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Original Research Article

Prescribing pattern of antiepileptic drugs in tertiary care teaching hospital, Nagapattinam

Lakshmi Sabapathi Sundaram[1,*], **Hathija Asika Nasurdeen**[1], **Jayalakshmi Subramaniyam**[1], **Krishna Sumathi Murugaiyan**[1]

[1] *Dept. of Pharmacy Practice, EGS Pillay College of Pharmacy, Nagapattinam, Tamil Nadu, India*

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ABSTRACT

Background: Epilepsy is a chronic neurological disorder of brain cells. The older and newer antiepileptics are the mainstay of the treatment of epilepsy. The present study is to determine the prescription pattern of antiepileptic drugs.

Materials and Methods: An observational retrospective study, conducted at government district headquarters medical college, Nagapattinam. Data was collected for about 6 months from April 2021-September 2021.100 patients were included in this study based on inclusion and exclusion criteria.

Result: In 100 patients 68% accounted male and 32% accounted female. The most common type of seizure has been identified as generalized seizure (54%) followed by secondary seizure (23%) and other types. Phenytoin accounted for 69 %. Among the different classifications of antiepileptic drugs benzodiazepines (50.6%) was the commonly prescribed classification of AED. Older agents accounted almost 98% and only 2% of drugs from newer agents. TheMonotherapy has been noted only 19%.

Conclusion: In this study we identified, combinational therapy has been mostly prescribed. Benzodiazepines were commonly prescribed class of agent. Phenytoin was mostly prescribed drug. Most patients have received older anti-epileptics agents.

1. Introduction

Epilepsy is a condition which is characterized by repeated episodes of seizures due to a disorder of the brain cells. A seizure is a result of increased nerve-cell discharges in the brain.[1] It is developed with sudden abnormal function of the body, loss of consciousness, too much of muscular activity, and also loss of or abnormal sensation and abnormal bowel and bladder function.[1,2]

Globally, it is calculated that nearly 50 million people suffered by epilepsy. In India,10 million people suffered with the epilepsy. It is approximate that there are more than 10 million people having epilepsy in India and its prevalence is about 1% in the total population. The prevalence is greater in the rural area (1.9%) compared to urban population (0.6%).[3] The prevalence of epilepsy across the world is approximately 5-9 per 1,000 population.[4]

This disease burden in India can probably due to large population, lower income and educational status, sociocultural prejudices, inadequate resources, infectious disease and non-communicable diseases, and the lower importance given for public health aspects of epilepsy.[4] Epilepsy is significantly higher incidence in male than in female.[5]

Some of the causes of epilepsy are family history, Brain damage or injury before, during or after child birth. Injury due to infection in mother, poor nutrients and decreased oxygen. Baby born with brain defect also suffered by

* *Corresponding author*.
E-mail address: lakshmisabapathi1@gmail.com (L. S. Sundaram).

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epilepsy, Head or brain trauma is triggering the seizure. Brain condition can trigger epilepsy in people with the age of 35. Brain conditions includes stroke, brain surgery, tumor, hardening of brain arteries, Alzheimer disease, tuberculosis sclerosis. Some bacterial and viral infection can cause epilepsy. Infection like AIDS, viral encephalitis, meningitis cause seizure. Developmental disorder like down syndrome, autism, neurofibromatosis. Episodes of seizure can occur when the doses are missing, alcohol ingestion, some drugs like cocaine, insomnia, other medication that interfere with antiepileptic drugs, stress, emotional upset, During menstrual cycle. Fever is the most common cause in pediatric patients.[2–6]

The goal of treatment is to control of seizure with appropriate anti-epileptic drug. Antiepileptic drug prescribed with less significant side effect. Treatment of epilepsy with antiepileptic drug has to be started after confirming type of epilepsy.[7]

The aim of this study was to evaluate the use of various antiepileptic drugs in seizure patients.Figure 1

2. Materials and Methods

It was an observational retrospective study, conducted at government headquarters hospital, NagapattinamIndia, from April 2021 to September 2021. In this study, total 100 prescriptions have been assessed. Data regarding the demographical detail of the patient, types of epilepsy, the antiepileptic drugs prescribed were analyzed.

3. Study Recruitment Procedure

3.1. Inclusion criteria

1. Both the gender with all age group.
2. Patient with different type of seizure caused by Generalised tonic clonic seizure, absence seizure, focal seizure, alcohol withdrawal seizure, drug withdrawal seizure and febrile seizure.

3.2. Exclusion criteria

1. Patient with improper information.
2. Patient who shifted to other hospital were excluded.
3. Pregnant and breast-feeding women.

