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A STATISTICAL ASSESSMENT OF DRUG PRESCRIPTION PATTERN FOR EPILEPSY MANAGEMENT

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ABSTRACT

Epilepsy is defined as the repeated occurrence of sudden, excessive and/or synchronous discharges in cerebral cortical neurons resulting in disruption of consciousness, disturbance of sensation, movements, impairment of mental function, or some combination of these signs. Because of their sudden nature, seizures are called ictal events, from the Latin ictus meaning 'to strike'. The terms epilepsy, seizure and convulsion are not synonymous. A seizure always is symptom of abnormal function in the central nervous system (CNS) rather than a disease in itself. A seizure discharge may be initiated in an entirely normal cerebral cortex by a variety of acute insults, such as withdrawal from alcohol, low blood sodium, or certain toxins. Seizures are to be distinguished from epilepsy, which is a chronic condition in which seizures occur repeatedly due to an underlying brain abnormality which persists between seizures. A convulsion is a forceful involuntary contraction of skeletal muscles. A convulsion is a physical manifestation of a seizure, but the term is inappropriate as a synonym for epilepsy when epilepsy may consist only of a temporary alteration of consciousness or sensation. Epilepsy does not significantly alter life expectancy, but quality of life may be seriously compromised when seizures are not satisfactorily managed. This work was aimed to understand awareness of epilepsy in pharmacist. Thus study was performed to check awareness about the drugs used for patients are suffering from epilepsy. This work was carried out for finding the way of diagnosis and treatment of epilepsy with the help of that survey we can find out prescription pattern and the most commonly used drug for treatment of Epilepsy.

KEYWORDS: Epilepsy, Anti-epileptics, Prescription Pattern.

1. INTRODUCTION OF EPILEPSY

Epilepsy is a chronic disorder of CNS. Epilepsy is a group of disorders of CNS characterized by sudden episodes (seizures) of disturbance of consciousness and with or without characteristics body movements (convulsions).

1.1 Types of Epilepsy

Epilepsies have been classified variously major types are described below.

1. **Generalised seizures**

1. Generalised tonic-clonic seizures (GTCS, major epilepsy, grand mal)
2. Absence seizures (minor epilepsy, petit mal)
3. Atonic seizures (Akinetic epilepsy)
4. Myoclonic seizures
5. Infantile spasms (Hypsarrhythmia)

2. Partial seizures

1. Simple partial seizures (SPS, cortical focal epilepsy)
2. Complex partial seizures (CPS, temporal lobe epilepsy, psychomotor)

1.2 Causes of Epilepsy

Genetic influence, Head trauma, Infectious diseases, Head injuries, Stroke

1.3 Classification of Antiepileptic Drugs

- Barbiturate: Phenobarbitone.
- Deoxybarbiturates: Primidone.
- Hydantoin: Phenytoin, Fosphenytoin.
- Iminostilbene: Carbamazepine, Oxcarbazepine.
- Succinimide: Ethosuximide.
- Aliphatic carboxylic acid: Valproic acid (sodium valproate), Divalproex.
- Benzodiazepines: Clonazepam, Diazepam, Lorazepam, Clobazam.
- Phenyltriazine: Lamotrigine.
- Cyclic GABA analogue: Gabapentin.
- Newer drugs: Vigabatrin, Topiramate, Tiagabine, Zonisamide, Levetiracetam.

1.4 Tests for Diagnosis

Electroencephalography (EEG),Magnetic resonance imaging (MRI),C.T.Scan.

2. CASE STUDY

2.1 Plan of Work

Collection of information about epilepsy- causes & treatments. Gathering useful and relevant information that is essential for careful consideration to the design of questionnaire. Prepare questionnaire for doctors, pharmacists and patients. Collection of answers to the questionnaire by personal visit to doctors, pharmacists and patients.

2.2 Questionnaire method was followed

A questionnaire is a research instrument consisting of a series of questions and other prompts for the purpose of gathering information from respondents. Questionnaires have advantages over some other types of surveys in that they are cheap, do not require as much effort from the questioner as verbal or telephone surveys, and often have standardized answers that make it simple to compile data.

