patient history, epilepsy history, treatment and progression were collected using a structured questionnaire. GAD-7 (Generalized Anxiety Disorders 7) was used for generalized anxiety, PHQ-9 (Patient Health Questionnaire 9) and NDDI-E (Neurological Disorders Depression Inventory for Epilepsy) were used for depression. The diagnostic criteria of Logsdail and Toone were used for post-ictal psychosis, and the Diagnostic and Statistical Manual of Mental Disorders in the fourth revised version for interictal psychosis.

Results

Eighty-three patients were included. The average age of patients is 33 ± 12.99 years. Depression was the most common psychiatric comorbidity (63.8%), followed by anxiety (37.3%), and psychotic disorders (20.5% for post-ictal psychosis and 9.6% for inter-ictal psychosis). Female gender, onset of seizure bursts, young age, central nervous system infections, were factors associated with these commodities in this population.

Conclusion

Psychopathological disorders are common in our series. Specific psychotic disorders are found in 1/5 of the patients.

RESUME

Introduction

Les troubles psychopathologiques associés à l'épilepsie sont des entités bien spécifiques qui perturbent la qualité de vie des patients. Les principaux enjeux sont diagnostiques et thérapeutiques surtout dans les pays à ressources limitées.

Objectif

Déterminer la fréquence des troubles psychopathologiques et les facteurs associés chez les patients ayant une épilepsie, suivis à l'unité de neurologie de l'Hôpital Général de Yaoundé.

Méthodologie

Nous avons mené une étude transversale descriptive sur une période de 6 mois chez les adultes âgés d'au moins 18 ans ayant une épilepsie. Les données sociodémographiques, les antécédents des patients, l'histoire de l'épilepsie, les traitements et l'évolution ont été recueillis à l'aide d'un questionnaire structuré. Le GAD-7 (Generalized Anxiety Disorders 7) a été utilisé pour l'anxiété généralisée, le PHQ-9 (Patient Health Questionnaire 9) et le NDDI-E (Neurological Disorders Depression Inventory for Epilepsy) pour la dépression. Les critères diagnostiques de Logsdail et Toone ont été utilisés pour la psychose post-ictale, et le manuel diagnostique et statistique des troubles mentaux dans la quatrième version révisée pour la psychose interictale.

Résultats

83 patients ont été inclus. L'âge moyen des patients était de 33±13 ans. La dépression était retrouvée chez 63,8%, l'anxiété chez 37,3%, la psychose post-ictale chez 20,5% et la psychose inter-ictale chez 9,6% des patients. Le genre féminin, la survenue des salves de crises épileptiques, le jeune âge, les infections du système nerveux central étaient des facteurs associés à ces troubles psychopathologiques.

Conclusion

Les troubles psychopathologiques sont fréquents dans notre série. Les troubles psychotiques spécifiques sont retrouvés chez 1/5 des patients.

INTRODUCTION

Epilepsy affects about 50 million people worldwide, of whom about 80% live in low- and middle-income countries (28,26). WHO estimates the prevalence of active epilepsy in low- and middle-income countries to be between 7 and 14 per 1000 person-years (26).

For several years, epidemiological studies have indicated a significant frequency of psychopathological disorders associated with epilepsy (15). The most common psychopathological disorders associated with epilepsy are depressive disorders, anxiety disorders, and psychotic disorders (15,35). These disorders are often under-diagnosed and under-treated (14), which contributes to the perpetuation and aggravation of epileptic seizures and the reinforcement of social exclusion (33). The study of the prevalence of psychopathological disorders associated with epilepsy presents important methodological difficulties regarding diagnostic criteria, the selection of study populations or diagnostic instruments. The epidemiological, diagnostic, and therapeutic issues raised by these co-morbidities in our context remain a challenge.

METHODS

We conducted a descriptive cross-sectional observational study in the Epileptology Unit of the Yaoundé General Hospital from January to June 2016. Patients were adults without mental disorders, with active epilepsy. A survey form was completed by the included patients specifying socio-demographic data, medical history, history of epilepsy and its management. Depressive disorders were diagnosed using Patient Health Questionnaire 9 (PHQ-9) (19) and Neurological Depression Disorders in Epilepsy (NDDI-E) (23). Anxiety disorders were screened for using the Generalized Anxiety Disorders 7 (GAD-7) (32). The diagnostic criteria of Logsdail and Toone were used to search for psychotic disorders (21), as well as the Diagnostic and Statistical Manual of Mental Disorders of the American Psychiatric Association, in its fourth revised version (7).

