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### Original Article

# Clinico -Demographic Profile and Treatment Seeking Behaviour of Epilepsy Patients in a Tertiary Care Hospital.

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#### ABSTRACT

**Background:** Epilepsy is amongst the most common serious neurological conditions. Epilepsy presents a global problem affecting all ages, social classes, groups and countries. Studies have shown various differences in epidemiological patterns of epilepsy around the world. Epilepsy has a complex etiology characterized by recurring seizures. **Aims:** 1. To study the demographic profile of epilepsy patients, 2. To study the clinical and CT findings, among the study population. 3. To study the treatment compliance among epileptics. **Methods:** Data of 100 epilepsy patients was collected for their clinical characteristics. The investigations included EEG, CT scan and MRI tests. **Results:** Among epileptics 56% were males and 44% were females. The median age of study subjects was 19.5years. 49% were in the age group 11-30 years. 45 epileptics had primary education, 29 had secondary education, while 19 were illiterates. Age at onset of seizures was less than 15 yrs in almost half (58%) of epileptic patients. Duration of disease was more than 6 years in 39% patients. Almost 91% were non vegetarians. The most common seizure type was Generalized Tonic Clonic Seizures (53%). 58 subjects mentioned that their seizure attack was triggered by some risk factor, the most common risk factor being mental exhaustion followed by lack of sleep. Post-ictal confusion(84%), loss of consciousness(68%) and retrograde amnesia(36%) were seen following seizure. CT findings revealed that 22% patients had neuro-cysticercosis (inactive and active lesions) indicating that neuro-cysticercosis is still a leading cause of seizures and epilepsy in developing countries like India. **Conclusions:** Better understanding of the mechanisms of neuro-cysticercosis is needed to develop appropriate intervention and prevention programs. Global strategies for prevention and control should be developed and enforced with the aid of international health organizations including World Health Organization.

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### 1. Introduction

Epilepsy is a chronic disease experienced by millions and a cause of substantial mortality and morbidity. It is characterized by recurrent seizures due to abnormal, excessive, hypersynchronous discharges from CNS neurons. It may vary from a brief lapse of attention or muscle jerks to severe and prolonged convulsions[1]. Epilepsy affects people in all nations and of all races. Around 50 million people in the world have epilepsy. Nearly 90% of the people

with epilepsy are found in the developing regions[2]. The estimated proportion of the general population with active epilepsy [i.e. continuing seizures or the need for treatment] at a given time is between 4 to 10 per 1,000 people. However, some studies in developing countries suggest that the proportion is between 6 to 10 per 1,000[1]. Epilepsy responds to treatment about 70% of the time, yet about three fourths of affected people in developing countries do not get the treatment they need[1]. The disorder may be caused by brain disease or injury such as perinatal or other traumas, infections such as meningitis or encephalitis, vascular disease, degenerative disease, tumour, abuse of alcohol, some drugs or toxic substances; in developing countries many cases of epilepsy are related to preventable parasitic diseases e.g.

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neurocysticercosis, malaria, schistosomiasis. Epilepsy leads to multiple interacting medical, psychological, economic and social repercussions, all of which need to be considered. Information is scarce in the vast majority of countries, while the information that is available is not comparable across different countries or over time. Accurate and up-to-date information is required.

In this cohort of Epileptic subjects, we have studied the demographic and clinical profile and treatment compliance of the patients and categorized the type of disease after investigations. The understanding of clinical and demographic profile of epilepsy patients from different human populations is important to broaden the available knowledge and gives baseline information for cross country comparisons. The information will also help us to devise and improve the preventive measures for the disease and adopt better strategies for control of epilepsy.

## 2. Materials & Methods:

100 patients registered in epilepsy clinic attached to teaching hospital (King George Hospital) during the months of Nov and Dec 2010 were included in the study. The study included both old and new cases. Patients of all ages and both sexes were included. Pretested questionnaire was administered and information regarding demographic characteristics and clinical profile was obtained after taking consent from them. Individual case records were reviewed and findings of investigations were recorded which included CT, MRI and EEG.

Details regarding treatment and drug compliance were recorded from patients who were receiving treatment for the past 6 months.

## 3. Results

Out of a total of 100 patients, 56% were males and 44% were females. Median age was 19.5 years (males 19 yrs, females 22.5 yrs). Majority of cases (49%) were in the age group of 11-30 years. 45 epileptics had primary education, 29 had secondary education, while 19 were illiterates. Age at onset of seizures was less than 15 yrs in more than half (58%) of epileptic patients of whom 17% developed within 1 year of age. 10% of our study population gave family history of epilepsy among first degree relatives. Post-ictal confusion (84%), loss of consciousness (68%) and retrograde amnesia (36%) were reported by the patients following seizures. Duration of disease was more than 6 years in 39% patients. Almost 91% were non vegetarians. The most common seizure type was Generalized Tonic Clonic Seizures i.e 53%. The second most common type was Simple Partial Seizures in (24%). Partial complex seizures (PCS) in 14% of the patients. Absence Seizures in 2% and Myoclonic Seizures in 7% of the patients. Out of 100 epileptics, 58 subjects mentioned that their seizure attack was triggered by some risk factor. Mental exhaustion was the most common risk factor (36/58) for triggering seizure followed by lack of sleep (23/58), fever, high altitude, blinking lights and loud noise.