2.3 Basic rules for questionnaire item construction

Use statements which are interpreted in the same way by members of different subpopulations of the population of interest. Use statements where persons that have different opinions or traits will give different answers. Think of having an "open" answer category after a list of possible answers. Use only one aspect of the construct you are interested in per item. Use positive statements and avoid negatives or double negatives. Do not make assumptions about the respondent. Use clear and comprehensible wording, easily understandable for all educational levels. Use correct spelling, grammar and punctuation. Avoid items that contain more than one question per item (e.g. Do you like strawberries and potatoes?). Question should not be biased or even leading the participant towards an answer.

3. RESULT AND DISCUSSION

3.1 Questions

For Physician

Q.1.What are the major causes of Epilepsy disease according to you? (See Table 1, Fig.1 and Result 1).

Q.2.What are the possible treatments available for treating Epilepsy? (See Table 2, Fig.2 and Result 2).

Q.3.Which types of Epileptic attacks are seen in more patients? (See Table 3, Fig.3 and Result 3).

Q.4.How many patients of Epilepsy visit your clinic or hospital per Week/Month? (See Table 4 and Result 4).

Q.5. Which drug do you prefer for the treatment of Epilepsy? (See Table 5, Fig.4 and Result 5).

Q.6.Do you prefer Generic/Branded drugs? (See Table 6, Fig.5 and Result 6).

Q.7. Do you prefer single drug or drug combination for treating Epilepsy? (See Table 7, Fig.6 and Result 7).

Q.8.What are the side effects of treatment? (See Table 8, Fig.7 and Result 8).

For Pharmacist

Q.1.Name of the Drugs /Medicines /Brands available for treating Epilepsy? (See Table 9, Fig.8and Result 9).

Q.2. Name of the best selling Medicine/ Brand for treating of Epilepsy? (See Table 10, Fig.9 and Result 10).

Q.3.For treating of Epilepsy the doctors prefers Generic/Branded Drug? (See Table 11, Fig.10 and Result 11).

Q.4.Do you give counseling to the patients while dispensing Antiepileptic drugs? (See Result 12).

Q.5.Do the patients buy entire quantity of drugs prescribed at one time? If not buy which reasons? (See Table 12 and Result 13).

Q.6.Is the sale of drugs for treating Epilepsy is increase day by day or stays constant? (See Table 13, Fig.11 and Result 14).

Q.7.Do you think prescription are necessary for treatment of Epilepsy? (See Result 15).

For Patient

Q.1.Since when you are suffering from Epilepsy? (See Table 14, Fig.12 and Result 16).

Q.2.What symptoms were you having before the diagnosis of Epilepsy? (See Table 15, Fig.13 and Result 17).

Q.3.Which Doctor do you prefer for your treatment of Epilepsy? (See Table 16, Fig.14 and Result 18).

Q.4.What medicines are you taking for your treatment? (See Table 17, Fig.15 and Result 19).

Q.5.Since when you are taking the treatment on Epilepsy? (See Table 18, Fig.16 and Result 20).

Q.6.Do you take medicines regularly? (See Result 21).

Q.7.Have you seen any improvement after starting your treatment? (See Result 22).

Q.8.Do you have any other disease other than Epilepsy? (See Result 23).

Q.9. Have you any side effects after starting your treatment? (See Table 19, Fig.17 and Result 24).

Q.10.Along with medicine what other care do you take during the treatment? (See Table 20, Fig.18 and Result 25).

