

THE PREVALENCE AND CLINICAL STATUS OF EPILEPSY AMONG BANGLADESHI CHILDREN

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ABSTRACT

Objective: In this study our main goal is to evaluate the prevalence and clinical status of epilepsy among Bangladeshi children. **Method:** This cross-sectional study was carried out at Tertiary Medical college and hospital from May 2014 to June 2015. A total of 120 children who had been seen in the epilepsy clinic were enrolled into the study. Sample were collected through purposive sampling as per inclusion criteria. **Results:** During the study, majority of the cases were male, 60%. Perinatal asphyxia present in 44% cases and neonatal seizures present in 40% cases. According to clinical presentation, 60% had generalized epilepsy followed by 60% had symptomatic epilepsy, 70% had multiple seizure, 75% had high rate of seizures. 40% had major motor disability and 15% had minor motor disability. Also, 70% had poor cognitive development. **Conclusion:** The study shows that late and related neurodevelopmental morbidities occur in most children in tertiary institutions for seizure disorders. In Bangladesh, additional investigation is needed in the process of establishing early reference and extensive control of pediatric epilepsy.

KEYWORDS: Epilepsy, seizure disorder, disability.

INTRODUCTION

Epilepsy is a chronic neurological illness or set of diseases characterised in the absence of inciting circumstances by the recurring (two or more) seizures. An epileptic seizure is a clinical occurrence associated with an aberrant and excessive release from a certain number of neurons at a certain location in the brain. There are over 50 million individuals worldwide who live in resource poor nations with little or no access to medical services or treatment of which up to 75 percent are epileptic disease.^[1-3]

Bangladesh is one of the world's most densely inhabited countries with quite a number of chronic neurological diseases. While nationwide statistics are not yet available in the country, several hospital-based researches have shown some of the epilepsy condition in Bangladesh. Studies have shown a prevalence rate of around 5 per 1000 people in affluent nations, compared to higher in underdeveloped countries. Men have a higher risk than women and rural populations than urban populations.^[4-5] The etiology is age-dependent. Neonatal and adult infections are frequent in the nerve system, birth trauma, hypoxia, central nervous system infections, and trauma

in the head, brain, stroke, and infections are common in the middle aged and elderly.^[1]

OBJECTIVE

- To evaluate the prevalence and clinical status of epilepsy among Bangladeshi children.

METHODOLOGY**Types of study**

- It was a cross sectional study.

Place and period of the study

- The study place was carried out at Tertiary medical College Hospital, Dhaka District. Bangladesh under supervision of Prof. Abid Hossain Mollah. Where data were collected from May 2014 to June 2015.

Study population

- A total of 120 children who had been seen in the epilepsy clinic were enrolled into the study. Sample were collected through purposive sampling as per inclusion criteria.

Method

- Data were collected by using a pre designed questionnaire. The questionnaire was prepared reviewing literature and consulting with medical research experts.

Data analysis

- All collected data were coding and input in SPSS-25 for further analysis. Both descriptive and inferential statistics done. Descriptive statistics included frequency distribution, percent, mean, standard deviation; graph, tables, figures and inferential statistics.

RESULTS

In table-1 shows age distribution of the study group where majority of cases belong to 1.1-3 years age group, 55%. The following table is given below in detail:

Table 1: Age distribution of the study group.

Age group	%
1months-1 year	10
1.1-3 years	45
3.1- 5 years	20
5.1-7 years	14
>7years	15

In figure-1 shows gender distribution where 60% were male and 40% were female. The following figure is given below in detail:

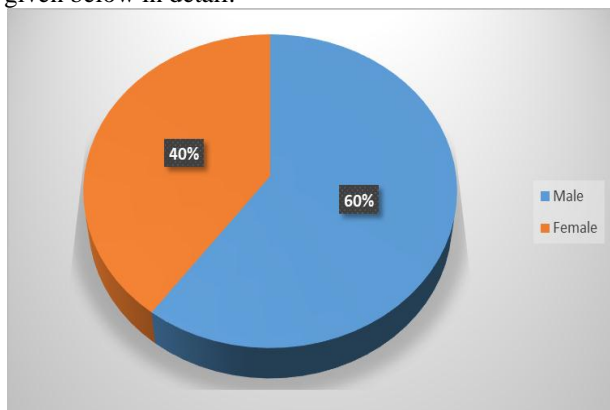


Figure-1: Gender distribution.

In table-2 shows perinatal, and neonatal history where Perinatal asphyxia present in 44% cases and neonatal seizures present in 40% cases. The following table is given below in detail:

Table 2: Perinatal, and neonatal history of the study group.

