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Prescription Pattern Of Antiepileptic Drugs In Outpatient Departments Of A Tertiary Care Hospital.

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ABSTRACT

Epilepsy is one of the common neurological disorders. Selection of the appropriate drug is essential for the compliance and outcome of the treatment. To evaluate the prescription pattern of anti-epileptic drugs in our hospital. Ours was a prospective, observational study cconducted for a duration of 6 months after getting approval from Institutional ethics committee. The study involved collecting data from 500 patients diagnosed with epilepsy and undergoing treatment from outpatient departments. The WHO prescribing indicators were evaluated for each prescription. Descriptive statistics was used. A total of 500 patient prescription were analysed. Most of the patients were males (69.6%) and belonged to 13-24 (30%) age group. Most patients received monotherapy (70.4%). The most commonly prescribed drug is sodium valproate (40.8%) followed by phenytoin (31.2%) and carbamazepine (10.6%). The prescriptions followed the rational prescribing pattern. Males were affected more than females and most of them were in 13 to 24 age group. Treatment of epilepsy is usually by monotherapy. Sodium Valproate is the most commonly prescribed drug followed by Phenytoin.

Keywords: Prescription pattern, Anti-epileptic Drugs, Patients.

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INTRODUCTION

Epilepsy is a common chronic central nervous system disorder and affects 1–3% of population [1]. It affects both the genders and all age groups. In a systematic review, the lifetime prevalence of epilepsy was observed to be 7.6/1000 population, which was higher in low- and middle-income countries as compared to high income countries [2]. Recent study estimated the prevalence of epilepsy in Indian population to be 4.7/1000 population [3].

The two main types of epilepsy include: Focal which involves a particular part of the body, and generalized, which involves entire body [4]. The diagnosis is usually clinical based on the signs and symptoms. Electroencephalogram (EEG) can be used to substantiate the diagnosis and identify the abnormal brain activity. Neuroimaging (CT/MRI) is done to rule out organic lesions.

The mainstay of treatment of all types of epilepsy is pharmacotherapy. There are a diverse range of antiepileptic medications which are used to treat different types of epileptic syndromes. Usually, treatment is started with a single drug. Most commonly used drugs for monotherapy of different types of seizures are carbamazepine, valproate, phenytoin and lamotrigine. Many novel drugs such as topiramate, levetiracetam, zonisamide, oxcarbazepine, and lacosamide have also been approved for monotherapy in recent years [5]. Thus, due to availability of lots of antiepileptic medications and the treatment being long-term, it is worth to understand the prescribing pattern of such drugs. Selection of the right drug will ensure compliance and success of the treatment. Drug utilization study helps in the rational prescribing of medicines and minimizing the inappropriate use of medications as well as the associated adverse effects [6].

With this background, this study was performed with an aim to evaluate the prescription pattern of antiepileptic medications in our tertiary care hospital.

MATERIALS AND METHODS

Ours was a prospective, observational study carried out for a period of 6 months (from January 2024 to June 2024) at our tertiary care hospital after obtaining Institutional ethics committee approval. In this study, patients who were prescribed antiepileptic medications in various outpatient departments, such as medicine, pediatrics, and neurology were reviewed and the data relevant to the study was recorded in a pre-designed, pre-validated patient data sheet.

Inclusion Criteria:

- All Age groups.
- Gender: both male and female
- Outpatients on anti-epileptic drugs.
- Patients willing to give informed consent.

Exclusion Criteria

- Patients not willing to give informed consent.
- Pregnant and lactating females.
- Epileptic patients admitted in the ward.
- Patients with any other systemic illness.
- Patients on other drugs

Study Procedure:

Epileptic patients were explained about the study purpose in their local language. Written informed consent was obtained from those who are willing to participate in the study. The demographic details of the patients, clinical diagnosis and treatment details of the patients were recorded. Details of the drugs given such as dosage form, dose route, frequency and duration were noted. Based on the World Health Organization (WHO) prescribing indicators, the rationality of prescriptions was analyzed.

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Statistical Analysis

The data were entered and evaluated using Microsoft Office Excel. Descriptive statistics was used to represent the findings.

