

A Prospective Observational Study to Assess Prescription pattern of Seizures in a Tertiary Care Teaching Hospital

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ABSTRACT

Introduction: Epilepsy defined as chronic neuroleptical disorder which states repeated unprovoked seizures 1-4 repeated episodic uncontrolled clinical events related with abnormal electrical activity from nerves, are its peculiar features. Nearly 70 million peoples are affected from epilepsy worldwide around 10 million children suffers from epilepsy over globally.⁵ Children below 3 years have higher incidence of developing seizures and less incidence in children above age of 3.⁴ Prescribing pattern is the study which makes a part of medical audit and involves monitoring evaluating rational and cost effective therapy. Epilepsy is a continual neurological ailment affecting human beings throughout the globe. Over 10 million kids international are believed to have epilepsy. It has additionally been envisioned that 70% of all epilepsy syndromes begin among the age of 0 and 19 years and 30% of the kids with seizures may have their first episode earlier than the age of four years, and extra than 1/2 of of the kids with epilepsy may have multiple kind of seizure.³

Objective: The main objective was to assess the prescription pattern of seizures in Department of Paediatrics.

Method: A prospective observational study conducted during six months period in which 100 sample size were included of age groups from 0 to 12 of both genders prescribed with antiepileptics.

Result: A total number of 100 patients were included in this study for which majority of the patient (47%) belongs to the age group of 0-2 years followed 2-5 years (32%) and 5 - 12 years (21%). In the study on there were 51 female and 49 male. among the 100 prescription 59 were on monotherapy and 41 were on polytherapy given to the patient, out of 100 subjects 45 were with comorbid condition and 55 were without comorbidities. 54% of them were given with i.v. route and out of 100 subjects majority of patient

were prescribed with sodium valproate and then phenobarbital and then comes benzodiazepines.

Conclusion: The current study focuses on the use of both older and newer AEDs, but majority of the subjects were prescribed with older AEDs, such as sodium valproate. Our study concludes that female children's were more prone to seizures than male children, According to the age wise distribution 0-2 years children were mostly affected by seizures this may be due to fever, infections, low blood sodium, brain injury and genetic changes. Based on the patient compliance, better tolerability and seizure free episodes, sodium valproate and phenobarbital were frequently used in this study.

Keywords: Prescription pattern, antiepileptic agents, AEDs,

I. INTRODUCTION

Epilepsy defined as chronic neuroleptical disorder which states repeated unprovoked seizures 1-4 repeated episodic uncontrolled clinical events related with abnormal electrical activity from nerves are its peculiar features. Nearly 70 million peoples are affected from epilepsy worldwide around 10 million children suffers from epilepsy over globally.⁵

Prescription pattern nothing but drug utilization studies focusing on prescribing and drug usage. Presently a huge drugs are available for management of epilepsy based on the categorization and demographic details, most antiepileptic drugs are choosed, monotherapy. usually the first line management has less adverse effect, inexpensive increased tolerance, less drug interaction and medication adherence.¹ The main aim of this antiepileptic drugs is to manage seizures, reduce the adverse effect and to provide quality of life in pediatrics patients.²

Children below 3 years have higher incidence of developing seizures and less incidence in children above age of 3.⁴

Prescribing pattern is the study which makes a part of medical audit involves monitoring evaluating rational and cost effective therapy.

In 1997 WHO published reports on selection of essential drugs in order to improve rational drug use. Appropriate drug utilization study is an important tool to assess whether drugs are properly used in term of safety effectiveness benefits and economic aspects at all levels in the chain of drugs usage.