3.2 Observation Table

Table 1:

Sr.no.	Causes	No. of Physician (%) n=15
1.	Idiopathic(unknown)	46
2.	Head injury	20
3.	Genetic	13
4.	Brain Tumor(SOL)	7
5.	Stress	7
6.	Others(Strokes, Hypoglycemia, Hyperglycemia)	7

Table 2

Sr. no.	Possible Treatment	No. of Physician (%) n=15
1.	Drug treatment	73
2.	I.V. Therapy	13
3.	Counseling	7
4.	Others	7

Table 3

Sr. no.	Types of epilepsy	No. of Physician (%) n=15
1.	Generalized seizures (Type 1)	73
2.	Partial seizures (Type 2)	7
3.	No reply	20

Table 4

Sr. no.	No. of Patients Visit per month	No. of Physician (%) n=15
1.	0-5	53.33
2.	5-10	40
3.	10-50	6.66

Table 5

Sr. no.	Classification of drugs	No. of Physician (%) n=15
1.	Eptoin	26.66
2.	Tagrital	6.66
3.	Valparin	33.33
4.	Levetracetam	26.66
5.	No reply	6.66

Table 6

Sr. no.	Types of Drugs	No. of Physician (%) n=15
1.	Generic	7
2.	Branded	73
3.	Generic and Branded	20

Table 7

Sr. no.	Answer	No. of Physician (%) n=15
1.	Single	66.66
2.	Combination	13.33
3.	Both	13.33
4.	No reply	6.66

Table 8

Sr. no.	Effects	No. of Physician (%) n=15
1.	Ataxia	27
2.	Nausea	6
3.	Vomiting	7
4.	Headache	13
5.	Weight loss	13
6.	Dizziness	7
7.	No reply	27

Table 9

Sr. no.	Name of Drugs/Brands	No. of Pharmacist (%) n=30
1.	Eptoin	66.66
2.	Valparin	6.66
3.	Gardinal	3.33
4.	Levera	3.33
5.	Tagrital	3.33
6.	Others	16.66

Table 10

Sr. no.	Name of Drugs/Brands	No. of Pharmacist (%) n=30
1.	Gardinal	3.33
2.	Eptoin	83.33
3.	Valproate	3.33
4.	Levera	3.33
5.	Others	6.66

Table 11

Sr. no.	Type of Medicines	No. of Pharmacist (%) n=30
1.	Branded	90
2.	Both(Generic & Branded)	10

Table 12

Sr. no.	Response of Pharmacist	No. of Pharmacist (%) n=30
1.	YES	80
2.	NO	20

Table 13

Sr. no.	Response of Pharmacist	No. of Pharmacist (%) n=30
1.	Increases	83
2.	Stay constant	17

Table 14

Sr. no.	Suffering from Year's	No. of Patient's (%)n=12
1.	<1year	17
2.	1year-5year	58
3.	>5years	25

Table 15:

Sr. no.	Symptoms before Diagnosis	No. of Patient's (%) n=12
1.	Dizziness	17
2.	Loss of Consciousness	50

3.	Muscle Spasm	25
4.	Purposeless Movement	8

Table 16

Sr.no.	Preference	No. of Patient's (%)n=12
1.	Neurologist	16.66
2.	MD	66.66
3.	MBBS	16.66
4.	BAMS	0
5.	BHMS	0

Table 17

Sr.no.	Brand name	No. of Patient's (%) n=12
1.	Eptoin	16
2.	Levera	17
3.	No Information	67

Table 18

Sr. no.	Suffering from Years	No. of Patient's(%) n=12
1.	<1year	17
2.	1-5years	58
3.	>5years	25

Table 19:

Sr. no.	Side Effects	No. of Patient's (%) n=12
1.	Anxiety	50
2.	Drowsiness	16.66
3.	Weight Loss	8.33
4.	Headache	25

Table 20

Sr. no.	Care's	No. of Patient's (%) n=12
1.	Increase Sleep time	33
2.	Exercise	17
3.	Life style change (Yoga, Naturopathy, reduce smoking etc.)	42
4.	Diet change	8