4. Result

4.1. Distribution of patient wih epilepsy according to gender wise distribution

A total of 100 patients were prescribing with antiepileptic drugs during the study. Among 100 patients 68 have identified as male and 32 identified as female.

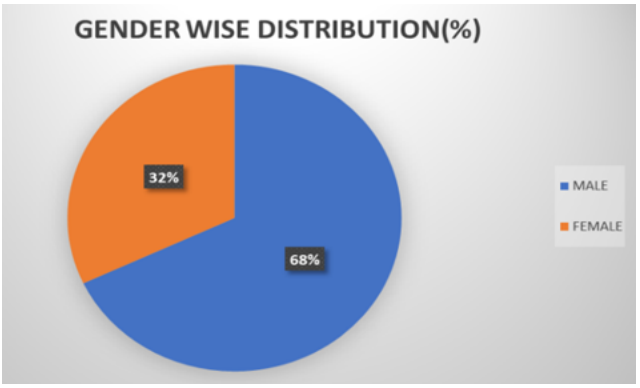

Fig. 1: Gender wise distribution

4.2. Age group wise distribution

Among 100 patient 38 patient were aged between 0-14, 39 patients were aged between 15-47, 15 patients were aged between 48-63, 8 patients were aged between above 65 years.

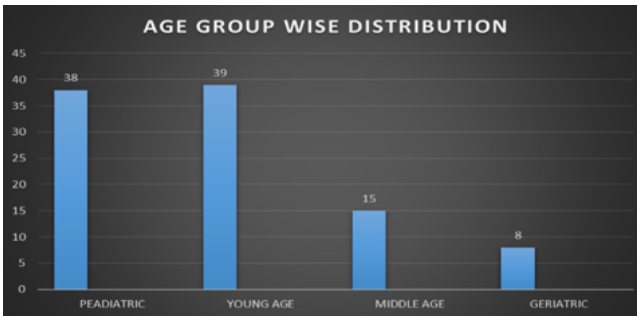

Fig. 2: Age group wise distribution

Table 1: Age and gender wise distribution

Age	Male	Female	Total
0-10	17	16	33
11-20	11	6	17
21-30	10	2	12
31-40	6	3	9
>40	24	5	29
Total	68	32	100

4.3. Distribution of types of seizure

Among 100 patient 54% were diagnosed with generalized seizure disorder. 21% were secondary seizure. 12% were other type of seizure.

4.4. Classification of antiepileptic drugs

In our study most commonly used classification of AED'S were benzodiazepines (50.6%), hydantoins (28%), aliphatic

Table 2: Distribution of patient according to types of seizure

S. No	Types of seizure	No. of. Patient affected	Percentage (%)
1.	Generalized seizure		Generalized seizure
	Seizure disorder	45	
	Generalized tonic clonic seizure	8	54%
	Absence seizure	1	
2.	Secondary seizure:		
	Febrile seizure	23	23%
3.	Focal seizure	2	2%
4.	New and late onset seizure	10	10%
5.	Others	12	12%
	Alcohol withdrawal seizure		
	Drug withdrawal seizure		
	Unprovoked seizure		
	Post stroke seizure		

carboxylic acid (14.6%), iminostilbenes (3.65%), newer agents (2.03%) showed in the Tables 3 and 4

Table 3: Distribution of antiepileptic drugs

Classification of AED'S	No. of. prescription	Percentage
Hydantoin	69	28%
Iminostilbenes	9	3.65%
Aliphatic carboxylic acid	36	14.6%
Benzodiazepine	125	50.6%
Barbiturates	2	0.81%
Newer agent	5	2.03%

Table 4: Distribution of benzodiazepines

Benzodiazepines	No of time prescribed	Percentage (%)
Clonazepam	3	1.21%
Diazepam	45	18.2%
Lorazepam	31	12.6%
Clobazam	30	12.1%
Midazolam	15	6.09%
Nitrazepam	1	0.40%

4.5. Prescribing pattern of anti-epileptic drugs

Among 100 prescription 19% has been identified as monotherapy and 81% has been identified as combinational therapy.