RESULTS

A total of 500 prescriptions were evaluated in the study. Majority (30%) belonged to 13-24 age group. The age distribution of patients is given in Table 1 and Figure 1.

Table 1: Age Distribution

Age Group	Number	Percentage
0-12 Yrs	124	24.8%
13-24yrs	150	30.0%
25-36 Yrs	106	21.2%
37-48yrs	44	8.8%
49-60 Yrs	52	10.4%
Above 60 Yrs	24	4.8%

Figure 1: Age Distribution

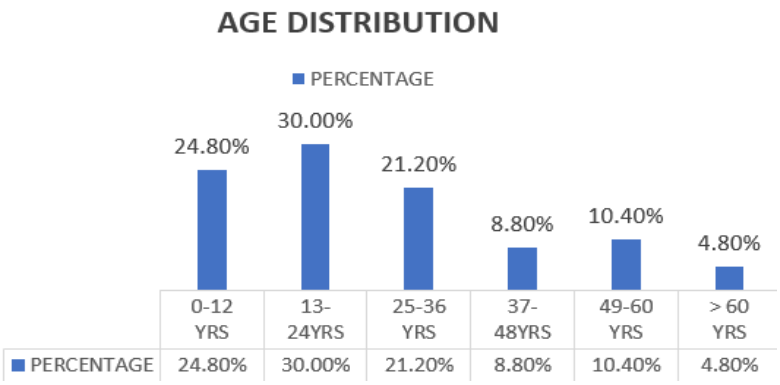


Table 2 and figure 2 shows gender distribution. There were more number of male patients (69.6%) as compared to female patients (30.4%).

Table 2: Gender Distribution

Gender	Number	Percentage
Male	348	69.6%
Female	152	30.4%
Total	500	100%

Figure 2: Gender Distribution

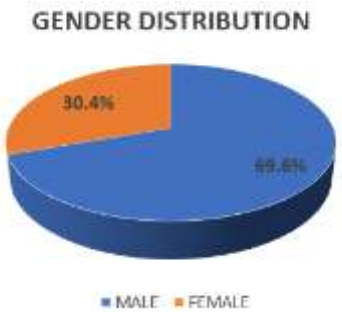


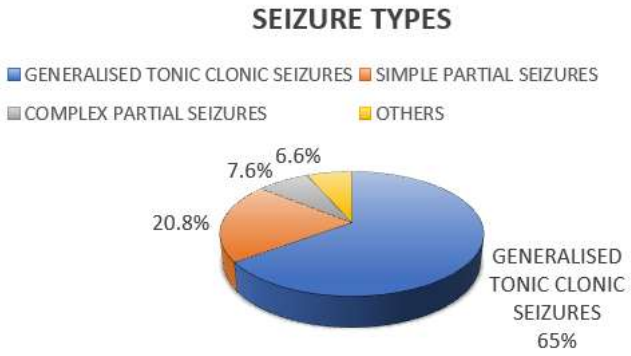
Table 3 and figure 3 gives the prevalence of different types of seizures among the epilepsy patients. Generalized tonic-clonic seizures was the most commonly reported seizures (65%), followed by simple

partial seizures (20.8%) and complex partial seizures (7.6%), other seizure types constituted remaining 6.6%

Table 3: Seizure Types

Seizure Type	Number	Percentage
Generalised Tonic Clonic Seizures	325	65%
Simple Partial Seizures	104	20.8%
Complex Partial Seizures	38	7.6%
Others	33	6.6%

Figure 3: Seizure Types



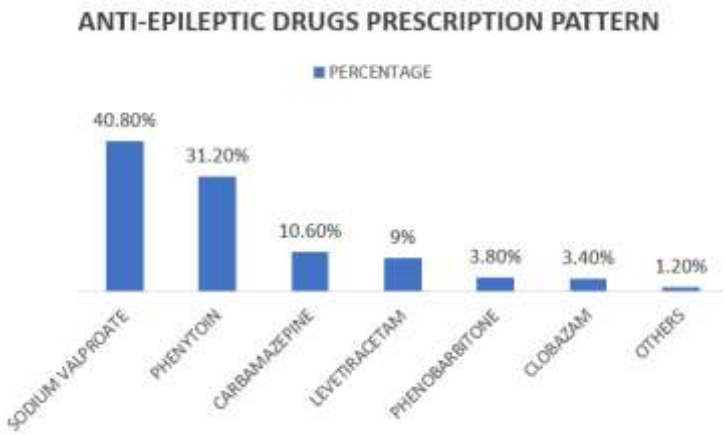
Most of the patients received monotherapy (70.4%) than combination therapy (29.6%).