3.3 Fig.

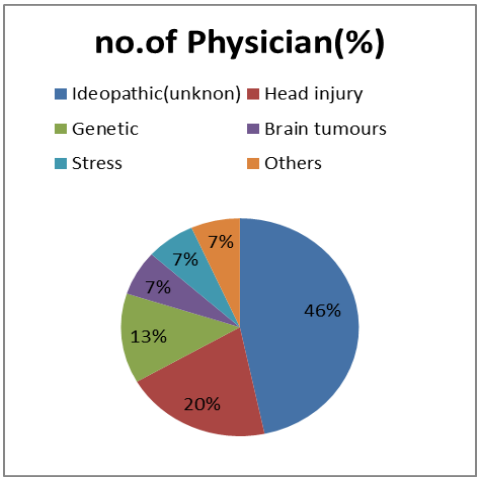


Fig.1

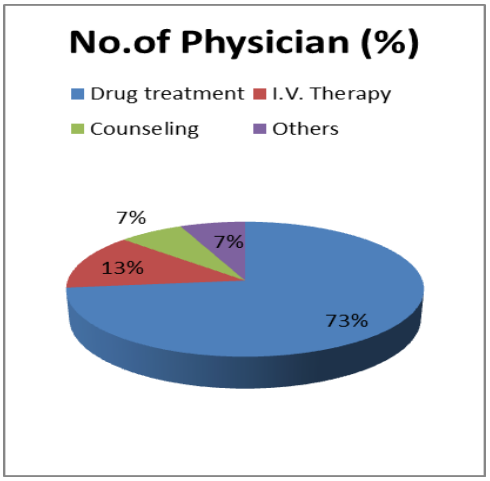


Fig.2

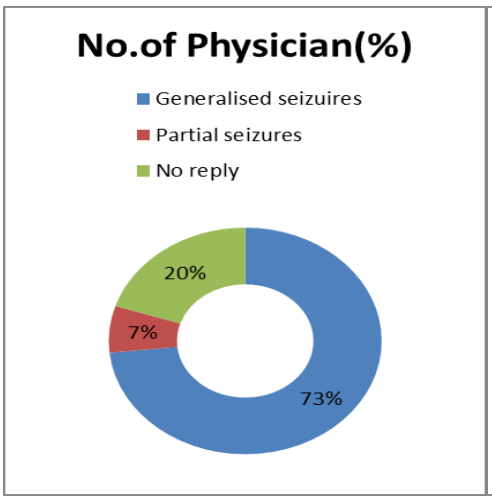
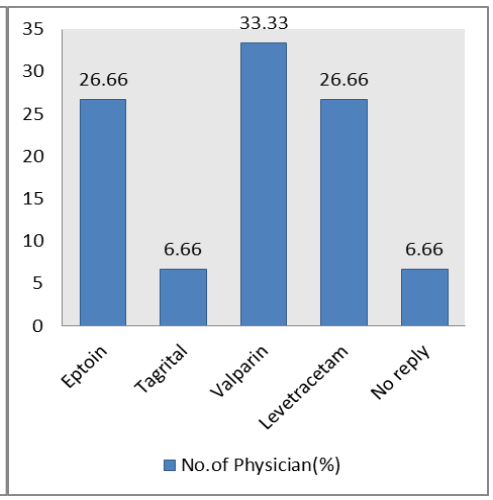


Fig.3



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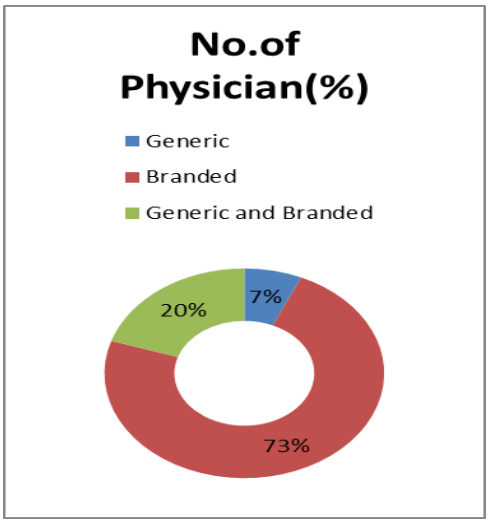

