

**AN OBSERVATIONAL STUDY ON PRESCRIBING PATTERN OF ANTI EPILEPTIC DRUGS IN PEDIATRIC PATIENTS AT A TERTIARY CARE HOSPITAL**Eswari P. V. S. N.\*<sup>1</sup>, Pavan Kumar B.<sup>2</sup> and Lakshmi. P.<sup>3</sup><sup>1,2</sup>Pharm. D Intern Department of Pharmacy Practice, Sri Padmavathi School of Pharmacy, Tiruchanoor, Tirupati, Andhra Pradesh, India.<sup>2</sup>Assistant Professor Department of Pharmacy Practice, Sri Padmavathi School of Pharmacy, Tiruchanoor, Tirupati, Andhra Pradesh, India.

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**ABSTRACT**

A prescription is a written advice that mentions drugs and other instructions given to either pharmacist or chemist to dispense the drugs to patients for the proper treatment of disease. It provides information like an adequate dose of the drug to be given, its duration and the way it has to be taken. Seizure is a transient occurrence of signs and symptoms resulting from abnormal excessive or synchronous neuronal activity in brain. Children with seizure disorders require prolonged antiepileptic drug (AED) therapy for atleast two seizure-free years. Initial treatment approaches focus on drug therapy, either monotherapy or adjunctive therapy. **Results:** Among the study population male patients (53.84%) were found to be higher than that of females (46.15%). Conventional AEDs are commonly prescribed in our study than newer anti-epileptics, sodium valproate was frequently used as monotherapy followed by benzodiazepine. **Conclusion:** Our study concluded that male children were more prone to the seizures than female children. Regarding age wise distribution, the children between 1-4 yrs of age were admitted with the complaint of seizures. Non-compliance observed in patients is comparatively less than other studies this is because the patients receiving proper counseling about their medication.

**KEYWORDS:** Prescribing pattern, seizures, antiepileptic drugs.**INTRODUCTION**

A prescription is a written advice that mentions drugs and other instructions given to either pharmacist or chemist to dispense the drugs to patients for the proper treatment of disease. It provides information like an adequate dose of the drug to be given, its duration and the way it has to be taken.<sup>[1]</sup> Prescriptions may include orders to be performed by a patient, caretaker, nurse, pharmacist or other therapist. The term prescription is used to mean an order to take certain medication.<sup>[2]</sup> Seizure is a transient occurrence of signs and symptoms resulting from abnormal excessive or synchronous neuronal activity in brain.<sup>[4]</sup> Epilepsy is a disorder of the brain which is characterized by an enduring predisposition to generate seizures and by its neurobiological, cognitive, psychological, and social consequences.<sup>[3]</sup> Worldwide prevalence of active epilepsy ranges from 4 -5per1000 and in India it is 4.15-7.03per 1000 population.<sup>[5]</sup> Over 10 million children worldwide are believed to have epilepsy. Children with seizure disorders require prolonged antiepileptic drug (AED) therapy for atleast two seizure-free years. Initial treatment approaches focus on drug therapy, either

monotherapy or adjunctive therapy. Treating children with epilepsy differs from treating adults because cognitive effects of AEDs may be more serious than occasional seizures. Another concern is that biological half-life of AEDs in children varies significantly from that of the adults, because these medications are eliminated faster in children, so, doses generally have to be adjusted. This is especially true for drugs that are metabolized by the liver. Seizure medication are available in two types: narrow and broad spectrum AEDs. Some patients may need more than one medication to prevent the epileptic seizures more effectively.

**Narrow Spectrum Aeds**

Narrow spectrum AEDs are designed for specific types of seizures. These are most appropriate medications if seizures occur in one specific part of the brain on regular basis. For e.g. Carbamazepine, Diazepam, Ethosuximide, Phenobarbitone, Phenytonin.

**Broad Spectrum Aeds**

Patients have more than one type of seizure, a broad spectrum AED may be the best choice of treatment. These medications are designed to prevent seizures in more

than one part of the brain, as opposed to the focalized effects of narrow spectrum AEDs. For e.g., Lorazepam, Primidone, onisamide, Vlporic acid.<sup>[8]</sup> The current study is to evaluate the prescribing pattern of AEDs in pediatric inpatients. We conducted this study based on the inspiration from previous studies, because in our pediatric department seizures are one of the common disease and a study is based on AEDs are effective for analyze the therapeutic benefit in the patients.

## MATERIALS AND METHOD

- **Study population:** 65 in patients.
- **Study design:** prospective observational study.
- **Study duration:** 2months.
- **Study area:** svrrgh 1000 beded Hospital, Tirupati, Andhra Pradesh.

### Inclusion Criteria

All children from 1year of age upto 12 years of age, both male and female with epilepsy getting antiepileptic drugs.

### Exclusion Criteria

- Adults and children above 12 years of age.
- Patients with uncertain diagnosis
- Children having pathological liver disease and renal disorders.

## RESULTS

Out of 65 patients prescribed with aed's

### Gender wise distribution

Gender	No.of patients	Percentage (%)
Female	30	46.15%
Male	35	53.84%
Total	65	100%

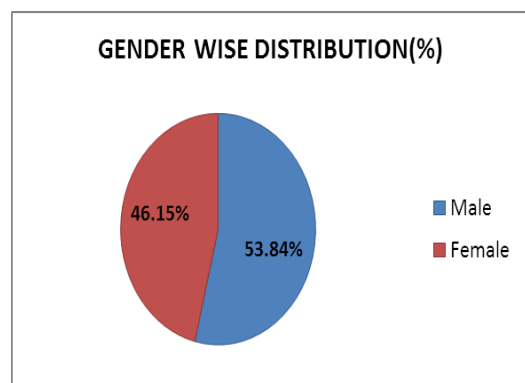


Fig.-1.