The most commonly prescribed drug was sodium valproate (40.8%), followed by phenytoin (31.2%). Among the newer AED, Levetiracetam was most commonly prescribed (9%). Table 4 and figure 4 gives the pattern of antiepileptic prescription among the epileptic patients.

Table 4: Anti-Epileptic Drug Prescription Pattern

Drug	Number	Percentage
Sodium Valproate	204	40.8%
Phenytoin	156	31.2%
Carbamazepine	53	10.6%
Levetiracetam	45	9%
Phenobarbitone	19	3.8%
Clobazam	17	3.4%
Others	6	1.2%

Figure 4: Prescription Pattern



All of the drugs were prescribed by oral route and no use of FDC was given in any of the patients.

DISCUSSION

Epilepsy is a common neurological disorder which results in significant morbidity. As most of the cases of epilepsy are primary (idiopathic), the use of drugs for seizure control is essential to prevent convulsions in these patients. The conventional AED have been in use since long and there is lots of evidence on their usage. At the same time, newer drugs are being developed which promises to overcome the adverse effects of the conventional AEDs. Thus, the study of analyzing the antiepileptic drug use pattern among the epileptic patients help in understanding the prevalent drugs and evaluating the rationality of prescriptions.

Most of the patient belonged to the 13 to 24 years age group (30%). This is consistent with findings from other studies [7-9].

In this study, epilepsy was found to be more common in males(69.6%) as compared to females(30.4%). This was similar to the findings obtained in previous studies [7,10,11]. This could be due to the different gonadal hormones in males and females which are thought to have influence on the neurologic mechanisms of seizure.[12]

The most common seizure type observed was generalized tonic-clonic seizures in the epilepsy patients followed by simple partial seizures. This was consistent with many previous studies which found GTCS to be the most common pattern of epilepsy among the patients [7,9-11].

It was observed that monotherapy was more common in our setting as compared to multiple drug therapy. This was consistent with the findings published by and Sori and Gandigawad. et al [11] and Morge and Kulkarni et al [13].

In our study, sodium valproate was the most commonly prescribed drug followed by phenytoin and carbamazepine. This was similar to the findings reported by a study by Pal *et al*. in Cuttack which reported valproic acid as the most commonly prescribed AED followed by phenytoin and carbamazepine [14]. A similar study by Arulkumaran *et al*. in Coimbatore also reported valproate as the most commonly prescribed antiepileptic followed by carbamazepine, phenytoin and oxcarbazepine [15, 16].

Thus, conventional drugs were prescribed more frequently than the newer ones. In all the cases, newer AEDs were added as an adjuvant drug when the epilepsy was not controlled by conventional drug monotherapy/dual therapy or due to adverse effects. Levetiracetam was the most frequently used newer drug.

Prescription of drugs using generic names was common practice among the doctors in our hospital which is in accordance with national guidelines. The drugs were frequently prescribed from the NLEM which makes the availability of drugs easier for the patients. All of the drugs were prescribed by oral route. This is similar to the findings observed in the previous studies [9, 10]

There were a few limitations in the study. First, sample size is small. Second, only outpatients were included in the study which leaves out many of the inpatients admitted with epilepsy. Thus, similar studies with larger sample size and including Inpatients could be planned for evaluating each factor affecting the drug utilization pattern of the drugs.

CONCLUSION

Anti-epileptic drug prescription was rational and complete. Males were affected more than females and most of them were in 13 to 24 age group. Most of the patients were treated with monotherapy and the most commonly prescribed drug was sodium valproate. Conventional drugs were prescribed more frequently than the newer ones. The drugs were prescribed using generic names and the drugs were from the NLEM list. Our study will help in creating strategies to improve the quality of healthcare of epileptic patients and efficient management of the health-care system.

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