

Original Research Article

Behaviour Problems In Children With Epilepsy (Age 6 - 14)- A Prospective Observational Study.

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Abstract

Background: Epilepsy's psychological effects are variable, some may experience a few mental health issues while some may experience serious problems like anxiety, depression, ADHD, mood disorders etc.hence there is a need to screen these problems at an early age for timely intervention. So our study was conducted to determine the prevalence of emotional and behavioral problems in children with epilepsy.

Methods: The overall prevalence of emotional and behavioral problems in childhood was determined by calculating the percentage of children with child behaviour checklist score indicative of specific emotional and behavioral problems. Prevalence for specific morbidities were also calculated and reported separately for each condition. Results were presented in form of tables, charts, graphs and narratives.

Results: The overall prevalence of emotional and behavioural problems in children was 38.7%. Attention problem (13.5%), aggressive behaviour (10.8%), social problems (8.1%) and withdrawal/ depression (6.3%) were the four leading syndromes The prevalence of emotional and behavioural problems was significantly associated with age of onset of epilepsy ,type of epilepsy , frequency of seizures, antiepileptic drug therapy used by child.

Conclusion: As there is higher prevalence of emotional and behavioral problems in children with epilepsy, age of onset, frequency of seizure and duration of diseases were found to be significantly associated with occurrence of behavioural problems ,therefore prompt and early screening for these problems, as well as integrated management consisting of pharmacotherapy, behavioural modification ,parental education and counselling, psychotherapy and psychoeducation would help to reduce their effect in these patients.

Keywords: Child behaviour checklist, attention problems, counselling.

1. INTRODUCTION

Background:

A seizure is a transient, paroxysmal, pathophysiological disturbance of cerebral function caused by spontaneous, excessive discharge of neurons. The World Health Organization (WHO) defines epilepsy as a neurological condition characterized by the occurrence of two or more unprovoked seizures. For epidemiological classification purposes, epilepsy is considered to be present when two or more unprovoked seizure occurs at an interval >24hr. Epilepsy is the most common chronic neurological disease in the general population and childhood ,affecting approximately 50 million people worldwide(1). Approximately 5% to 10% of children have a seizure episode during the first 2 decades of life(2). The lifetime prevalence rate of epilepsy is 1%(3).Children with epilepsy suffer from symptoms of disease, adverse effect of therapy, risk of recurrence , development of behavioral problems risk of accident and social stigma. Cognitive effects sometimes also occur due to the injurious effects of the seizures on the brain. The patients may also sustain physical injuries such as burns and fractures as a result of the seizures. In addition, the medications (AEDs) for epilepsy are often associated with side effects which may impair patients' quality of life(4). Paediatric epilepsy is of particular concern to psychiatrists due to the high frequency of associated mental problems, including psychiatric and neurodevelopment disorders, and psychosocial problems. Children with epilepsy have also been found to be at an increased risk for unmet mental health needs, hence there was a need to conduct this study in 2nd tier study where there have not been various studies to address this important issue for timely screening and intervention of these emotional and behavioural problems in children.

2. METHODS:

Aims and Objectives:

To find behavioral problems in children with epilepsy and factors affecting them:-

- A) Onset of seizure
- B) Duration of seizure
- C) Frequency
- D) Type of seizure
- E) Anti epileptic drug

Study design -Prospective observational study

Study period - 1st Jan 2018 to 31st March 2019

Study area - OPD follow-up case of epilepsy

Inclusion criteria :

- 6-14 year old children with epilepsy.

Exclusion criteria :

- Febrile seizure,

- Symptomatic epilepsy
- Dyselectrolytemia,
- Pyogenic meningitis
- Age - < 6 to >14 years .
- ID- less than 70 IQ

Study group:

Children present with epilepsy 6-14 year.

Sample Size:

Sample size was calculated using simple random sampling formula and sample size of 140 was calculated out of which 111 completed the study.

Data Collection:

Children with epilepsy aged between 6 to 14 years attending the follow up at PaediatricOPD of N.S.C.B Medical college hospital ,Jabalpur who met the study criteria were recruited, having obtained consent from their legal guardians.

Data Analysis**Researcher-designed socio demographic questionnaire-**

This questionnaire captured data on various variables , such as type of seizures , frequency of seizures, age of onset of epilepsy and whether is on monotherapy, polytherapy or not on medication.

And were assessed by using CBCL (Child behavior Checklist).

3. RESULTS:**TABLE NO. – 1**

Behavioural problems	Number of subjects
Normal	68(61.3%)
Attention Problems	15(13.5%)
Aggressive Problems	12(10.1%)
Social Problems	9(8.1%)
Withdrawn Problems	7(6.3%)

This table is showing behaviour and behavioural problems finding on CBCL. 68(61.3%) had normal behaviour and 33(38.7%) had behavioural problems. Most common behavioural problems were attention behavioural problems (13.5%) and aggressive behavioural problems (10.1%).

TABLE NO.2 RELATION OF BEHAVIOURAL PROBLEMS WITH OTHER FACTORS

Behaviour&Behavioural Problem	Frequency of seizures		
	<3 episodes	3-5 episodes	>5 episodes
Normal	26(81.1%)	37(61%)	5(28%)
Abnormal	6(19.9%)	24(39%)	13(72%)
Chi square = 35.93; P = 0.003			
	Generalized epilepsy	Focal epilepsy	Others

Normal	52(57.7%)	16(76.1%)	12(93%)
Abnormal	38(42.3%)	5(23.9%)	1(7%)
Chi square = 9.42; P=0.022			
According to No. Of antiepileptic drugs			
	Monotherapy	Polytherapy	
Normal	47(77%)	21(42%)	
Abnormal	14(23%)	29(48%)	

Chi square = 26.83; P = 0.001

1. Behavioural problems were more (39.5%) in children with 3-5 episodes of seizures and maximum (72.3%) in >5 episodes group and it is statistically significant P=0.003.
2. Behavioural problems were more common in Generalised tonic clonic seizures and result is clinically significant P= 0.022
3. Behavioural problems were more common in children who were on polytherapy compared to those who were on monotherapy.