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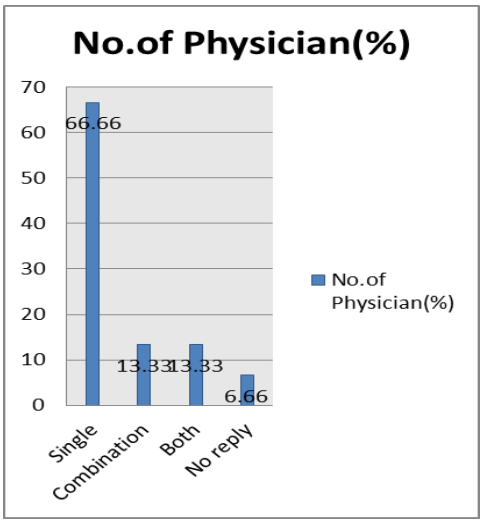

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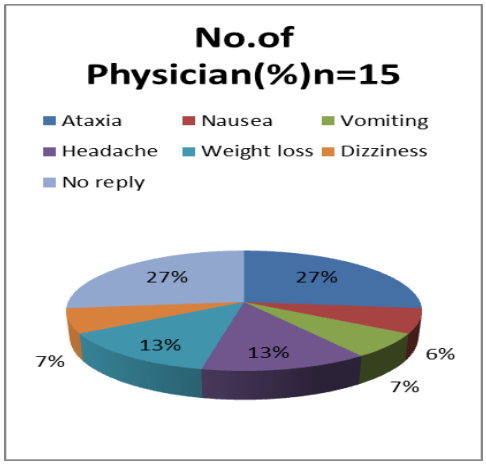


Fig.7

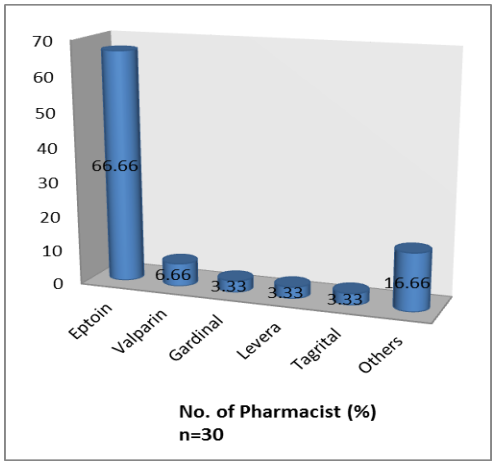


Fig.8

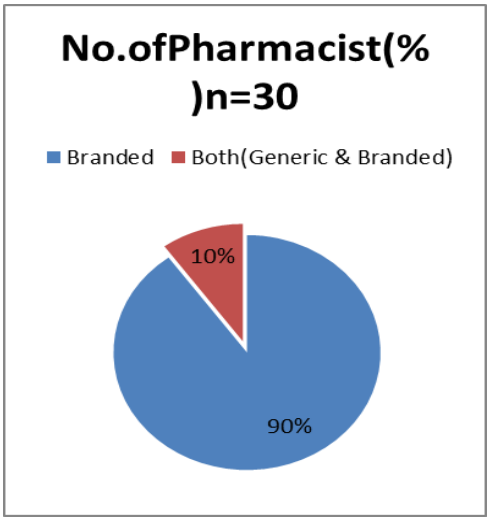


Fig.9

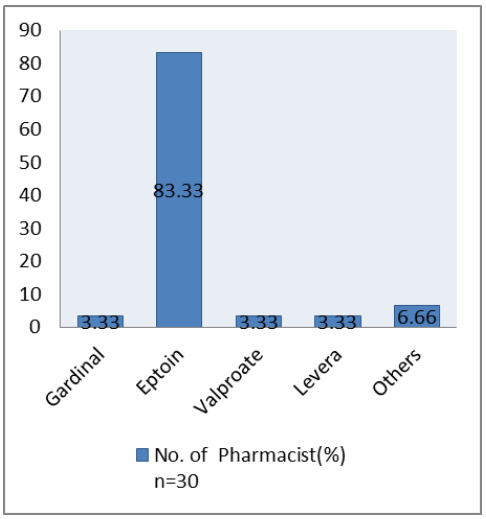
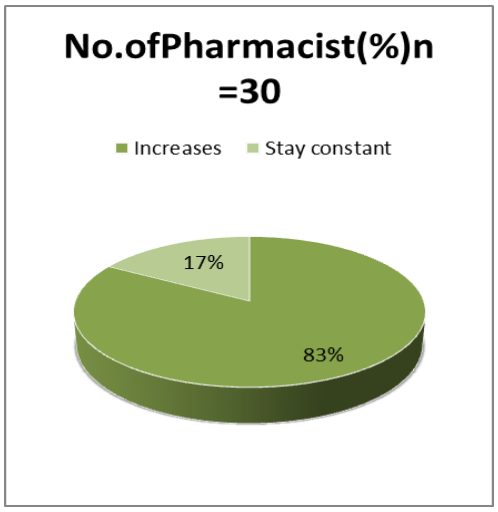


