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Research

Are the children with epilepsy treated traditionally a disadvantaged group? A pilot study

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Abstract

Introduction: in sub-Saharan Africa, the proportion of persons with epilepsy who seek traditional treatment is estimated at 80%. Despite that children are the firsts concerned by epilepsy, the characteristics and particularities of the children with epilepsy (CWE) who resort to traditional treatment are not known. The aim of this pilot study was to identify clinical particularities of the CWE who resort to traditional treatment. **Methods:** CWE between 6 to 17 years were included in the study based on their histories of previous antiepileptic treatments. The CWE previously treated by traditional healers were compared to others CWE. **Results:** Data from 140 CWE whose previous treatments had been documented were selected. The duration of epilepsy (7 [3.0-9.8] years versus 3 [1.0-7.0] years, p=0.013) was higher for the CWE traditionally treated compared to the CWE without any antiepileptic treatment. The seizure frequency (8.7 [1.5-91.3]/month versus 1 [3-30.4]/month, p=0.036) was higher for the CWE traditionally treated compared to the CWE without any antiepileptic treatment, but the p-value was under the Bonferroni correction (p=0.017). There was no differences between the CWE traditionally treated and the CWE previously treated with antiepileptic drugs. **Conclusion:** Compared to others, the CWE who resort to traditional medicine spend much time before consulting health facilities and could have a more serious epilepsy. We have discussed on factors that could explain these differences.

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Introduction

In sub-Sahara, epilepsy is the most common serious neurological disease for the paediatric populations. This disease is largely untreated in many resource poor regions. In sub-Saharan Africa, only 10 to 20% persons with epilepsy receive approved treatment while in developed countries more than 90% receive appropriate care [1,2]. An appropriate antiepileptic treatment would allow up to 70% persons with epilepsy to live free of seizures [2].

For the sub-Saharan African populations, epilepsy is a disease that has supernatural origins, occurring as a result of witchcraft, curses and demonic possessions [3,4]. These beliefs [3], associated to others factors as poverty [5] and health facilities' inaccessibility [3,5], lead the persons with epilepsy and their families to consult the traditional healers who are often considered the only ones who can provide cure [6]. Persons with epilepsy who resort to traditional healers often spend many months or even years, without approved drugs, before consulting health facilities [7].

Despite that children with epilepsy (CWE) represent majority of persons who suffer of epilepsy in Africa, few studies have been consecrated to CWE who resort to the traditional healers. Their characteristics and their particularities are not known. The aim of this pilot study was to identify, for the CWE outpatients, the clinical particularities of those who had resorted to traditional treatment.

Methods

Type, period and site of the study

This cross-sectional study was conducted from February to August 2008 at the Centre de santé mentale Telema (CSMT), a mental health centre in Kinshasa, the capital of the Democratic Republic of the Congo. This city, with about 8 million inhabitants, has only one neurologic-psychiatric hospital. The CSMT is the only primary care institution for mental health. In 2010 more than 30,000 people were treated at CSMT for neurologic or psychiatric problems. The cost of the consultations (5$ US for the first and 2.5$ US for the followings in comparison to 15 to 50$ for each consultation in private clinics) and of the psychotropic drugs (12$ US per year for phenobarbital at a daily dose of 100 mg) are within reach of most.

Study population

Children ages 6 to 17 years with active epilepsy were selected by a convenience sampling according to arrival at CSTM during the study period. The active epilepsy was defined by occurrence of 2 or more unprovoked epileptic seizures separated by an interval of time of at least 24 hours, with at least one seizure in the preceding 5 years [8]. Based on medical histories, the diagnosis of epilepsy was made by a neurologist. The children under 6 years were not included because the difficulty of differentiating febrile seizures and unprovoked seizures [9]. CWE whose medical histories could not identify previous treatments before first consultation to CSMT were excluded. Children who previously had received both antiepileptic drug and traditional treatment were excluded of the sample.

The following clinical information was collected and analysed: (I) age, (II) gender, (III) type of antiepileptic treatment before the first consultation at the CSMT, (IV) age at seizure onset, (V) duration of epilepsy and (VI) current seizure frequencies.