**Table: 1 - Age and gender wise distribution of study population**

Age in yrs	Males n(%)	Females n(%)	Total
1-10	12(21%)	8(18%)	20%
11-20	20(36%)	12(27%)	32%
21-30	12(21%)	14(33%)	26%
31-40	7(13%)	4(9%)	11%
41-50	4(7%)	5(11%)	9%
51-60	0	1(2%)	1%
>60	1(2%)	0	1%
Total	56(100%)	44(100%)	100%

**TABLE:2 – Gender wise distribution of study subjects according to type of epilepsy.**

Type of epilepsy	Males n	Females n	Total n
GTCS	24	29	53
SPS	17	7	24
CPS	8	6	14
Myoclonic	6	1	7
Absence seizures	1	1	2
Total	56	44	100

**Table:3 Distribution of study subjects based age at onset of seizures:**

Age at onset of seizures (in years)	n
a) <1	17
b) 1-14	41
c) 15-34	24
d) >34	18
Total	100

**Table:4 – Age at onset of seizures Versus major types of epilepsy:**

Age at onset of seizures	GTCS	SPS
<14 yrs'	24	18
>14 yrs	29	6
Total	53	24

Age at onset <14 yrs among SPS patients was 75% as compared to 45.3% in GTCS patients and this difference was found to be statistically significant ( $z = 2.65, p < 0.05$ ).

One of the most important ways of diagnosing epilepsy is through the use of brain scans. The most commonly used brain scans include CT [computed tomography], PET [positron emission tomography] and MRI [magnetic resonance imaging]. CT was abnormal in 30% cases with most common abnormality being

neuro-cysticercosis. The prevalence of neuro-cysticercosis was 22% in our study indicating that neuro-cysticercosis is a leading cause of seizures and epilepsy in the developing world and is an increasingly important health issue. Out of 28 patients who were advised Electroencephalography (EEG), normal EEG was seen among 13[46%] patients

**TABLE - 5. CT scan findings in epileptic patients**

CT scan findings	n
Normal	70
Inactive NCC [only calcifications]	22
Active NCC [cysts + calcifications]	0
Cerebral infarcts	2
Cerebral atrophy	1
TB granuloma	1
Hypoxic sequelae	2
Parietal fracture	1
Partial agenesis of corpus callosum	1
Total	100

#### 4. Conclusion

Morphological features deviating from the regular references showed that there is preponderance of large size rhomboid impression in males and medium sized rhomboid impression in females. Left and Right clavicles showed more commonly the appearance of flat and rough (Type 1) type of rhomboid impression. Large sized subclavian groove is more common in males because of prominent muscular and ligamentous attachment and small sized subclavian groove is more common in females. Thus morphological features can be used to some extent for differentiation of sex. However the accuracy of the result is multiplied many folds if these are coupled with the metrical methods.

**TABLE - 6. Distribution of study population according to response with medication**

Response to medication	n(%)
Seizures controlled	73(83%)
Seizures not controlled	15(17%)
Total	88(100%)

\*12 were new cases

Among 88 patients who were put on treatment, seizures were controlled with medication among 73 patients (83%). Non compliance for drug therapy was seen in 20 out of 88 patients (22%). On further analysis it was observed that literacy and type of seizures had no significant influence on non-adherence to drugs. 10 patients gave reasons that it was because of non availability of drugs

in the hospital and said that they could not afford to purchase. Rest felt that it was not necessary to continue drugs as their seizures were controlled.

#### 4. Discussion:

Epilepsy is an important health problem. Identification of demographic and clinical profile of epileptics in a hospital setting will lead to more opportunities to improve preventive measures and quality of life. The purpose of the study was to establish the clinical and demographic profile of patients with epilepsy in an epileptic clinic attached to teaching hospital. The mean age of these patients was 19.5 yrs with a preponderance of males 56% Vs 44% females. The results of the study compare favourably with Shaireen Usman et al [3] where in their study males were 58%. Similar findings were reported by Surender Kumar Pal et al. [5].

In our study majority of cases(49%) were in the age group 11-30 years. Nowshad Khan et al.[4] in their study in a tertiary care hospital observed that 67% of epileptics were in the age group 11-30 years.

In our study the age at onset of seizure was less than 15 years in 58% of cases whereas it is about 30% in a study conducted by Surender Kumar Pal et al.[5].

The most common type of seizure was Generalized tonic clonic seizure (53%), the findings being similar to Shaireen Usman et al. [3] study in whom 43% of the subjects were suffering from GTCS. Nowshad Khan et al. [4] in their study mentioned that 70% of the patients were suffering from generalized tonic-clonic seizures.

Neurocysticercosis is the most common parasitic infection of the brain and a leading cause of epilepsy in the developing world, especially Latin America, India, Africa, and China. The prevalence of neurocysticercosis was 22% in our study. Several large studies of patients with seizures have revealed that NCC is a major cause of epilepsy in India. Murthy et al [6] found that 10.4% patients had evidence of NCC. Singhvi JP et al [7], from the north-Indian city of Chandigarh, found NCC as the cause of seizures in 31% of 158 patients.

Treatment compliance: For individuals with epilepsy, adherence to medication is crucial in preventing or minimizing seizures and their cumulative impact on everyday life. Non-adherence to antiepileptic drugs (AEDs) can result in breakthrough seizures many months or years after a previous episode and can have serious repercussions on an individual's perceived quality of life.[8]. In our study drug non-compliance was observed in 22% patients. Nowshad Khan et.al. observed that twenty-eight (28%) patients were not taking any anti-epileptic drugs in their study.

#### 5. Conclusion:

The study demonstrates that there is shift in the age at onset of seizures towards younger age group in our area. Drug compliance was not seen among one fifth of patients. Hence awareness regarding necessity for continuous medication should be stressed.

Neurocysticercosis was reported high, may be due to non vegetarianism of study population. Strategies for prevention and control of cysticercosis are still needed in developing countries like India.

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