Drug utilization importance as been increasing in close association with pharmacovigilance, pharmaco-economic, public health and pharmacogenetics.⁸

Monotherapy is advantageous and poly therapy is prescribed when the first AEDs does not work in epileptic patients. Conventional drugs includes valproic acid, phenytoin, carbamazepine, phenobarbital and primidone. Newer drugs include lamotrigine, topiramate, levetiracetam, oxcarbazepine and Gabapentin.⁷

Approximately one third of epileptic patients were not responding to the single drug and it was necessary to use combination therapy to control seizures.¹¹

Children who are having seizure disorder need prolonged anti epileptic therapy for atleast two years of seizure free episodes. The last goal of management of epilepsy is to select the therapeutic option which provides the finest Chance to improve quality of life of patients.¹³

There are two types of AEDs which include narrow spectrum AEDs such as carbamazepine, diazepam, ethosuximide, phenobarbitone and phenytoin. Broad spectrum AEDs include lorazepam, primidone, onisamide, valproic acid.⁹

Epilepsy is a continual neurological ailment affecting human beings throughout the globe. Over 10 million kids international are believed to have epilepsy. It has additionally been envisioned that 70% of all epilepsy syndromes begin among the age of 0 and 19 years and 30% of the kids with seizures may have their first episode earlier than the age of four years and extra than 1/2 of the kids with epilepsy may have multiple kind of seizure.³

INTERNATIONAL CLASSIFICATION OF EPILEPTIC SEIZURES.

- Partial (Focal, Local) Seizures
- Simple Partial Seizures (SPS)
- Complex Partial Seizures (CPS)
- Secondarily Generalized Seizures
- Generalized Seizures

- Tonic - Clonic (Grand Mal) Seizures
- Absence (Petit Mal) Seizures
- Myoclonic Seizures A
- Tonic and Atonic Seizures
- Clonic Seizures
- Infantile Spasms (West Syndrome)
- Status Epilepticus⁶

Every year, 2.4 million people are identified with epilepsy. Earlier there were limited tablets to choose out from but presently many more antiepileptic tablets had been introduced to the list. The affected man or woman is at danger for numerous drug interactions throughout. It can be very critical to study the drug prescription pattern in epileptic patients.¹⁵

Antiepileptic medicines for the prophylactic remedy of seizures in Dravet syndrome (DS) are most effective partially effective, and sodium channel-blocking off anticonvulsants such as carbamazepine and lamotrigine are contraindicated and have poor outcomes on cognitive. There had been no medications in particular accredited for Dravet syndrome (DS) till the creation of stiripentol as an orphan drug for therapy-resistant Dravet syndrome (DS), which has a marketing authorization in Europe to be used in mixture with sodium valproate and clobazam.¹⁶

II. MATERIALS AND METHODS

STUDY SITE: Vijayanagara Institute of Medical Sciences, Ballari, Karnataka.

DURATION OF STUDY: Six months.

STUDY DESIGN: Prospective Observational Study

PROPOSED SAMPLE SIZE: 100 Patients

STUDY SUBJECTS: The inpatients and outpatients of age 0-12, both male and female who were prescribed with antiepileptics.

STUDY CRITERIA:

Inclusion Criteria:

- Paediatric population (0-12 years).
- Both inpatients & Outpatients.
- Both male and female.
- Prescription with at least one potentially inappropriate drug

Exclusion Criteria:

- Chronic, ICU diseased patients
- Patient without informed consent

MATERIALS USED:

- Paediatric patients

- Inform consent (patients and parents)
- Case sheet
- Patient Data Collection Form
- Informed Consent Form

METHOD OF DATA COLLECTION:

The data was collected from the case files of the inpatients and outpatients who were prescribed with Antiepileptics.

III. RESULTS

A prospective observational study was conducted for 6 months among the inpatients and outpatients randomly after obtaining ethical clearance by selecting 100 subjects in paediatric of Vijayanagara Institute of Medical Sciences, Ballari, Karnataka. A total number of 100 patients have participated during the study period. Out of 100 subjects, majority of patients belongs to age group of 0-2 years followed by 2-5 years, 5-12 years.

