TAJ June 2010; Volume 23 Number 1

ISSN 1019-8555
The Journal of
Teachers Association
RMC, Rajshahi

Original Article

Profile of Children Presenting with Epilepsy in a Tertiary Health Care Centre in Bangladesh

Md Belal Uddin[1], Md Mizanur Rahman[2], M A Mannan[3], M A Hossain[4], M S Hoq[1]

Abstract

Epilepsy is a common neurological problem in children. A retrospective study was carried out among the epileptic children attending in the child development and Neurology service center of the department of Pediatrics of Bangabandhu Sheikh Mujib Medical University, Dhaka over a period from September 1999 to September 2001. The aim of this study was to find out clinical profile of epilepsy in children attending in a tertiary care hospital. One hundred twenty children of 1 month to 15 years of age of both sexes were included. Febrile seizures and seizure due to acute CNS infection were excluded from the study. This study showed that epileptic children were mostly from urban area (58%) with M&F 3.14:1 and 50% of them between 1-5 years of age with mean age 2.67 years it was found that most of the children were term (86.55%); home delivered (67.80%), normal birth weight (86.55%), history of delayed crying (43.78%) and history of resuscitation (24.00%). Majority of the patients had perinatal history of irregular and no antenatal check up 51.25%. Common age of onset of seizures was found in the most cases (57.75%) before 1 year of age. GTCS (48.27%) was the commonest pattern of seizure.

Epileptic children were mostly severe type (71.70%), which were associated with daily seizure discharged (66.67%). Some of the patients (39.53%) were associated with known provoking factors. Gross motors (58.62%) were the common associated impairment or disability of the epileptic patients. About one third of the patients (32.46%) were associated with cerebral palsy where quadriplegic type was common 48.65%). A significant number of patients (44.8%) were treated previously with AEDs. Among them 60% were treated with single drug. Fifty one percent of the epileptic children were treated inadequately. After attending in the neurology center 69.25% of the patients were getting mono therapy and polytherapy was given in 30.48% of the patients. Carbamazipine and Valproate were commonly used in initial treatment. After initial treatment, control of seizures occurred in 54.25% of cases at different duration. With poly therapy 22.22% of patients did not response with AEDs. During the study period total 26 patients were remain seizures free at different duration.

TAJ 2010; 23(1): 46-50

Introduction

Epilepsy is defined as two or more unprovoked seizures[1]. Epilepsy is one of the most common neurological disorders and has no age, racial, social, sexual or geographical boundaries.In developed countries over all incidence of epilepsy in the general population is estimated to range from 0.5-2% [2] The magnitude of childhood epilepsy is likely to be greater in developing countries due to greater incidence of risk factors predisposing to epilepsy[3]. In India incidence is 4-7.8/10,000 and prevalence is higher[3]. In

[1] Assistant Professor, Department of Pediatrics, Rajshahi Medical College, Rajshahi.
[2] Professor, Department of Pediatric Neuromedicine, BSMMU.
[3] Chairman & Head (Rtd.), BSMMU.
[4] Associate Professor, Department of Pediatrics, Rajshahi Medical College, Rajshahi.

Bangladesh there is no national statistics of incidence and prevalence In developing countries due to socio-cultural effect prevalence of epileptic patients at community level are high[4]. This study was done to find out the clinical profile of the epileptic children attending in a tertiary care hospital. It would be useful to know the pattern or characteristic of the epileptic patients and mode of management of the epileptic children attending in a tertiary care hospital in Bangladesh.

Objective of study:

To find out the clinical characteristics of epileptic patients attending in a child development and neurology center of a tertiary care hospital.

Material and Methods

Place of Study: Child development and neurology center in the department of Pediatrics of BSMMU. **Study design**: Clinical records based retrospective study. **Period of Study**: September 1999 to September 2001.**Samplesize**: Completed records of epileptic patient from September toSeptember2001.**Variable:** Demographic, family-illness, features of epilepsy and it related and functional disability, antiepileptic drugs**. Inclusion criteria:** children in the age group of one month to 15 years having two or more a febrile, unprovoked seizures. **Exclusion criteria:** febrile seizure, seizures due to on going CNS infections, head injury causing acute seizure.