Ethical considerations

The study protocol was approved by the University of Kinshasa (approbation number ESP/CE/026A/2007) and the internal revision commission of the Institute of Tropical Medicine Antwerp (approbation number 07391593). A written consent signed by parents was obtained for each subject.

Statistical analysis

The statistical analyses were performed with the SPSS version 21 software for windows (SPSS Inc., Chicago, IL, USA). The CWE were divided into 3 groups (gp): gpTra = the CWE treated traditionally; gpAED = the CWE treated only with antiepileptic drugs (AED); gpAny = the CWE without any antiepileptic treatment.

For quantitative variables, normality was tested by Shapiro-Wilk W test and homoscedasticity was tested by Levene's test. The quantitative variables are reported as medians with interquartile ranges. Multiple comparisons with the Mann-Whitney U test and Bonferroni corrections (0.05/3=0.017) were performed to compare age, age at seizure onset, duration of epilepsy and seizure frequency. The Fisher´s exact test served to compare gender.

Results

During the study period, 140 CWE were included. Excepted for previous treatment, the CWE excluded were comparable to others CWE for the gender and the age. There were 79 (56.6%) boys and 61 (43.6%) girls. The male/female ratio was 1.3:1. Median age was 13 (11-15) years. There was no difference in age between boys and girls (13 [11-15] years versus 13 [10-14] years; W = 2797.5, p = 0.101).

Before their first consultation to the CSMT, the CWE had received different antiepileptic treatment modalities (Table 1). Of the study group, 26.4% had previously received a traditional therapy (gpTra). Fifteen percent (15.0 %) had previously been treated with AED (gpAED). The majority (58.6%) of the CWE had not received an antiepileptic treatment (gpAny).

The CWE treated traditionally had a duration of epilepsy higher (W = 1829.5, p = 0.013) than the CWE of gpAny (7 [3-9.8] years versus 3 [1-7] years; Figure 1). The CWE of gpAED had a duration of epilepsy (8 [4-13] years versus 3 [1-7] years; W = 498, p = 0.005) higher and began epilepsy earlier (3 [1-10] years versus 8.0 [4.5-11] years; W = 1110, p = 0.017) than those of the gpAny. The seizure frequency was greater for the gpTra than for the gpAny (8.7 [2-91.3] seizure/month versus 3 [1-30.4] seizure/month; W = 1880.5, p = 0.036) but the p-value was upper than the significance threshold corrected by Bonferroni corrections (p<0.017). There was no differences between the CWE of gpTra and the CWE of gpAED.

Discussion

The present pilot study was conducted for to learn a little more about children who resort to traditional healer. For this, we have compared children who have resorted to traditional healer with the children who had not resorted to traditional medicine.

In sub-Saharan African culture, epilepsy has supernatural origins and people think that it can be treated by traditional healers [5,6].

Therefore, some patients use traditional medicine before seeking health facilities. Persons with epilepsy spend many months or years with these healers before consulting health facilities [7,10]. This is one of the factors explaining the long periods that elapse between the first seizure and medical consultations. This fact can explain the longer durations of epilepsy in CWE previously treated traditionally compared to CWE whose had received no antiepileptic treatment.

We have found a possible relationship between the treatment modalities and the seizure frequency (the p-value, 0.036, was upper than the corrected significance threshold). Based on the frequency of seizures, epilepsy in those who had resorted to traditional healer could be more serious. But our results can not indicate sense of this relationship. Was it because of high seizure frequency that the parents of the CWE had consulted traditional healers? Or, did the epilepsy aggravated during traditional treatment and then CWE were brought to CSMT? Even if some plants used by traditional healers have neurotoxicity effects on the brain [11], it is unlikely that this factor explains the current differences between the CWE. Previous studies have not showed that choice of traditional medicine had relationship with the epilepsy clinical characteristics. Perhaps the long length of time spent without AED by the CWE treated traditionally may explain their high seizure frequency. Some researchers have shown that time spent without AED worsens epilepsy [12]. Also, with the long duration observed, the gpTra could have concentrated more CWE with drug-refractory epilepsy than gpAny.

