ORIGINAL RESEARCH PAPER

Volume-7 | Issue-3 | March-2018 | PRINT ISSN No 2277 - 8179

INTERNATIONAL JOURNAL OF SCIENTIFIC RESEARCH

A PROSPECTIVE STUDY ABOUT ROLANDIC EPILEPSY FROM TERTIARY CARE HOSPITAL OF NORTH INDIA.

Neurology

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ABSTRACT

Background- Rolandic Epilepsy is the most common idiopathic partial epilepsy in childhood (10-20%) with excellent prognosis. Age of onset is 3-13 yrs . Family history of febrile convulsion, epilepsy or subclinical centrotemporal sharp waves may be seen in 40% of cases Seizure semiology is characterized by brief hemifacial seizures becoming generalized typically during sleep or simple partial seizure with unilateral paresthesia, tonic clonic seizures, speech arrest, and inability to swallow with drooling of saliva. EEG shows diphasic and high voltage sharp wave centrotemporal activity. Drowsiness and slow sleep considerably increases the discharge rate. The sharp wave activity is unilateral in majority of patients and can be bilateral and also can be outside the centrotemporal area. Spontaneous remission with or without AEDs is the rule. Rolandic epilepsy or Benign epilepsy of childhood with centro-temporal spikes (BECTS) has been reported with brain lesions, which are not causally related.

Objective- To know the prevalence of rolandic epilepsy, study about its characteristics and to compare with other studies.

Methods and Observations-

Inclusion criteria-

1 Age between 1-14 years of age
2 EEG – Spikes/sharp waves at centrotemporal/frontocentral region.
3 CT/MRI – Normal or abnormality unrelated to epileptiform activity/syndrome.

Exclusion criteria

1 Age <1 yr and >14 years.
2 Non progressive encephalopathy cases with epilepsy.
3 Characteristic features of rolandic epilepsy, but interictal routine scalp EEG not suggestive of rolandic or normal.
4 Symptomatic cases.

Over a period of 2 years 2500 epileptic patients seen. Between 1-14 years of age group were 280. 30 cases included in the study. Boys and girls were equally affected. Mean age of diagnosis was 7.8 years. Hemifacial motor seizure were present in 86 % of cases and 92% become secondarily generalized, only 8% remains localized to face. 95% has excellent response. Only 2 cases needed 2 AED and 1 case on 3 AED. One of patient has recurrent attacks inspite of multiple AED

CONCLUSIONS- Rolandic Epilepsy is the most common idiopathic partial epilepsy in childhood. It is 5.6% of the total childhood epilepsy patients. Family history was in 20% of patients with BECTS. It commonly presents with unilateral facial motor seizure with excess salivation and usually well controlled with monotherapy. It has a good prognosis, however a poor outcome though uncommon, may also be seen.

KEYWORDS

BECTS, Rolandic epilepsy, Benign childhood epilepsy, Idiopathic Partial epilepsy,

Introduction

Rolandic epilepsy is most common idiopathic partial epilepsy in children. It also known as BECTS (Benign epilepsy of childhood with centro-temporal spikes) or sylvian epilepsy. Most of the children has seizures in sleep or awakening1,2, mainly facial clonic seizures and drooling of saliva. EEG shows typical pattern, presence of epileptiform activity over cenro-temporal region. This EEG pattern inherited as autosomal dominant pattern, only 25% of this pattern has incidence of seizure. Prognosis of this syndrome is very good, most of the patient remain seizure free after 16-17 years of age. But now the one thought process is that epilepsy of childhood with centro-temporal spikes may not be as benign as previously assumed. As previously many of us thought and still strongly believe that BECTS will automatically abate after 16 years of age and no benefit of antiepileptic drugs. But some study has describes the treatment effects on seizure frequency as well as improvement of cognition in children with rolandic epilepsy and lastly study conclude, that treatment with anti-epileptic drugs is justified, if treatment reduces seizures, prevents the evolution to atypical forms, or diminishes the negative cognitive consequences associated with the disease3. Some children may develop behavioural or cognitive problem, which are reversible in most of them4-10.Levetiracetam and sulthiame3 are the recommended treatments according to the existing evidence, which is still insufficient. A larger randomized controlled trial is needed further to support this thought.