Table 01: Distribution of patients according to age

AGE	TOTAL NUMBER (N=100)	PERCENTAGE
0-2	47	47%
2-5	32	32%
5-12	21	21%

Figure 01: Distribution of patients according to age

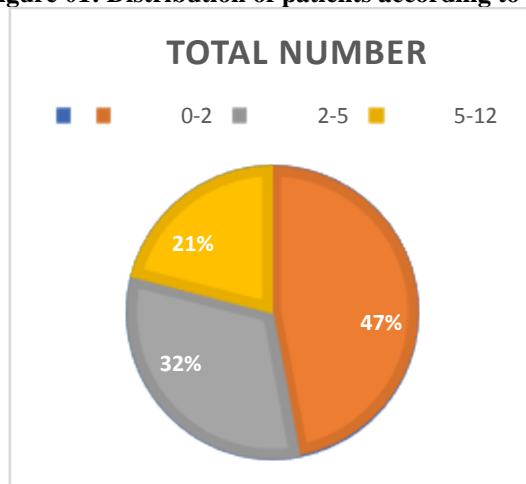


Table 02: Distribution of patients according to gender

A total of 100 subjects were covered during the study period. Out of 100 subjects 49 were male and 51 were female.

GENDER	TOTAL NUMBER (n=100)	PERCENTAGE
Male	49	49%
Female	51	51%

Figure 02: Distribution of patients according to age

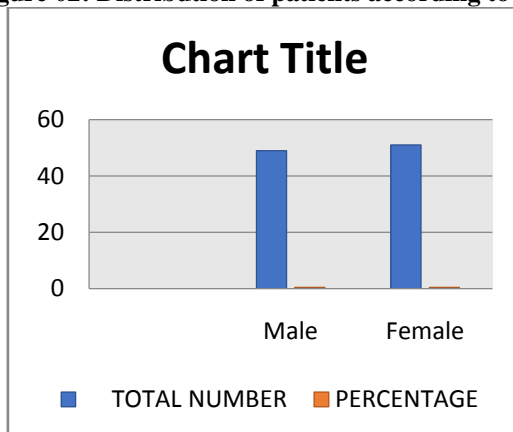


Table 03: Distribution of subjects based on therapy

Out of 100 prescription 41 subjects were under polytherapy, 59 subjects were under monotherapy

THERAPY	TOTAL NUMBER (n=100)	PERCENTAGE
Polytherapy	41	41%
Monotherapy	59	59%

Figure 03: Distribution of patients based on therapy

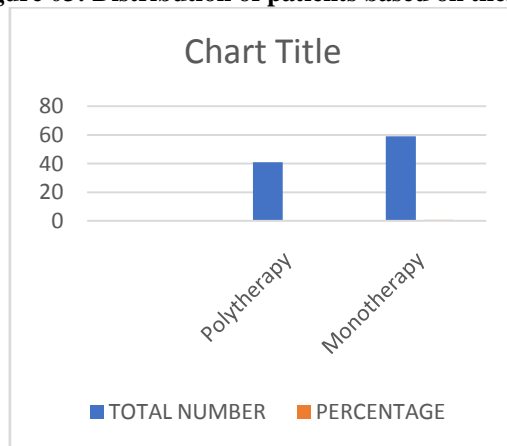


Table 04: Distribution of subjects according to co-morbidities

Out of 100 subjects 45 subjects were with comorbid disease and 55 were without comorbid disease

DISEASE CONDITION	TOTAL NUMBER (n=100)	PERCENTAGE
Comorbid	45	45%
Noncomorbid	55	55%

Figure 04: Distribution of patients with or without co-morbidities

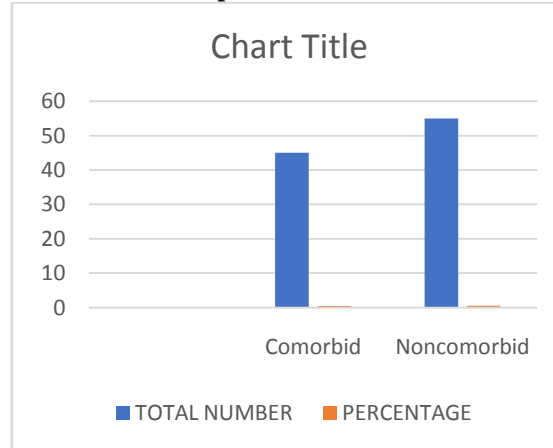


Table 05: Distribution of subjects based on administration

Out of 100 subjects 46 were prescribed with I.V. administration, 54 were prescribed.