Data analysis was performed using the statistical software SPSS in its 21st version. We performed a simple logistic regression with all dependent variables looking for factors singularly associated with psychiatric co-morbidities (PC). We then performed a multiple logistic regression to identify the main factors associated with PC after adjusting for potential confounding factors found in the scientific literature as being associated with PC. The first species risk was 5%.

RESULTS

Eighty-three patients participated in this study. The mean age was 33.24 ± 12.99 years with extremes of 17 and 72 years. The male/female sex ratio was 1.075. The most represented study levels were high school and higher education students with a proportion of 39.8% for each level. More than half of the patients were single (65.1%).

21.7% of the patients had a family history of epilepsy. 16.9% had a history of head trauma. 12% had a history of febrile seizures.

Focal epilepsy accounted for 77.1% of cases compared to 22.9% for generalized epilepsy. Among focal epilepsies, temporal lobe epilepsies were the most common (60.9%) followed by frontal epilepsies (23.4%). 38.6% of the patients in our study had epilepsy that had been active for more than ten years, and 34.9% of the patients had epilepsy between five and ten years.

Six antiepileptic medications were used in the patient management of our study. The antiepileptic drugs most used by patients were carbamazepine (59.8%), sodium valproate (24.4%) and phenobarbital (15.7%). Most patients had been under management for less than five years (51.8%).

The overall prevalence of depression in our sample was 63.8%. Mild (37.3%) and moderate (21.7%) depressive disorders were the most common levels of severity. The NDDI-E specific to patients with epilepsy found a prevalence of major depressive disorder of 15.7%. The prevalence of anxiety disorder was 37.3%. Psychotic disorders were represented by post-ictal (20.5%) and pre-ictal (15.7%) psychoses.

For each psychopathological disorder, temporal epilepsy was the most common. We observed a proportion of 70% for anxiety disorder, 65.9% for depressive disorder, 62.5% for depressive disorder.

Gender and the presence of seizure bursts were the factors associated with anxiety; the risk was lower in males compared to females (p = 0.048) and higher in patients with seizure bursts (p = 0.037) ¾ Table 1. Gender and age were the factors associated with depression, with lower risk in men (p = 0.007) and inversely related to age (p = 0.009) ¾ Table 2. The risk of post-ictal psychosis was greater in patients with central nervous system infections (p = 0.022) and those with seizure bursts (p = 0.017) ¾ Table 3.

DISCUSSION

Psychiatric disorders are common in many neurological disorders such as epilepsy, migraine, Alzheimer's disease, Parkinson's disease, essential tremors, or stroke (13). For many years, several studies around the world have shown that the most common psychopathological disorders in epileptic patients are respectively depressive and anxiety disorders (15,35,33,36,2,29). The results observed in our study are similar to results

from the scientific literature. There is great variability in the frequencies observed in the different studies (15). This is explained by the use of different methodologies and tools.

During the year 1990 in a community-based, observational, cross-sectional, analytical study of incident cases of unprovoked epileptic seizures involving 83 patients between 17 and 74 years of age performed in Sweden, Forsgren and Nyström already showed a strong relationship between depression and epilepsy (10). It is now accepted that the link between psychopathological disorders and epilepsy is not a cause-and-effect relationship, in which psychiatric comorbidities are a consequence of epilepsy. The relationship between epilepsy and psychopathological disorders is bidirectional (17,4,12) see triangular according to Andres M Kanner. Subjects are exposed to both epileptic and psychopathological disorders due to pathophysiological factors (15).

The prevalence of depression in our study was 63.8%. Depression is the most common psychopathological disorder in patients living with epilepsy (37). Our results corroborate these observations. In India in 2018, Rani and *al.* observed a prevalence of 40% (30). Similar results were found in Nigeria in 2010 by Ogunrin and *al.* and in Benin in 2004 by Nubukpo and *al.* (25,24). A higher prevalence of 85% was observed in southern Nigeria in 2012 (25). These observations are above the occurrences mostly found in the world. In a meta-analysis in 2017, Scott and *al* estimated the prevalence of depression in epileptic patients at 22.9% (31). The difference observed with our results can be explained by methodological variability and the small size of our sample. Predictors of depression in our study were female gender (p=0.007) and young age (p=0.009). Elghazouani and *al*. also found this predictive factor (9). In a meta-analysis of 35 studies in 2018, Kim and *al.* also found female sex as an associated factor (18). Young age is not a commonly observed predictive factor; its presence can be explained by the age structure of our predominantly young sample.