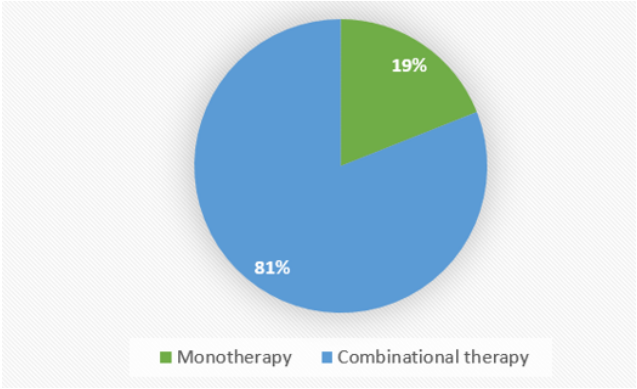

Fig. 3: Drug regimen

Table 5: Distribution of drug regimen

Therapy	No. of Patients	Percentage
Monotherapy	19	19%
Combinational Therapy:		
Two-Drug Therapy	35	
Three-Drug Therapy	32	81%
Four or More Drug Therapy	14	
Total	100	100%

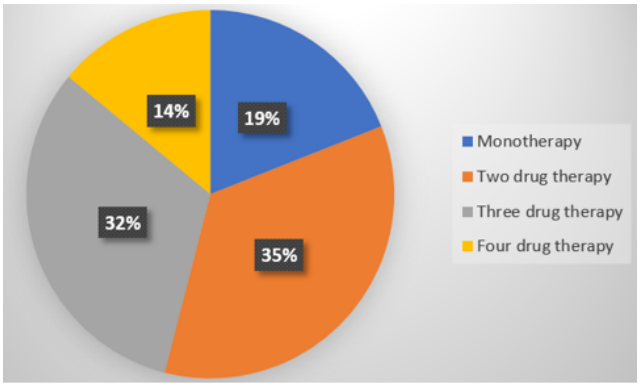

Fig. 4: Distribution of drug regimen

4.6. Distribution of older and newer agent

Among 100, 98% were prescribed with older antiepileptic drug and 2% were prescribed with newer agent.

5. Discussion

Prescription pattern defines the extent and profile of drug use, trends, quality of drugs, and compliance with standard treatment guidelines. It helps to provide appropriate use of medication.[8] The primary aim of drug. Found to be rationale.

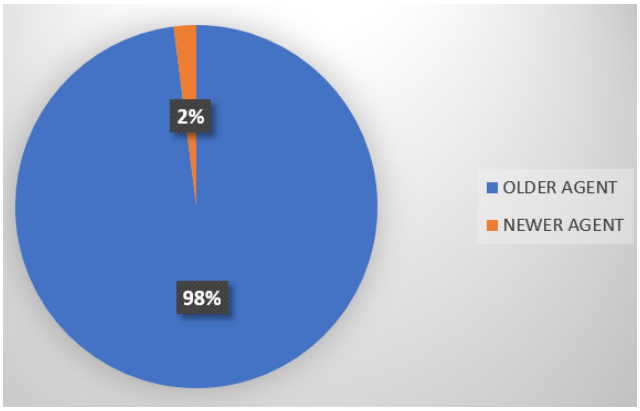

Fig. 5: Percentage distribution of older and newer aed

Epilepsy defined by 'WHO' as Epilepsy is a chronic non-communicable disease of the brain that affects around 50 million people worldwide. It has been characterized by recurrent seizures, which are brief episodes of involuntary movement that may involve a part of the body (partial) or the entire body (generalized) and therefore it is accompanied by loss of consciousness and control of bowel or bladder function.[2]

The main goal of the treatment is to reduce the frequency of seizure with minimal side effects produced by AED'S. Most of the antiepileptic drugs are available in the market, but due to their toxic effect and drug-drug interaction, that are withdrawn from the market. Optimal combination of drug should prevent the further episode and provide therapeutic action according to the patient needs. Among the study population male patients (68%) found to be higher than female patient (32%). Male predominance has Shilpaal. shownnce.[8] The most common type of seizure was generalized seizure (54%) followed by secondary seizure (23%) and the least common was absence seizure (1%). vyas common type of seizure.[9] monotherapy. similar result was vyas.[9] hydantoinsim inostilbene(3.65%), newer agents (2.03%). Juhi singh the most commonly used classification of antiepileptic drug benzodiazepines classes.[10] therapy in our study. As juhi singh the same.[10] Magarmentioned.[11] Newer Nagapattinam government hospital.

6. Conclusion

In this study we identified, combination therapy has been mostly prescribed. Benzodiazepines, commonly prescribed class of agent. Phenytoin, mostly prescribed drug. Most patients have received older anti-epileptics agents.

7. Source of Funding

None.

8. Conflict of Interest

None.

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Author biography

Lakshmi Sabapathi Sundaram, Associate Professor https://orcid.org/0000-0002-5745-3696

Hathija Asika Nasurdeen, Internship https://orcid.org/0000-0002-7870-5452

Jayalakshmi Subramaniyam, Internship https://orcid.org/0000-0002-5691-1810

Krishna Sumathi Murugaiyan, Internship https://orcid.org/0000-0003-3135-0226

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