ROUTE OF ADMINISTRATION	TOTAL NUMBER (n=100)	PERCENTAGE
IV	46	46%
Oral	54	54%

Figure 05: Distribution of subjects based on administration

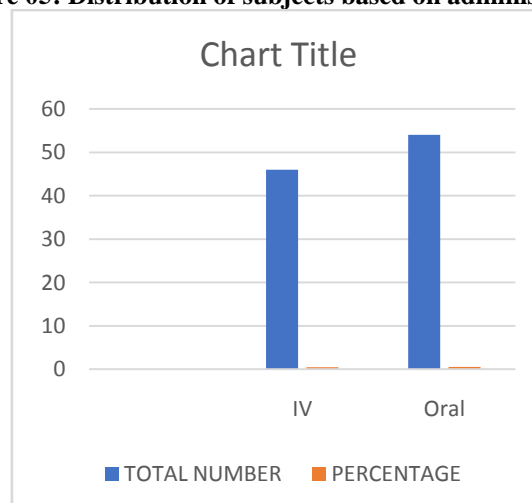
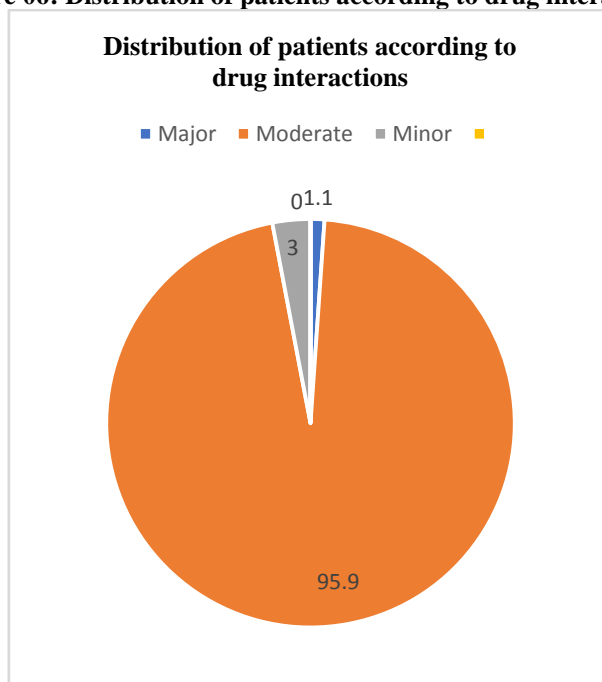


Table 06: Distribution of patients according to drug interaction

TYPES	INTERACTION FOUND (n=198)	PERCENTAGE
Major	2	1.1%
Moderate	190	95.9%
Minor	6	3.0%

Figure 06: Distribution of patients according to drug interactions



IV. DISCUSSION

According to current study majority of pediatric patients were prescribed with sodium valproate. AED and second to that most frequently used drug is phenobarbitone due to easy availability, less expensive and easily tolerable.

A total number of 100 patients were included in this study for which majority of the patient (47%) belongs to the age group of 0-2 years followed by 2-5 years(32%) and 5-12 years(21%) has study conducted by Ramya et al.

In the study there were 51 female and 49 male; it is evident that female patients were more compared to males. A study conducted by Rajesh Kumar Suman et.

Among 100 prescription 59 were monotherapy and 41 were found to be polytherapy. A study conducted by eshwari p.v s.n et all.

In this study out of 100 subjects, 45 were with comorbid conditions and 55 were without

comorbidities . A study conducted by junny Sebastian et al.

Out of 100 subjects, 54% of them were given with iv route. A study conducted by jithya raphel, nimmy n John et all Out of 100 subjects majority of patients were prescribed with sodium volproate followed by phenobarbital and then comes benzodiazepines. A study conducted by Princy Christian et all.

V. CONCLUSION

The current study focuses on the use of both older and newer AEDs, but majority of the subjects were prescribed with older AEDs, such as sodium valproate. Our study concludes that female children's were more prone seizures then male children. According to the age wise distribution 0-2 years children were mostly affected by seizures this may be due to fever, infections, low blood sodium, brain injury and genetic changes. Based on the patient compliance, better tolerability, and seizure

free episodes, sodium valproate and phenobarbital were frequently used in this study. As there is more chances of developing adverse effects, resistance, hence more subjects were prescribed with monotherapy than combination therapy

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