Fig.10



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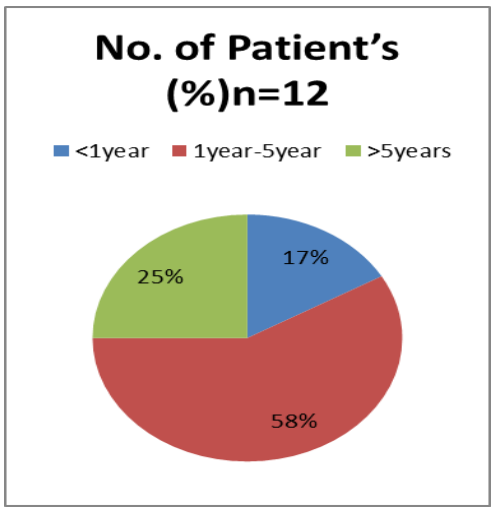

Fig.12

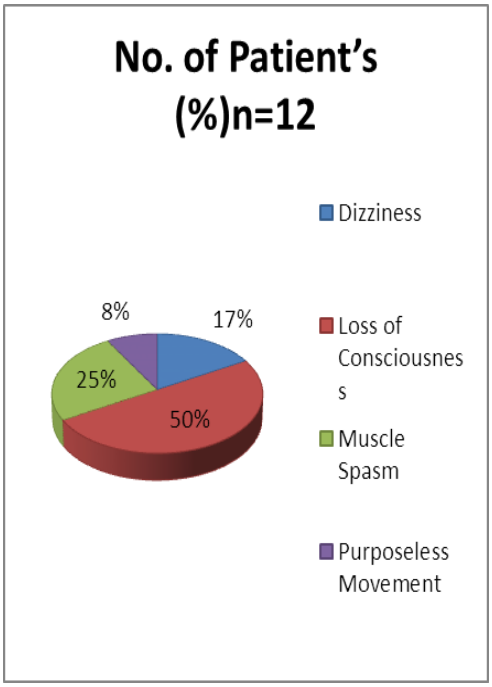

Fig.13

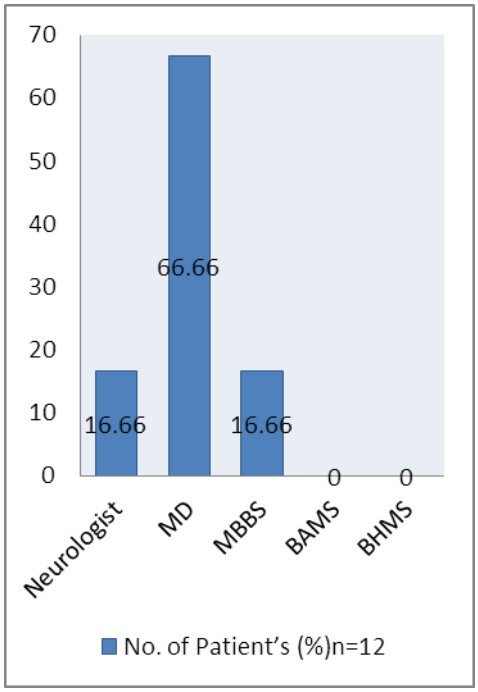

Fig.14

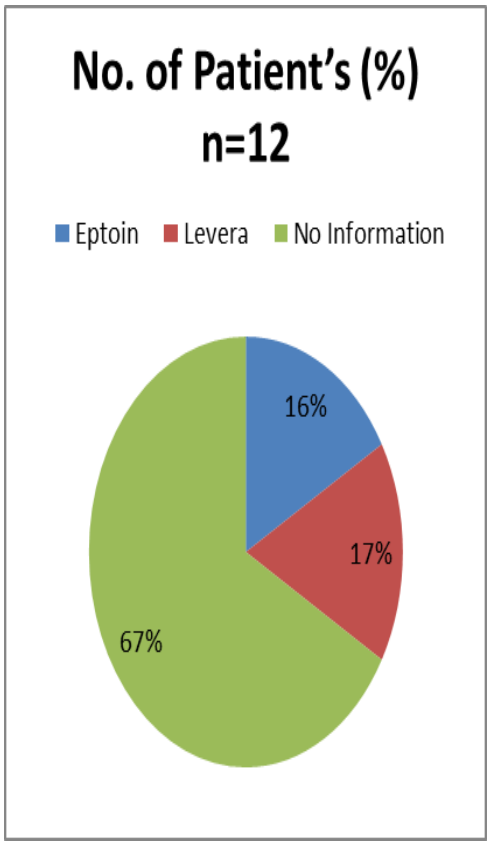

Fig.15

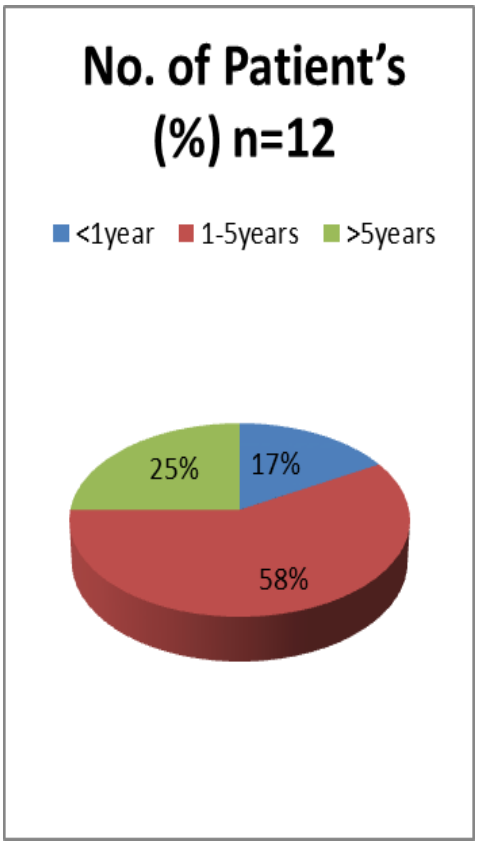

Fig.16

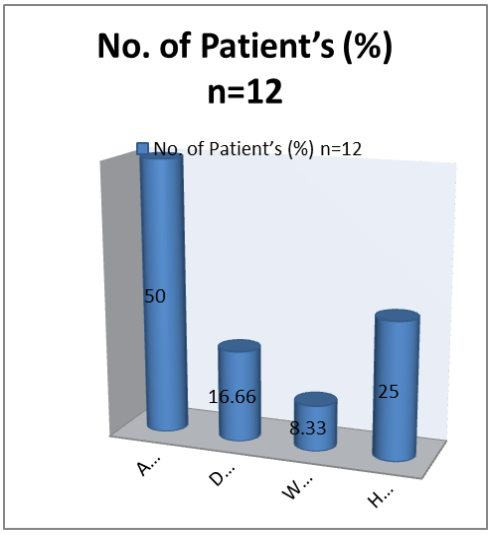

Fig.17

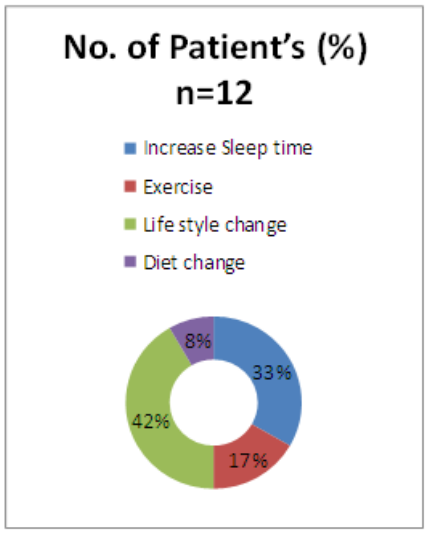

Fig.18

3.4 RESULTS

For Physician

1. According to physician major causes of epilepsy are Idiopathic (Unknown).
2. According to Physician most favorable treatment on epilepsy are Drug treatment, in serious cases Surgery are done.
3. According to Physician Generalized seizures (Type 1) is seen in more Patients.
4. The above observation shows that the near about 53.33% patients of epilepsy visit per months to the physician.
5. By above observation 33.33% physician prefers Valparin, 26.66% physician Eptoin, 26.66% physician Levetracetam, and then 6.66% physician Tagrital.(all brand names)
6. By above observation most of Physician prefers branded drugs.
7. By above observation 66.66% Physician prefers single drugs.
8. Side effects are Ataxia, Headache, Weight loss, Nausea, Vomiting.

For Pharmacist

9. The drugs which are sold maximum by Pharmacist are Eptoin. (brand name)
10. The best selling drugs in market are Eptoin.(brand name).
11. Most Physicians prefers Branded Drugs.
12. 100% Pharmacist say's YES they give counseling to patients.