The prevalence of anxiety disorder in our study was 37.3%. Gandy and *al.* in 2013 in Australia and Elghazouani and *al*. in 2015 in Morocco observed occurrences of 29% and 28.1% respectively (9,11). In a Canadian study of 36727 subjects, Tellez-Zenteno and *al.* estimated the prevalence of anxiety disorder at 11.2% (35). The prevalence of anxiety disorder in patients with epilepsy is estimated to be between 11% and 25% (20). Predictive factors were female gender (p=0.048) and the presence of seizure bursts (p=0.037), which is a marker of severity. Female gender was also found to be a factor associated with anxiety disorder in the English study by Mensah and *al.* and in Morocco by Elghazouani and *al*. (9,22). The frequency of attacks as a predictive factor is also described in the scientific literature (34). This link could be explained by a subjective perception of crisis control.

In terms of frequency, psychotic disorders are the third most common psychopathological disorder in patients with epilepsy (35,3). The prevalence of post-ictal psychosis was 20.5% in our sample. A meta-analysis published in 2014 estimated the prevalence of post-ictal psychosis to be between 2% and 7.8% in patients with epilepsy. It is particularly frequent in patients with temporal, frontal or focal pharmaco-resistant epilepsy (8,6). We found as predictive factors of post-ictal psychosis; history of central nervous system infection (p=0.022) and the presence of seizure bursts (p=0.017). In a case-control study of 59 epileptic patients with post-ictal psychosis and 94 control patients with focal epilepsy without post-ictal psychosis, Alper and *al.* identified four fields significantly associated with the risk of post-ictal psychosis: ambiguous extratemporal location, family history of psychiatric disorders, interictal EEG abnormalities, and epilepsy secondary to encephalitis (8,1). In a study of 28 patients with post-ictal psychosis, Chaudhury and *al.* observed a 67.9% history of increased seizure frequency before the onset of psychosis (5). These results are similar to those observed in our study.

CONCLUSION

Depressive disorders and anxiety disorders are the most common psychopathological disorders associated with epilepsy in our study. We found as predictive factors associated with these comorbidities, female gender, young age, presence of seizure salvoes, and history of central nervous system infection. Screening and management of these disorders using simple tools are essential to improve patients' quality of life and seizure control.

Authors' Declaration

The authors do not declare any conflict of interest.

Authors' contributions

Victor SINI, Alex Wilfried KAMGA FOGNO and Jean-Pierre KAMGA OLEN designed the study.

Alex Wilfried KAMGA FOGNO collected the data

André Micheal BIMBAÏ and Alex Wilfried KAMGA FOGNO analyzed the data.

Table I : Factors significantly associated with anxiety disorders

	Patients with psychiatric comorbidities n(%)	Patients without psychiatric comorbidities n(%)	Adjusted OR (CI95%)	*P* – Value
Age (years)	29,48±11,057	35,48±13,637	1,01(0,93-1,10)	0,78
Gender				0,048*
Male	10(32,3)	33(63,5)	0,34(0,12-0,99)*	
Female	21(67,7)	19(36,5)	Réf	
Marital status				0,071
Married	4(12,9)	23(44,2)	0,17(0,027-1,16)	
Not married	27(87,1)	29(55,9)	Réf	
Presence of seizure bursts				0,037*
Yes	11(35,5)	6(11,5)	4,02(1,08-14,88)*	
No	20(64,5)	46(88,5)	Réf	

* Critical likelihood < 0,05
** Critical likelihood < 0,01

Table II: Factors significantly associated with depressive disorders

	Patients with psychiatric comorbidities n(%)	Patients without psychiatric comorbidities n(%)	Adjusted OR (CI95%)	*P* – Value
Gender				0,007**
Male	22(40,7)	21(72,4)	0,12(0,025-0,55)**	
Female	32(59,3)	8(27,6)	Réf	
Age (years)	30,89±11,871	37,62±14,049	0,92(0,87-0,98)**	0,009**
Length of treatment (years)	12,87±9,87	9±8,58	0,15	0,79
Drug combination				0,12
Yes	14(25,9)	1(3,4)	7,6(0,58-99,4)	
No	40(74,1)	28(96,6)	Réf	

* Critical likelihood < 0,05
** Critical likelihood < 0,01

Table III: Factors significantly associated with psychotic disorders

	Patients with psychiatric comorbidities n(%)	Patients without psychiatric comorbidities n(%)	Adjusted OR (CI95%)	*P* – Value
Central Nervous System Infections				0,022*
Yes	5(29,4)	5(7,6)	7,7(1,34-44,06)	
No	12(70,6)	61(92,4)	Réf	
Presence of seizure bursts				0,017*
Yes	8(47,1)	9(13,6)	6,3(1,4-28,5)	
No	9(52,9)	57(86,4)	Réf	
Length of disease (years)	12,82±8,69	11,18±9,89		0,33
Length of treatment (years)	7,17±6,59	8,57±8,94		0,21

* Critical likelihood < 0,05 ; ** Critical likelihood < 0,01

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