Methodology: One hundred twenty patients were included in this study. Detail history of each patient was collected from hospital record sheets. The patients with seizure disorders who had two or more unprovoked seizures were considered as epilepsy. Clinical condition and antiepileptic drugs response were observed and recorded in the data sheet. The recorded investigations were observed properly and noted in the data sheet. In the record sheet of the patients, drug history was evaluated and noted accordingly. Finally profile of epilepsy was evaluated and recorded in the questionnaires. All the recorded data were analyzed in the SPSS (V-10) program of computer. Relation of different variables was done by Pearson Chi-S**5**

Results

Total 120 cases of epilepsy were included in this study. The results are presented below in a statistical figure. Majority (50%) of the affected patients were within age group of 1-5 years, mean age was 2.67years. Male were attending more (76%) and urban origin was predominant (58%). There were history of consanguinity (9%) and family history of febrile seizure (3%) and there was no history of epilepsy in the family of affected children. Most of the affected children (67.80%) were delivered at home and a large group was by normal vaginal route 83.89%. Among the affected children majority (89.83%) were term. There was history of delayed crying 41.44% and 24% was needed resuscitation & most of the patients (67.26%) were not associated with neonatal illness and 32.74% had history of illness. This study revealed that seizures developed before the age of <lyr (57.75%) and was less common after 6 yrs of age (12.93%) & common type of seizures at onset were GTCS (46.55%) Myoclonic (generalized) 21.55% absence seizure 6.89% and other types were less common. Most of the epileptic patients were associated with gross motor disability (58.62%) and significant number of patients had cognitive disability (26.71%) & total 37 patients (32.45%) were associated with cerebral palsy among them quadriplegic type was predominant (48.65%). Table 1: After evaluation of characteristics of seizures it was found that GTCS (48.27%) was the commonest type.

Table 1: Classification of seizure after evaluation, N=116

Seizure after evaluation	Number	Percentage
Generalized myoclonic	21	18.10%
Focal myoclonic	3	2.59%
General clonic	1	0.86%
General tonic	7	6.03%
General tonic clonic	56	48.27%
Atonic	1	0.86%
Absence	4	3.49%
Simple partial	3	2.59%
Complex partial	3	2.59%
Secondary generalization	4	3.49%
Infantile spasm	4	3.49%
Unclassified	3	2.59%
Epileptic syndrome	2	1.72%
Mixed	4	3.49%

Study reveals that partial seizure was 11.21% and generalized seizure was 88.77%. Among partial seizure idiopathic group was 46.15% and symptomatic 42.72% type was common in generalized seizures. It was found that 19.63% of the patients had history of febrile seizure and 16.65% multiples febrile seizure. The head of epileptic patients were normal (81.63%) and 16.51% had microcephaly. EEG was done in 62 patients in whom abnormalities were found in 42 of the case. CT scan revealed abnormalities in 24 patients out of 33.Total 105 patients were started with AED's. Carbamazepine was used 1/3 of the patient (30.48%). Poly therapy was given in 30.48% of epileptic patients. Control of seizure with initial therapy was found in 54.25% of the epileptic patients and initial non-responders were 18.09%. In case of poly therapy 33.33% were initial responder. It was found that 46 patients (56.52%) were remaining seizure free. In past history of AED therapy, it was found that 44.87% of patients were treated before attending in neurology unit. Among them single drug was used in 60% of the patients and with inadequate doses in 51.43%.