Methods and Observations-

This study has been carried out in a tertiary care hospital. Patients has mostly referred from other institution, primary health care, physician, pediatricians etc. Diagnosis of BECTS/Rolandic epilepsy were made based on typical clinical pattern and electroencephalography (EEG) . Magnetic Resonance Imaging (MRI) were performed to exclude structural lesions. Criteria for selecting cases were as following-

Inclusion criteria-

1 Age between 1-16 years of age
2 EEG – Spikes/sharp waves at centrotemporal/frontocentral region.
3 CT/MRI – Normal or abnormality unrelated to epileptiform activity/syndrome.

Exclusion criteria

1 Age <1 yr and >16 years.
2 Non progressive encephalopathy cases with epilepsy.
3 Characteristic features of rolandic epilepsy, but interictal routine scalp EEG not suggestive of rolandic or normal.
4 Symptomatic cases.

Over a period of 2 years 2500 epileptic patients seen. Between 1-14 years of age group were 280. We classified these cases of epilepsy recording to the revised ILAE classification[8]. Of the 2500 cases, childhood epilepsy was 280 and only 30 cases were of BECTS..

30 cases included in the study. Boys and girls were equally affected. Mean age of diagnosis was 7.8 years. Hemifacial motor seizure were present in 86 % of cases and 92% become secondarily generalized, only 8% remains localized to face. 95% has excellent response. Only 2 cases needed 2 AED and 1 case on 3 AED. One of patient has recurrent attacks inspite of multiple AED.

TABLE 1: PREVALENCE OF IDIOPATHIC LOCALIZATION RELATED EPILEPSIES IN CHILDREN

Study	Year	N	Age gp (yr)	BECTS (%)	Epilepsy occipital paroxysms (%)	Total (%)
Eiji Oka[11]	1995	1871	<10	0.2	0	0.2
Eriksson[12]	1997	329	<15	8	0	8
Iceland[13]	1998		3-15.	9	NA	9
Murthy[14]	1998	2531	all ages	0.6	0.1	0.7
Shah[15]	1999	1742	<15	6.4	0.7	7.1
Waaler[16]	2000	198	6-12.	16.7	0	16.7
Present	2003	177	1-14.	5.6	0.6	6.2

Of the localization related epilepsies 33 cases were idiopathic, of this 30 cases had benign childhood epilepsy with centrotemporal spikes (BECTS) and 3 cases had childhood epilepsy with occipital paroxysms (CEOP).

As seen in (Table 1) the prevalence of BECTS in different studies has varied considerably. This may be related to the different populations screened in the different studies. Our results are similar to those by Eriksson[12], Shah[15] and Iceland[13] where age groups were almost similar. The higher percentage by Waaler[16] in his study can be explained by the age group screened which included only children between 6-12 years of age where this epilepsy syndrome is most common. The low prevalence in Murthy's[14] study is also explained on the different population group. The study by Eiji Oka et. al.[11] was a retrospective study where past medical records were analyzed. Many cases in their study could not be classified due to inadequate clinical or EEG data hence the prevalence of this benign epilepsy may have been found to be lower that in the usual population.

TABLE 2: COMPARISON OF CHARACTERISTICS OF BECTS CASES

Characteristics	Iceland study[13]	Present
Total cases	17	30
Sex M/F (%)	47/53	50/50
Mean age at diagnosis (yrs)	8.8	7.8
hemifacial motor seizure	15 (88.2%)	27 (90%)
Sec generalized seizure	14 (82.3%)	27 (90%)
Seizure free (%)	95	90

In the table 2 we have compared the characteristics of our patients with BECTS with those in the Iceland study[13]. The characteristics are similar as far the seizure pattern, sex distribution and age of onset are concerned. Though it is widely believed that BECTS is a benign epilepsy with an excellent prognosis, we also had one case that was difficult to control despite trials of multiple AED's in adequate therapeutic doses. Cases of BECTS with poor therapeutic response have been reported by others. It has also been proposed that BECTS and Landau Kleffner syndrome form the two ends of a syndromic spectrum with varying prognosis from excellent to poor[17,18,19].

CONCLUSIONS-

Rolandic Epilepsy is the most common idiopathic partial epilepsy in childhood. It is 5.6% of the total childhood epilepsy patients. Family history was in 20% of patients with BECTS. It commonly presents with unilateral facial motor seizure with excess salivation and usually well controlled with monotherapy. It has a good prognosis, however a poor outcome though uncommon, may also be seen.

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