Several other factors could have played negative role for those who had resorted to traditional treatment. Resorting to traditional healer is associated with chronicity of epilepsy, geographical inaccessibility [3,13] and socioeconomic inaccessibility to health facilities [13,14]. Particularly in Kinshasa, poverty could be principal factor of resorting to traditional medicine. The traditional healers offer very attractive payment modalities, by credits, in kind or according to positive results [13]. Poverty also could be responsible of difficulties of families to buy AED and could explain the current frequency seizure difference. On the one hand, the cultural beliefs, the geographical inaccessibility and the socioeconomic inaccessibility to health facilities motivate families to resort to the traditional medicine. And on the other hand, families cannot afford the medical treatment. Beside socioeconomic factors, etiologic factors could be different as seen in difference of age of onset between the three groups even if this difference is statistically significant only between gpAED and gpAny.

These differences, however, are observed only with the children who never received any previous antiepileptic treatment. The lack of differences between CWE treated traditionally and the CWE treated with AED seems paradoxical. Several factors may account for this fact. In Republic Democratic of the Congo, as in several others African countries, primary care providers are not trained for the diagnosis and the management of epilepsy [15,16]. When they prescribe the AED, they often do it intermittently and/or underdosed. It is not uncommon for them to refer persons with epilepsy to traditional healers [17]. In sub-Saharan Africa, because of low socioeconomic and educational level and of cultural beliefs, persons with epilepsy had a bad antiepileptic treatment adherence. The AED are detected in suboptimum range or not at all in the serum of more than half patients treated with an AED [18]. Also, epilepsy misdiagnosis can be favoured by the high prevalence of cerebral malaria and meningitis which can manifest by (provoked) epileptic seizures.

But the socioeconomic factors might be the principal factor that can explain the absence of difference in seizure frequency between the CWE previously treated traditionally and those previously treated with AED. These two groups could share the same conditions, particularly for the socioeconomic level.

Limits of study

This clinical study performed with not large numbers of the CWE in groups is likely not representative of the CWE of Kinshasa. Confounding factors, as socioeconomic and family factors, have not been controlled. The influence of traditional treatment with its different modalities is not investigated in this preliminary study.

Conclusion

This pilot study shows that the CWE who had had resort to traditional treatment had higher duration of epilepsy and could have higher seizure frequencies than those who never received previous antiepileptic treatment. Several factors that had not been investigated here could explain these facts. The resorting to traditional medicine, as the high seizure frequency and the high duration of epilepsy, could be the consequences of the same conditions. The CWE treated traditionally could be a disadvantage group. Further studies are needed to confirm our results, and if that is the case, to investigate factors explaining.

What is known about this topic

- In sub-Saharan Africa, the majority of the adults who live with epilepsy resort to traditional healers.
- Some of these persons spend much time under traditional treatment before seeking for health facilities.

What this study adds

- In Kinshasa we observe that some children who resort to traditional treatment to cure epilepsy spend much time before seeking the health facilities.
- Children with epilepsy who received any antiepileptic treatment before seeking a centre of mental health have better clinical characteristics than the others children with epilepsy.
- Children with epilepsy previously treated by the traditional healer do not differ of those previously treated in the primary health facilities.

Competing interests

The authors declare no competing interest.

Authors' contributions

Thierry Matonda ma Nzuzi: have contributed to the conception and the design, the analysis and the interpretation of data, the drafting the article, revising it and have approval the final version. Gilbert Mananga Lelo: have contributed to the design, the interpretation of data, the revising it and have approval the final version. Magloire Mpembi Nkosi: have contributed to the acquisition of data, the interpretation of data, the revising it and have approval the final version. Joule Madinga: have contributed to the analysis and the interpretation of data, the drafting of the article and the revising it and have approval the final version. Constantin Kabwe Kola: have contributed to the conception, the acquisition of data, the

interpretation of data, the revising it and have approval the final version. Vivi Maketa: have contributed to the conception, the acquisition of data, the interpretation of data, the revising it and have approval the final version. Pascal Lutumba: have contributed to the acquisition of funding, the conception, the interpretation of data, the revising it and have approval the final version. Katja Polman: have contributed to the acquisition of funding, the conception, the interpretation of data, the revising it and have approval the final version. Marleen Boelart: have contributed to the acquisition of funding, the conception, the interpretation of data, the revising it and have approval the final version. Jean-Jacques Muyembe: have contributed to the acquisition of funding, the conception, the interpretation of data, the revising it and have approval the final version. Samuel Mampunza Ma Miezi. have contributed to the conception and design, the interpretation of data, the drafting the article, the revising it and have approval the final version. All the authors read and approuved the final manuscript.