4. DISCUSSION:

Sociodemographic characteristics of children with epilepsy

In this study we found that there were 60 males (54.1%) and female 51(45.9%) . In previously reported studies, the prevalence of epilepsy by gender is variable. In the U.S., Ethiopia, Tunisia, Kenya and Zambia, a higher prevalence has been reported in males , Study done in Kenya there were 177 males (66.1%) giving a male to female ratio of 2: 1 ,while in Uganda and Nigeria, a higher prevalence has been reported in females as compared to males(5).

Clinical characteristics of children with epilepsy

Almost two third (67.6%) of the children had the first seizure at less than 8 years of age. At least one-half (50.3%) of children attending epilepsy follow up clinic had not had a seizure during the last one year, which is the definition of inactive epilepsy. This contrasts with a study done by Mung'ala et al. in rural Kenya where the prevalence of inactive epilepsy was found to be 68.2%(6) . The reason for this could be due to the fact that the study was done in a community setting as opposed to this study which was done in a hospital setting where more severe forms of disease are likely to be found.

The most common type of seizures were generalized tonic clonic seizures were reported in 71.1% of children. Mung'ala et al. in a study in rural Kenya also reported a high prevalence of generalized tonic clonic seizures and/or secondarily generalized seizures in overall two thirds of children(6) . Similar findings have been reported in Pakistan and Uganda where the prevalence was 77% and 53% respectively(7,8) . The reason for these differences may be due to difficulties in diagnosis in low and middle income social settings along with less no. of cases were presented of absence seizure. Overall prevalence of emotional and behavioral problems in epilepsy. The overall prevalence of emotional and behavioral problems in children with epilepsy on follow-up in OPD Pediatric Department NSCB MCH Jabalpur was 38.8%.

Behavioral Problems According To Frequency of Seizure:

In our study we found increased frequency of seizure was associated with more prevalence of behavioral problems. Behavioral problems were more (39.5%) in children with 3-5 episodes of

seizures and maximum (72.3%) in 99 >5 episodes group and it is statistically significant $P=0.003$. Similar findings have been reported by of Dunn et al and Freilenger et al, where increased frequency of seizures has been seen to demonstrated that increased frequency of associated with emotional and behavioral problems(9,10).

Behavioral Problems with Types of Epilepsy

According to our study behavioral syndromes were more with generalized epilepsy group and Attention behavioral were more common in Generalized epilepsy group (Table No. 2). Cause of high prevalence of generalized tonic clonic epilepsy as well as attention problems may be easily recognized by parents , society and this apparently life threatening.

According To Type of Anti-Epileptic Drugs

According to our study children who were taking more than one AED (polytherapy) were found to had more emotional and behavioral problems, 58% of Children were on polytherapy having Behavioral problems, while 22.96% children on monotherapy had behavioral problems (Table No.2). Dunn et al have reported a significant association between polytherapy and behavioral problems .Similar to our study Freilinger et al.(2006) found polytherapy to be associated with higher scores in attention, social and aggressive behavior scales(9,10) . Study done by Mishra et al found that there were no significant differences as regard to total behavioral problems between children on monotherapy as compared to polytherapy in both younger (10.5% vs 17.1 %, $P=0.35$) as well as older age groups (35% vs 41.5%, $P=0.41$), respectively(42).

5. CONCLUSION:

The results provide an important estimate of the burden of behavioral problems in children with epilepsy. There is a high prevalence (46.3%). of emotional and behavioral problems among children on treatment for epilepsy. Therefore, early screening for these problems as well as education of the parents and other caregivers as well as the children about their concerns would help to reduce their effect and help in management of these patients. The most prevalent problems were attention problems, aggressive behavior, social problems and withdrawal/ depression Awareness of these conditions by the clinicians managing these patients would inform the choice of AED prescribed to avoid those which may contribute to behavioral difficulties, as well as form a basis for integrated management comprising of both pharmacotherapy and psychotherapy. Also behavioral problems were more with increased frequency of seizures, those who were taking polytherapy and those with GTCS type of seizures. These factors will also help in deciding the AED therapy, why is it important to control seizure frequency and will also help the future studies to take up these factors in important consideration.

Recommendations:

Screening of children with epilepsy for emotional and behavioral problems by clinicians would ensure early detection and hence reduce their effect. Sensitization of the clinicians who treat children with epilepsy which will inform the choice of AEDs used in their management, to avoid those medications linked to behavioral problems. Counseling regarding behavior problem must be given so as to lesser the burden. Patient on AED should be monitored with tools particularly on a polytherapy AED and normal IQ. All children should be sent to psychiatrist and pediatric psychologist for early detection and prompt intervention. Individual and group psychotherapy

may be of help in children with epilepsy. It has been reported to improve self-esteem and reduce emotional and behavioral problems.

List of abbreviations:

ADHD – Attention Deficit hyperactive disorder

AED – Anti epileptic drugs

CBCL – Child behavior checklist

GTCS – Generalised tonic clonic seizure

IQ – Intelligence quotient

MP – Madhya Pradesh

N.S.C.B MCH – NetajiSubhash Chandra Bose Medical College Hospital

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