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Etiologies of epilepsy and health-seeking itinerary of patients with epilepsy in a resource poor setting: Analysis of 342 Nigerian Africans

Olubunmi A. Ogunrin [a,*], Ademola Adeyekun [b], Philomena Adudu [c]

[a] Neurology Unit, Department of Medicine, University of Benin, Benin City, Nigeria
[b] Department of Radiology, University of Benin, Benin City, Nigeria
[c] Department of Anesthesia, University of Benin, Benin City, Nigeria

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ABSTRACT

Purpose: The understanding of causation of epilepsy, especially in resource poor African countries where prevalence rates are very high, would aid strategies for primary prevention. This study sought to determine the causes of epilepsy in Nigerian Africans and health-itinerary of patients with epilepsy.
Method: This was an observational, cross-sectional descriptive study of consecutive newly diagnosed adult patients with epilepsy using a mixed-methods approach of face-to-face in-depth interview of patients' parents and relations, health care personnel who had given medical attention at any time and telephone interview. A structured interview schedule was used to obtain demographic information, details of seizure variables, health seeking itinerary and history of previous hospitalizations. Data was analyzed descriptively with SPSS version 17.
Results: Three hundred and forty-two patients with epilepsy with a mean age of 31.4 ± 11.98 years participated in the study. Most of the patients (68.1%; 233/342) were unemployed and students. There were 270 (78.9%) patients with generalized epilepsy. No identifiable etiology was found in 37.7%, but of the remaining 62.3%, the commonest causes included post traumatic (19.6%), recurrent childhood febrile convulsions (13.2%), post-stroke (6.7%), brain tumors (5.9%), neonatal jaundice (5.3%), birth-related asphyxia (5%) and history of previous CNS infections (4.7%). Family history of epilepsy was obtained in 9.9%, all of whom had primarily generalized seizures. 61.4% of them sought initial attention from the traditional healers or in prayer houses.
Conclusion: This study showed the pattern of causes of epilepsy in Nigerian Africans. The health seeking behavior and itinerary of the PWE revealed a preference for traditional healers. There is need for health policies and epilepsy awareness campaigns to prevent causes of seizures and improve the knowledge of the public respectively.

1. Introduction

At a conservative estimate, 80% of the 50 million people worldwide with epilepsy are living in the resource poor countries.[1] In the developed nations, epilepsy occurs with an annual incidence ranging from 20 to 70 cases per 100,000 and a point prevalence of 0.4–0.8%.[2,3] However, the incidence of epilepsy in resource poor countries may be as high as 190 per 100,000 people.[4] Most patients suffering from epilepsy in African countries prefer anonymity and are reluctant to disclose their condition because of the stigma attached to the disease.[5,6] This factor affects the prevalence rates hence there is likelihood that most of the reported prevalence rates represent a 'tip of the ice-berg' as the chances of under-reporting are high. The prevalence rates of epilepsy reported in Africa are based on surveys of defined communities and hospital admissions. Prevalence rates in Nigeria vary between 5.3 and 37 per 1000 persons with the highest rates recorded in rural areas, especially communities without health care facilities.[7]

The burden of epilepsy in sub-Saharan African countries calls for immediate action and intervention. In the past, the World Health Organization (WHO), the International League Against Epilepsy (ILAE) and the International Bureau for Epilepsy (IBE) launched the campaign to 'bring epilepsy out of the shadows', in a bid to address the issues that militate against the identification and treatment of patients with epilepsy (PWE) in the sub-region but not much has been done to realize this objective in most countries within the region. The prevention of epilepsy is highly desirable in sub-Saharan Africa because of the morbidity, mortality and the stigmatization associated with the disease. One of the significant steps toward primary prevention of epilepsy is identification of causes of the disease.[8] This becomes especially important because

* Corresponding author at: Department of Medicine, PMB 1154, University of Benin, Benin City, Nigeria. Tel.: +234 8023344044.
E-mail address: bunmifunmi@hotmail.com (O.A. Ogunrin).

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worse overall prognosis, persistent seizures and higher mortality have been associated with epilepsies due to structural causes.[8] Fortunately, most of the etiologies of structurally related epilepsies in sub-Saharan Africa are preventable or modifiable disorders which include central nervous system (CNS) infections (including parasitic infections), childhood febrile convulsions and traumatic brain injury, an important observation which was recently substantiated by Ngugi et al.[9] This is critical to formulation of health policies and programs aimed at preventive strategies.

Infections accounted for up to 26% of cases of epilepsy reported in Africa.[8] Previous studies among Nigerians have shown that central nervous system (CNS) infections accounted for most cases of structurally related epilepsies[10,11] especially in northern part of the country where epidemic meningitis is common. In areas of sub-Saharan Africa where it is endemic, neurocysticercosis has been reported to be responsible for majority of cases although this has been rarely reported in Nigeria. Recurrent childhood febrile convulsion was reported by several authors as a predisposing cause among Nigerians.[10–14] However, causes like cerebral tumors and tuberous sclerosis were rarely reported presumably due to lack of neuro-imaging facilities.