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Table and figure

Table 1: Type of antiepileptic treatment before first consultation at the centre de santé mentale Telema

Figure 1: A) comparisons of CWE for age, B) age at the onset, C) duration of disease, D) seizure frequency. Data are expressed as mean+standard error of means

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Table 1: type of antiepileptic treatment before first consultation at the Centre de santé mentale Telema		
Type of antiepileptic treatment	**n**	**%**
Traditional	37	26.4
Antiepileptic drugs	21	15.0
No antiepileptic treatment	82	58.6
Any	48	34.3
Antimalarial and/or antibiotic	21	15.0
Prayer	13	9.3

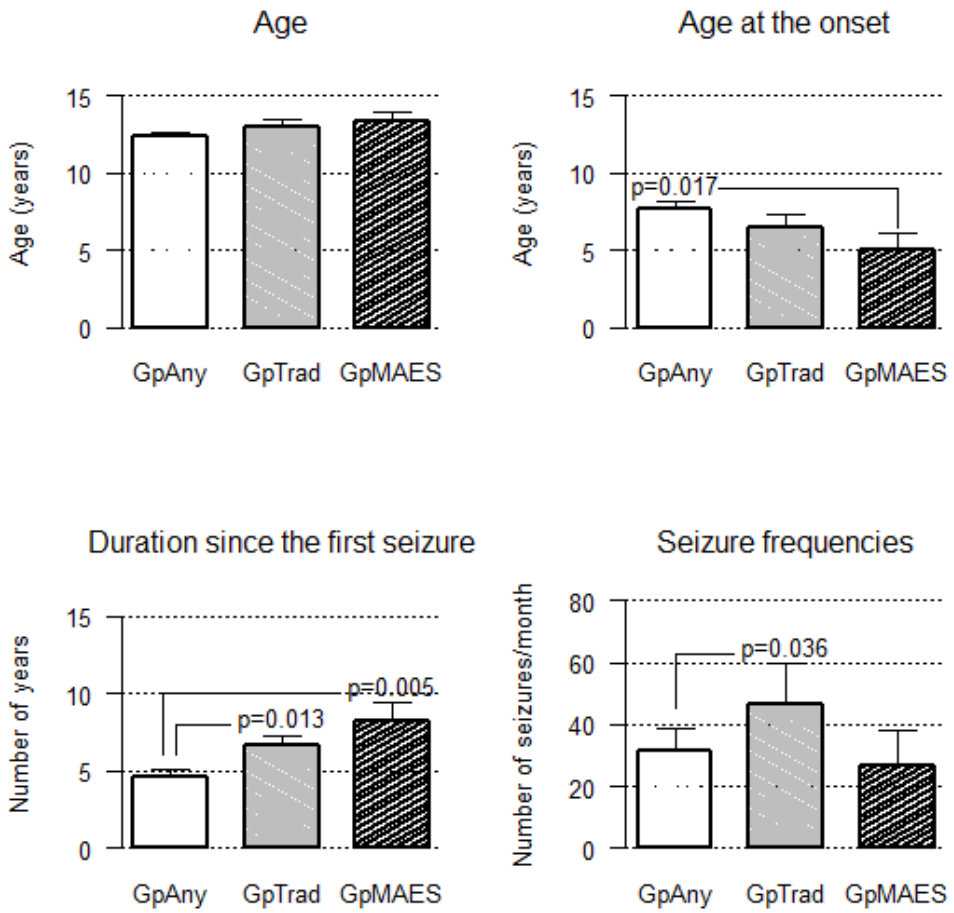

Figure 1: A) comparisons of CWE for age, B) age at the onset, C) duration of disease, D) seizure frequency. Data are expressed as mean+standard error of means