Original Research Article

Study of clinicodemographic profile of children with Epilepsy

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Abstract this study was done in 166 patients of epilepsy to evaluate clinicodemographic profile in form of incidence as a whole and type wise, age distribution and associated other morbidity with or without contributing factors in tertiary care centre, civil hospital, Ahmedabad.
Key Word: Epilepsy, generalized, focal, idiopathic, symptomatic

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INTRODUCTION

Epilepsy is a condition characterized by recurrent (two or more) unprovoked seizures separated by more than 24 hours. Epilepsy is one of the most common serious disorders of the brain, affecting about 50 million people world-wide. At least 50% of cases begin at childhood or adolescence. One of every ten people will have at least one epileptic seizure during a normal lifespan, and a third of these will develop epilepsy. Epilepsy accounts for 1% of the global burden of disease; 80% of the burden of epilepsy is in the developing world, where in some areas 80-90% of people living with epilepsy receive no treatment at all. In India, the number of people living with epilepsy is almost 5 million. The prevalence rates of epilepsy in India are similar to those of developed nations. In India point prevalence of epilepsy is 5/1000. Epilepsy consists of more than seizures for the affected individual and immediate effects on his or her family. Epilepsy leads to multiple interacting medical, psychological, economic and social repercussions, all of which need to be considered in order to understand fully the impact of this condition. Fear, misunderstanding and the resulting social stigma and discrimination surrounding epilepsy often force people with this disorder "into the shadows". Absenteeism in school leads to educational backwardness and poor school performance. When child grows as an adult they suffer from anxiety, depression, loss of job and difficulty in getting married due to social stigma. Majority of the patients can be treated with single antiepileptic drug and many children outgrow epilepsy as they become adult. This study is done to evaluate incidence, etio-pathogenesis and clinical profile of epilepsy.

MATERIAL AND METHODS

Prospective analytic study done in indoor patients at a tertiary care center with detailed history and physical examination.

Inclusion criteria: Children between 1 month and 12 years of age who presented for the first time with epileptic seizures (i.e. recurrent unprovoked seizures) and admitted in pediatric care unit were included in study.

Exclusion criteria:

- Neonates were excluded from this study.
- Febrile seizures were excluded from this study.
- Conditions mimicking seizures (pseudo seizure) like breath holding spells, syncope, migraine, night terror, sleep walking etc. were excluded.

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- Acute symptomatic seizure that does not recur once the acute cause has settled was not included. Details of present episode, relevant past and family history were elicited in each individual. History of perinatal events and development was collected in further detail. Physical examination findings were entered and child was subjected to base line investigations as per proforma. Specific investigations like EEG was done in all patients. Neuroimaging like CT/MRI was done as and when indicated in selected children. Patients were clinically classified according to **ILAE 2010** classification. Appropriate therapy was given to all patients. The patients who did not respond to first line drugs were shifted to second line and third line drugs as per standard protocols.
- **First line drugs:** Sodium valproate, Carbamazepine, Phenobarbitone and Phenytoin sodium.
- **Second line drugs:** Topiramate, Levetiracetam, Clobazam, Clonazepam, Lamotrigine and Oxcarbazepine.
- **Third line drugs:** ACTH, vigabatrin, zonisamide and lacosamide.
- On follow up treatment, outcome and sequelae were monitored.

OBSERVATION AND RESULTS

Table 1: Age of onset of first convulsion

Age group	Present study (2015) No. of patients N=166	Percentage
1 month -1 year	12	7.2%
>1 year -5 year	54	32.5%
>5 year -10 year	86	51.8%
>10 year	14	8.4%

Table 2: Distribution of types of epilepsy in various age groups

	1mo-1year (12)	1-5year (54)	5-10years (86)	≥10years (14)	Total (166)
GENERALIZED					
1.GTC	6 (5%)	37 (31.3%)	66 (55.9%)	9 (7.6%)	118 (100%)
2.Tonic	-	2	1	1	4
3.Clonic	-	1	-	-	1
4.Atonic	-	1	-	-	1
5.Myoclonic	3	1	2	-	6
6.Absence	-	2	-	-	2
FOCAL	3 (8.8%)	10 (29.4%)	17 (50%)	4 (11.7%)	34 (100%)
UNCLASSIFIED	-	-	-	-	-

Table 3: Association with Family history

Family history	Present study No.of patients N=166	Percentage
Febrile convulsions	7	4.2%
Epilepsy	14	8.4%
Neurocutaneous syndrome	-	-
CNS-SOL	-	-
Neurodegenerative condition	-	-