Discussion

Childhood epilepsy is a common neurological problem. One hundred twenty patients were studied to find out the clinical profile of epilepsy in children. The majority of the patients were of 1-5 years of age (50%), mean age was 2 yrs & 6 months. Similar number of patients (41.6%) was found in another study done by Sykes R.M.[5]The epileptic children were found mostly from urban community (58%) and 42% were from rural areas. In this study perinatal history revealed that a significant number of epileptic patients had history of delayed crying. Resuscitations were needed 24% of hospital delivered babies whom had a definitive documentation of resuscitations

Table-1 shows that seizure types at onset of the attending patients were GTCS (46.55%), myoclonic (both focal & generalized) 23.27%, Absence Table-1 shows that studied epileptic patients were diagnosed as generalized seizure types 94.83% and partial seizure 5.17%. These findings were similar to other studies. One study showed that generalized seizures were 96.3% and partial seizures were 3.7%60. Hossain N.[6] did another study. It was shown generalized seizure 94% and partial seizures 6%. This study was dissimilar to Kwong et al[9]. It was shown that generalized seizures were 46.9% and partial seizures were 48.5%. Kwong et al[9] showed that idiopathic seizures were 42%, symptomatic and cryptogenic were 40.8% and 16.3% respectively. This study revealed that idiopathic seizures were 40.83% symptomatic and cryptogenic seizures were 39.66% and 15.51% respectively. It was observed that most of the epileptic patients were severe types (71.70%) according to seizure rate. Majority of the patient had history of discharging seizures more than 50-100 times daily (69.52%). The duration of episodes of seizure was gradually increasing among 65.71% of the patient before attending at neurology center. These findings could be explained that most of the patients were treated with inadequate dose of AEDs (51.43%). It was found that most of the patients were symptomatic and cryptogenic types. These might be developed severity of the seizures. Among the recruited epileptic patients 37 patients (32.46%) were associated with cerebral palsy. This finding did not coincide with study by Rahman[8]. It was shown 57.2%. But it was consistent with Veena Kalra[10]. She showed 25-35%. The patients with cerebral palsy were associated with mainly quadriplegic type (48.65%). This one third of epileptic patients with cerebral palsy might be an outcome of bad perinatal history and neonatal illness.

Hermman et al and Seidenberg[11] was showed epileptic patient might be experienced behavioral and psychiatric problems (20-30%) and 30% patients of epilepsy might have speech problem. About 30-50% of the epileptic patients might have mental retardation (Cognitive disorder). This study revealed that significant number of epileptic patients were associated with some impairment or disability, e.g. gross motor (58.62%), fine motor (41.48%), vision (15.52%), hearing (12.07%), speech (37.93%), behavioral (18.97%), cognitive (26.72%). Some findings of this study correlated

with above authors. This study shows that a large number of patients had history of developmental delay (66.69%). This finding was dissimilar to another study[7] It was shown 24.1%. This could be explained a large number of studied patients had bad perinatal history (51.25%) and patient with uncontrolled seizures in early age both might be give rise to developmental delay.

Study shows that about 16.15% of the patients were associated with microcephaly. It did not consistent with studies done by Rahman [7] and Sykes [5]. They showed 7.8% and 5.1% respectively. Regarding nutritional assessment, it was found that of the patients were under moderate to severe wasting and 13.08% of patients were moderate to severe stunting. This feature could be explained that majority of the patients were associated with cerebral palsy and GTCS type of seizures. This group of patients had in coordination of swallowing. So, proper nutrition could not be provided resulting malnutrition.

In this study revealed that a significant number of epileptic patients had a history of febrile (19.63%) and multiple febrile seizures. It was dissimilar to another study[7]. It was shown 3.4%. This could be explained that a large number of patients were associated with fever as a provoking factor.