13. Near about more than 80% of patient's purchasing medicine at single time while others are not buying because money problem and high cost of branded drugs.
14. 83% Pharmacist say's increases the sale of drugs.

15. 100% Pharmacist say's YES prescription are necessary to give antiepileptic drugs to patients.

For Patient

16. The above observation shows that the near about 58% patient suffering from epilepsy from 1- 5 yr ,followed by 25% patient more than 5 yr & followed by 17% patient from less than 1 yr that indicate the number of patient increasing day by day.

17. Most of the Patients having symptoms that is Loss of Consciousness, Muscle Spasm, Dizziness then Purposeless Movement.

18. The above observation shows the majority of patients prefer M.D. qualified doctors for treatment of Epilepsy.

19. More than 67% patient does not know; what medicine they take to treat the epilepsy. Most of patient says red color, white color tablet or yellow color tablet like that this indicate the patient does not aware about medicines.

20. By above observation 58% patients are having epilepsy from 1-5 years then, 25% of patients from more than 5 years and 17% patient having epilepsy form less than 1 yr.

21. 100% Patient's say YES they take medicines are regularly.

22. 100% Patient's say's YES they say's improvement are seen.

23. 100% Patient's say NO any other disease other than Epilepsy.

24. By the above observation it can be say that the 50% patients are suffering from Anxiety, 25% patients are suffering from Headache, 16.66% patients suffering from Drowsiness then 25% patients are suffering from Weight loss.

25. All Patient's take all possible care along with medicines.

4. CONCLUSION

For Physician

1. According to physician major causes of epilepsy are Idiopathic (Unknown).
2. According to Physician most favorable treatment on epilepsy are Tablet treatment, in serious cases Surgery are done.
3. According to Physician Generalised seizures (Type 1) is seen in more Patients.
4. Most of Physician prefers Valparin, Eptoin, Levetracetam, and then Tagrital.(brand names).

For Pharmacist

1. The drugs which are sold maximum by Pharmacist are Eptoin.(brand names)
2. Pharmacist gives counseling to patients.
3. Pharmacist say's prescription are necessary.

For Patient

1. Most of the Patients having symptoms that is Loss of Consciousness, Muscle Spasm, Dizziness then Purposeless Movement.
2. The majority of patients prefer M.D. qualified doctors for treatment of Epilepsy.
3. Patient's say's they take medicines are regularly.
4. Patient's say's improvements are seen from starting the treatment.

5. ACKNOLEDGEMENT

This work is help to patients who are suffering from Epilepsy disease and check the awareness of patients and pharmacist about Epilepsy disease.

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