Perinatal asphyxia	%
Absent	56
Present	44
Neonatal seizures	%
Absent	60
Present	40

In table-3 shows distribution of study group according to clinical presentation where 60% had generalized epilepsy followed by 60% had symptomatic epilepsy, 70% had multiple seizure, 75% had high rate of seizures. The following table is given below in detail:

Table 3: Distribution of study group according to clinical presentation.

Type of epilepsy	%
Generalized epilepsy	60
Partial epilepsy	29
Unclassifiable epilepsy	11
Aetiological classification	%
Symptomatic epilepsy	60
Idiopathic epilepsy	40
Seizure type	%
Multiple seizure	70
Single seizure	30
Rate of seizures	%
High rate of seizures	75
Low rate of seizures	25
Seizure remission	%
Poor (<100% remission)	55
Good (100% remission)	45

In table-4 shows distribution of the study group according to developmental status where 40% had major motor disability and 15% had minor motor disability. Also, 70% had poor cognitive development. The following table is given below in detail:

Table 4: Distribution of the study group according to developmental status.

Associated non-convulsive disability	%
Normal motor function	45
Major motor disability	40
Minor motor disability	15
Cognitive development	%
Poor	70
Normal	30

In figure-2 shows distribution of study group according to ECG findings where abnormal cases were found 80% cases. The following figure is given below in detail:

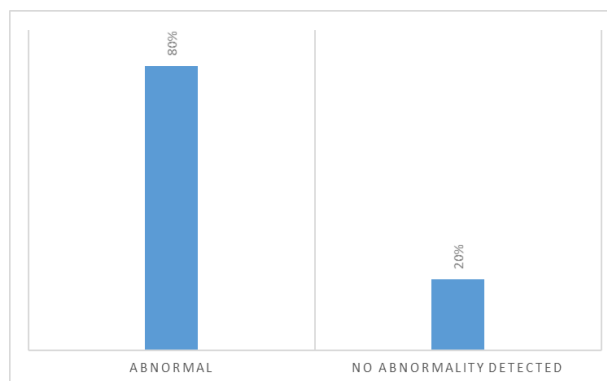


Figure 2: Distribution of study group according to ECG findings.

DISCUSSION

Distribution of specific types of epilepsies in the study population showed a shift from generalized to partial epilepsies when EEG findings were considered. On the basis of clinical history and examination, 60% had generalized epilepsy followed by 60% had symptomatic epilepsy, 70% had multiple seizure, 75% had high rate of seizures. Similar patterns were seen in Nigerian hospital, where generalized tonic-clonic seizures accounted for 62.2% of cases and partial seizures for 17.4% on the basis of clinical evidence.^[6]

In a Bolivian study, the percentage of children with partial seizures (with or without secondary generalization) increased from 33.9% to 53.2% when EEG findings were included.^[7]

These results suggest that establishment of EEG services in major hospitals in less developed countries might be considered both appropriate and feasible as a non-invasive procedure for a more realistic diagnosis of childhood epilepsies and for specific management.

A majority of the study children had symptomatic epilepsy, indicating the need for further investigation of underlying brain damage or defect. That the study population was at high risk for early neurological impairments is also made evident by the fact that a history of perinatal asphyxia was found in a large proportion (44%), and 40% gave a history of neonatal seizures. In a study in South Africa, 43% of children had historic, clinical, and radiological evidence of symptomatic epilepsy.^[8]

These findings indicate a need for further investigation of underlying causes, and a need for measures within the community to reduce perinatal insults, to identify the newborn infant at high risk, and to identify early intracranial infections and other preventable and treatable causes of secondary epilepsies.

Neurodevelopmental morbidities (high rates of seizures, multiple seizure types, associated motor disability, and poor cognition) were found to be significant predictors of poor seizure remission.

To address each child's problems holistically, the development of multidisciplinary neutralizability services, involving doctors, psychologists, and therapists, might be a more effective process for achieving optimum development of children with epileptic disorders, even in countries with limited services and resources.

In Bangladesh, with declining child mortality rates and decreasing family size, parents are increasingly concerned about the 'quality of life' of their children. The importance of this issue is reflected in the recent attention paid by UNICEF on 'early child development' as an important component of child health care worldwide, including Bangladesh.^[9]

CONCLUSION

The study shows that late and related neurodevelopmental morbidities occur in most children in tertiary institutions for seizure disorders. In Bangladesh, additional investigation is needed in the process of establishing early reference and extensive control of pediatric epilepsy.

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