In this study revealed that EEG and CT scan of brain were advised in most of the cases. But due to financial constraint it was not possible in all cases. EEG were done by 62 patients (51.67%) of cases among those 32.30% were normal findings and in majority cases it were abnormal 66.70% which consistent with EEG findings of Rahman[7]. It was shown 31.09% and 68.10% respectively. CT scan were done in 33 patients (27.5%) of cases and it was found that 72.7% of cases shows different types of abnormalities and 27.3% cases revealed normal founding. These findings also similar to the findings of CT scan of Rahman[7]. It was shown 78.4% and 21.6% respectively. This finding correlated the number of symptomatic and cryptogenic patients of epilepsy where abnormal finding of CT scan could be expected. A significant proportion of patients (44.87%) were previously treated with AEDs, mostly (60%) were with single drug and 51.23% of patient with inadequate doses. Among the study group of patients, monotherapy was commonly (69.52%) used. Polytherapy was used in 30.48% of the patient whom were treated previously before attending in neurology unit. Among mono therapy Carbamazepine and sodium valproate were widely used 30.48% and 22.86% respectively. After starting with initial therapy, control of seizures occurred of 54.25% at different duration. It was nearly similar to Kwong et al[9]. It was shown 69%. It was also similar to another study. [5] That study showed 50.6%. After initiation of polytherapy 22.22% of the patients were refractory to response. It was consistent with Wakamoto H et al[12] it was shown 17.4%. During this study period total 26 patients were remain seizure free (56.62%). It was similar to another study[5] it was shown50.6%.

Conclusion

This was a retrospective study on epileptic children to observe the clinical characteristics, associated perinatal factors, co-morbidities, treatment pattern of epilepsy on presentation to a Pediatric neurology out patient clinic. Generalized tonic clonic and myoclonic seizures were the common types of seizure. Generalized idiopathic epilepsy was the commonest type. Delayed crying, low birth weight, irregular antenatal and no antenatal checkup were the main perinatal factors associated with a significant number of epileptic patients. Cerebral palsy and cognitive delay were the common co-morbidities. The majority of the patients were not properly treated at the time of presentation at neurology unit. This study suggests further large hospital based and epidemiologic study to focus on the clinical characteristics of the epileptic children in Bangladesh.

References

1. Protibha D. Singhi, Sudeshna Mitra, Approach to the management of a child with epilepsy; Indian Peditrics, volume 34- January 1997, page:27-40.
2. Cavazzuti GB. Epidemiology of different types of epilepsy in school a children of Modena, Italy. Epilepsia 1980; 21:57-62.
3. Veena Kalra. Management of childhood epilepsy, Indian Journal of Pediatrics, special suppliment Epilepsy. 2000/January; 67: 512-521.

4. Shorvon SD and Farmer PJ. Epilepsy indeveloping countries: A review of epidemiological, sociocultural, and treatment aspects. Epilepsia 1988; 29(suppl): S36-S54.

5. Sykes R.M. Epilepsy in children in Benin City,Nigeria. Annals of Tropical Paediatrics (2002) 22, 287-196.

6. Hossain N. A clinical profile of seizure disorder in children (dissertation), Dhaka:BCPS 2000.

7. Rahman M.M., Akhter S., Islam M.N., Akhter K., Khan F.A., Sani M.N. Pattern of seizure disorders among children attending child development and neurology center of BSMMU. Abstract International NeurologySeminar, 17-18 December 2002, Sheraton Hotel, Dhaka, Bangladesh.

8. Dieterich, E. Doose, H., Baier, W.K. Fichsel,H. (1985) ' long term follow up of childhood epilepsy with absence. II: Absence epilepsy with initial grandmal', Neuropaeditrics 16:155-58.

9. Kwong, K.L., Chak W.K., Wong S.N., So, K.T. Epidemiology of childhood epilepsy in a cohort of 309 Chinese children; Pediatr –Neurol 2001 April; 24(4): 276-82.

10. kalra Veena.Seizure disorders and epilepsy,In:Prof.VeenaKalra, editors: Practical Paediatric Neurology; first edition,2002 Arya publications, New Delhi; P49-77.

11. Hermman BP, Whitman S, Dell J 1989 correlates of behaviour problems and social competence in children with epilepsy age 6-11. In: Hermman BP, Seidenberg M(eds) childhood epilepsies: neuropdychological, psychosocial and intervention aspects, John wiley, chichester, PP(143-158).

12. Wakamoto H., Nagao H., Hayashi M., Morimoto T,. Long term medical, educational, and social prognoses of childhood onset epilepsy. Brain-Dev. 2000 June; 22(4):246-55.

All correspondence to:
Md Belal Uddin
Assistant Professor
Department of Pediatrics
Rajshahi Medical College