Table 4: Association of epilepsy with past history

Past history	Present study (2015) No.of patients N=166	Percentage
Complex febrile seizures	12	7.2%
CNS infection		
1.Tuberculous infection	12	7.2%
2.Pyogenic infection	3	1.8%
Head injury	1	0.6%

Table 5: Type of epilepsy according to etiology

	Idiopathic epilepsy		Symptomatic epilepsy	
	No. of patients (N=117)	Percentage %	No. of patients (N=49)	Percentage %
FOCAL	18	15.3%	16	32.7%
GENERALIZED	99	84.6%	33	67.3%
1.Generalised tonic clonic	89	76%	29	59.1%
2. Tonic	3	2.5%	1	2%
3. Clonic	1	0.8%	-	-
4. Atonic	1	0.8%	-	-
5. Myoclonic	3	2.5%	3	6.1%
6. Absence	2	1.7%	-	-
UNCLASSIFIED	-	-	-	-

Table 6: Abnormal CNS findings

Findings	Present study	
	No.of patients (N=166)	Percentage
Microcephaly	20	12%
Developmental delay	37	22.2%
Poor intelligence	27	16.2%
Cerebral palsy:	19	
Hemiplegic	8	11.4%
Diplegic	7	
Quadriplegic	4	
CN palsy*	3	1.8%
Involuntary movements#	3	1.8%
Deafness	-	-
Vision loss	1	0.6%
Autistic features	8	4.8%
ADHD	3	1.8%

Table 7: Causes of symptomatic epilepsy

	Present study	
	No.of patients N=49	Percentage
Perinatal*	17	34%
CNS infection**	20	40.8%
a) Pyogenic meningitis	3	6%
b) CNS TB		
TB meningitis	6	12.3%
Tuberculoma	6	12.3%
c) Neurocysticercosis	5	10.2%
d) Viral encephalitis	-	-
CNS malformation#	5	10%
Neurocutaneous syndrome	7	
a) Tuberous sclerosis	4	14.2%
b) Sturge weber syndrome	3	
Neurodegenerative condition	-	-

DISCUSSION

Incidence of epilepsy in the present study was 1.04% amongst the indoor cases. 51.8% of the total children were between the age of 5-10 years followed by 32.5% in 1 to 5 years age group at the time of diagnosis. 79.5% seizure were generalized where as 20.5% were focal in nature. Amongst the generalized type of epilepsy tonic clonic variety was the most common seizure seen in 89.3%. 7.2% children had history of complex febrile seizure. History of CNS TB was also detected in 7.2% cases. Family history for epilepsy was present in 8.4% where as that of febrile seizure in 4.2%. 70.4% of epilepsy was idiopathic and 29.6% was symptomatic in nature. Overall CNS infection was responsible for symptomatic epilepsy in 40.8%. Developmental delay (22.2%), low IQ (16.2%), microcephaly (12%) and cerebral palsy (11.4%) were the common neurological abnormality seen in these children along with epilepsy.

SUMMARY AND CONCLUSION:

Incidence of epilepsy in the present study was 1.04% amongst the indoor cases. 51.8% of the total children were between the age of 5-10 years followed by 32.5% in 1 to 5 years age group at the time of diagnosis. This observation was well correlated with standard age for epilepsy. Higher preponderance was observed amongst the male sex compared to female sex with male: female ratio of 1.3:1 and the observed difference was statistically insignificant. 79.5% seizure were generalized where as 20.5% were focal in nature. There was no child with unclassified seizure type. Amongst the generalized type of epilepsy tonic clonic variety was the most common seizure seen in 89.3% (118 out of 132). Myoclonic seizure was seen in 25% of infants and in children older than 10 years 28.5% had focal seizure. 7.2% children had history of complex febrile seizure. History of CNS TB was also detected in 7.2% cases. Family history for epilepsy was present in 8.4% where as that of febrile seizure in 4.2%. 74.7% children were having normal nutritional status. 70.4% of epilepsy was idiopathic and 29.6% was symptomatic in nature. Amongst the idiopathic group generalized seizure was present in 84.6% whereas that of focal in 15.4%. In symptomatic group focal seizure was seen in 32.7%. Relatively increased proportion of focal seizure may be due to focal neuronal damage following various insults to the brain in symptomatic group. Developmental delay (22.2%), low IQ (16.2%), microcephaly (12%) and cerebral palsy (11.4%) were the common neurological abnormality seen in these children along with epilepsy. Overall CNS infection was responsible for symptomatic epilepsy in 40.8%. CNS TB contributed in 24.6% of total symptomatic cases with TB meningitis and tuberculoma in equal proportion (6 cases each) Perinatal morbidities mainly HIE was the second most common etiology in this group (30.6%).

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