### Age Wise Distribution

Age	No. of patients
1-4 Years	25
5-9 Years	19
1-12 Months	15
10-12 Years	3

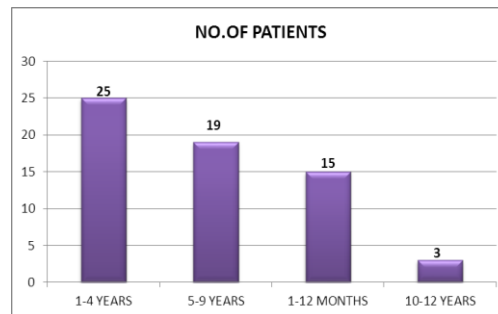


Fig.-2.

### Route of Administration

RoA	No. of patients	Percentage (%)
Oral	18	27.69%
IV	45	69.23%
Total	65	100

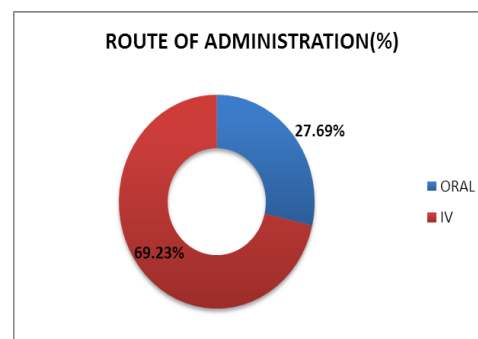


Fig.-3.

### Therapy

#### Table-1.

Therapy	No.of patients	Percentage (%)
Monotherapy	50	76.92%
Combination therapy	15	23.07%
Total	65	100

### Distribution of Antiepileptic Drugs Among Patients Monotherapy vs Combination Therapy

#### Table-2.

Therapy	Aeds prescribed	No. of patients
Monotherapy	Phenytoin	45
	Sodium valproate	1
	Clobazam	4
	Carbamazepine	1
	Levetacetam	1
Combination therapy	Phenytoin + phenobarbitone	3
	Phenytoin + sodium valproate	2
	Phenytoin + levetacetam	2
	Phenytoin + clobazam	1
	Phenytoin + sodium valproate+oxycarbazepine	1

**Compliance statuses of patients after aeds therapy**  
Table-3.

Patient compliance status	No. Of patients	Percentage
Seizure episodes controlled after aeds treatment	55	84.6%
Recurrent seizures	10	15.3%
Total	65	100%

**Comorbid condition**  
Table-4.

Comorbid condition	No.of patients
Meningitis	10
Viral fever	4
Pneumonia	2
Lrti	2
Cerebral palsy	1
Sickle syndrome	1

## DISCUSSION

Epilepsy usually begins in childhood, potentially impeding education, social relationships and development of a sense of worthlessness. Prompt, accurate diagnosis with appropriate social and medical management will optimize the situation. The main goal of anti-epileptic drugs is to reduce the recurrence of seizure and to minimize the side effects. The selection of an antiepileptic drug is primarily dictated by efficacy in attaining full control of seizures. The goal for every patient should be the use of only one drug with the fewest possible side effects.

Out of 65 patients prescribed with AEDs in epilepsy were enrolled into the study based on the selection criteria. Among the study population male patients (53.84%) were found to be higher than that of females (46.15%) (Fig.1). The age distribution of study shows that the maximum number of patients being in between 1-4 years, accounting 35% of the total. Less number of patients belongs to the age group of 5-9 years (15%) (Fig. 2). Most of the patients receiving mono therapy than dual therapy, out of 62 patients 50 were taking mono therapy and 15 were taking two drug combination (Table 1). Conventional AEDs are commonly

prescribed in our study than newer anti-epileptics, sodium valproate was frequently used as monotherapy followed by benzodiazepine, phenytoin and carbamazepine was most commonly prescribed. Preference of single drug approach was preferred mostly since poly-therapy exposes the patients to unnecessary hazards like drug allergy, drug interactions, noncompliance, and economic burden. Previous studies also have shown that mono-therapy is the goal for pharmacological treatment of epilepsy. Phenytoin with phenobarbitone was most commonly prescribed combination then followed by phenytoin with sodium

valproate in (Table:2). Sodium valproate was also more commonly used in two drug combination therapy and in polytherapy. as well. Due to its broad spectrum of activity, Sodium valproate was used to control most of the GTCS, partial seizure and absence seizure. Newer AED were not commonly prescribed. May be due to higher cost and non-availability in government supply. Parenteral route was more preferred in patients than oral route(Fig:3). According to our findings recurrence of seizure is less, majority of patients free from seizures after taking AEDs. Out of 65 patients 32 (84.6%) patients, their seizure episodes were controlled and 10(15.3%) patients had recurrence of seizures. hence these findings shows that more number of patients complied with the current treatment of epilepsy being followed at the hospital (Table 3).Out of 65 patients some children were admitted with comorbid conditions, 10 children with meningitis were admitted followed by viral fever (4children) (Table:4).

## CONCLUSION

Our study concluded that male children were more prone to the seizures than female children. Regarding age wise distribution, the children between 1-4 yrs of age were admitted with the complaint of seizures. Parenteral route of administration was mostly prescribed than the oral route. Phenytoin was highly prescribed drug to treat seizures then followed by sodium valproate. Phenytoin with phenobarbitone was mostly prescribed combination drug in our study. Newer AED levetiracetam also included in the treatment regimen. Non-compliance observed in patients is comparatively less than other studies this is because the patients receiving proper counseling about their medication. However, the main limitation was our study conducted with small study population and was designed to limited duration of time. Hence concluded that Prescription pattern in this study is relevant with current trend of prescription pattern.

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