The health seeking behavior of people has been associated with their knowledge of disease causation, prevailing socio-cultural factors and societal beliefs especially myths surrounding epilepsy, and availability and proximity of health facilities. The practice of using traditional healing methods for the treatment of epilepsy is common in sub-Saharan African societies, especially among the rural and uneducated dwellers.[15] Danesi and Adetunji[16] had reported that most Nigerian patients with epilepsy sought alternative treatment with trado-medical practitioners. This interferes with timely and appropriate medical interventions with resulting disabilities.

The data on the incidence and etiologies of epilepsy in sub-Saharan Africa are scarce. Studies are needed to determine the causes of epilepsy in our populations as a better understanding of the pattern of the etiologies would aid the design of health policies to lower the incidence of epilepsy through the formulation and implementation of community and national preventive strategies and public health education programs. This study sought to determine the causes of epilepsy and health-seeking itinerary of patients with epilepsy.

2. Method

This was an observational, cross-sectional descriptive study of consecutive newly diagnosed patients with epilepsy presenting to the neurology clinic of the University Teaching Hospital, Benin City a tertiary health facility in cosmopolitan southern Nigeria. This facility serves as a major referral center for neurological disorders in south–south Nigeria. All adult patients (i.e. patients above 14 years of age) presenting to the clinic and diagnosed with epilepsy between January and December 2008 (the study period) were recruited. These patients were not incident cases as they had had active epilepsy before seeking medical attention in the neurology clinic. The diagnosis of epilepsy was based on eye witness corroboration of recurrent afebrile seizures and electro-encephalographic (EEG) changes. The seizures were classified according to the International League against Epilepsy (ILAE) classification of 1981.[17]

The study employed mixed methods approach using key informants' interview and a survey of the PWE. In-depth interviews of key informants, i.e. patients' parents and relations, health care personnel who had given medical attention at any time were conducted, and where it was not possible to conduct face-to-face in-depth interview, telephone interview was conducted to obtain medical information of patients. In addition, available medical records (i.e. medical notes, summaries and results of investigations including electroencephalograms (EEG), computerized tomographic (CT) brain scans, cerebrospinal fluid (CSF) analysis, serum calcium, serum bilirubin, electrolytes and urea, blood glucose and complete blood count) from hospitals or clinics attended by patients previously were reviewed.

A structured interview schedule was used to obtain demographic information (age, sex, level of education, employment status, marital status and domicile), seizure variables (duration of epilepsy, frequency of seizures, type of seizure based on eye witness, medication type and presence/absence of status in the past), health seeking itinerary and history of previous hospitalizations. The duration of epilepsy was estimated as the historic time interval between the first attack ever and the initial presentation in the neurology clinic. For the purpose of descriptive analysis, seizure frequency was graded as 'very frequent' – more than one attack per day, 'frequent' – 1–3 fits per week, 'average' – 1–3 fits per month, 'less frequent' – once in 3–6 months and 'infrequent' – once in a year. Informed consents were obtained from patients and approval to conduct study was given by the Hospital Ethics Committee.

3. Results

A total of 342 patients were diagnosed with epilepsy during the study period comprising 202 males (59%) and 140 females (41%). The mean age of the patients was 31.4 ± 11.98 years with a range of 16–76 years. The mean age of males was 32.6 ± 15.4 years (range 16–76 years) with a modal frequency of 24 years and that of females was 29.7 ± 11.7 years (range 18–62 years) with a modal frequency of 32 years. Most of the patients (68.1%; 233/342) were unemployed and students. Similarly, most were either single students or single, unmarried and unemployed patients (57.9%; 198/342). Most of the PWE received primary education but could not complete secondary education due to frequent seizures. The details of age distribution, level of education, employment and marital status are presented in Table 1.

There were 270 (78.9%) patients with generalized epilepsy comprising 230 (67.2%) with primarily generalized type and 40 (11.7%) with secondarily generalized type. The primarily generalized types consisted of generalized tonic–clonic seizures (213/342; 62.3%), absence seizures (5/342; 1.5%), drop attacks (atonic seizures) (4/342; 1.2%), clonic seizures (4/342; 1.2%), tonic seizures (2/342; 0.6%) and myoclonic epilepsy (2/342; 0.6%). Focal or localization-related seizures were present in 72 (21.1%) patients. Most of the focal seizures were of the complex type (CPE) constituting 16.4% (56/342). The remaining 16 (4.7%) patients presented with simple partial seizures. The median age of onset of seizures was 12 years. Most of the patients presented after a duration of 10 years (61.7%; 211/342) with a mean duration of epilepsy of 10.8 ± 2.1 years. Similarly most of the patients had frequent seizures at presentation (68.7%; 235/324), i.e. more than 1–3 seizure attacks in a week (Table 2).

One hundred and twenty-nine patients, comprising 37.7%, had no identifiable etiology implying that the prevalence of idiopathic and structurally related epilepsies from this study were 37.7% and 62.3% respectively. Of the structurally related epilepsies (62.3%; 213/342), previous birth-related asphyxia was found in 17 patients (5%), recurrent childhood febrile convulsions accounted for 13.2% (45/342), history of significant previous neonatal jaundice that necessitated hospitalization with or without exchange blood transfusion was found in 18 patients (5.3%), history of previous CNS infections was found in 16 patients (4.7%), brain tumors accounted for 5.9% (20/342), post stroke seizures accounted for 6.7% (23/342) and post traumatic seizures accounted for 19.6% (67/342) with 64.7% (46/67) of them