ORIGINAL RESEARCH PAPER

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KEY WORDS:

STUDY OF ANTI-EPILEPTIC DRUG THERAPY IN EPILEPTIC PATIENTS

Dr.S.Saravanan MD.,DM Neurology. Professor& HOD, Department of Neurology, Tirunelveli Medical College Hospital, Tirunelveli.

P.K Murugan MD,DM., Professor, Department of Neurology, Tirunelveli Medical College Hospital, Tirunelveli. - Corresponding Author

Dr.Raeez Mohammed Basheer Senior Resident, Neurology.

ABSTRACT

The study was done in 100 patients at the department of Neurology, Tirunelveli Medical College Hospital from June 2016 to May 2017. Detailed clinical history, including seizure semiology, frequency of seizures, duration, response to treatment, compliance to drugs, and the time of the last seizure episode were elicited. Data was collected and statistical analysis was done. The commonest age group of epilepsy was 11yrs to 20yrs. Overall drug compliance was 71%. 49% of cases responded to drug therapy. Compliance was better with single drug therapy when compared to multiple drug therapy. Single drug therapy showed better response to treatment than multiple drug therapy.Of all the drugs used in monotherapy, Phenytoin showed the best response.

Introduction:

According to WHO, there are 50 million people with epilepsy worldwide. 80% of them reside in developing countries(1).The estimated burden of epilepsy (DALY) accounts for 1% of the total burden of disease in the world(2). It is estimated that there are 10 million or more persons with epilepsy in india(3). Its prevalence is around 1% of the total population. The prevalence of the disease is higher in rural population than in the urban population(4,5).

The Department of Neurology, Tirunelveli Medical College Hospital, caters to the urban and rural population of Tirunelveli and other nearby districts of the southern parts of Tamil Nadu. Epileptic patients are treated primarily with the older generation drugs like Phenytoin, Carbamazepine, Sodium valproate, Phenobarbitone etc, either as a single drug or in combination therapy. Newer drugs like clobazam and clonazepam are also used in some cases. This study deals with the pattern of drug therapy, compliance to medications and response rate to the medication either as monotherapy or as combination therapy.

Aims and Objectives.

To Study the following.

1. The pattern of drug therapy in epileptic patients.
2. The recurrence rate of seizures among patients with single drug and multiple drug therapy.
3. The drug compliance in various anti-epileptic medications and their combinations

Materials and Methods

The study was done in 100 patients at the department of Neurology, Tirunelveli Medical College Hospital from june 2016 to May 2017. Patients with all forms of seizures of more than 6 months duration were included. Detailed clinical history, including seizure semiology, frequency of seizures, duration, the anti-epileptics used, response to treatment, compliance to drugs, and time of the last seizure episode were elicited from these cases. The precipitating factors for the last seizure were also elicited. Patents were designated as having responded to treatment if they were seizure free for more than one year or since the start of drug therapy.

Inclusion criteria: Seizures of more than 6 months duration; drug therapy for more than six months.

Statistical analysis was done with the data available.

Results

Most of the patents belonged to the age group of 11 to 20. There were 26 cases in this group, followed by the age group 31 - 40 yrs with 23 cases. Most of the patients were having seizures for more than 10 years. There were 43 patients, in this group.

Overall compliance to drug intake was 71%. For single drug therapy, the compliance was 76%, for two drug therapy,it was 67% and for three drug therapy, the compliance was 67%.

21 patients out of the 29 patients with poor compliance had poor control of seizures. This amounts to around 72% of the cases.

51 patients out of 100 had poor response to treatment. So, the overall response rate to treatment was 49%.

Of the 51 patients who had poor response to treatment, the apparent precipitating factor for the seizure within the last 2 months were as follows; 21 cases were due to poor compliance (41%), 2 cases due to sleep deprivation (4%) and 2 cases due to fever(4%).26 cases had no apparent precipitating factor (51%).

In single drug therapy, 20 out of 46 patients responded to treatment (61%). For those in two drug therapy, 15 patients out of 39 responded to treatment(38%). In therapy with three drugs, 6 out of 15 patients showed response.

Among the drugs used in monotherapy, Sodium Valproate had 76% response, Carbamazepine had 68% response and Phenytoin had 100% response.

Combination therapy was divided into 2 groups. One group contained long acting drugs like Phenytoin and Phenobarbtione. Other group did not contain long acting drugs. Response rate in the long acting drugs group within the two drug and three drug regimen were both 38%. The other group with shorter duration drugs had response rates of 39% and 43% for two drug and three drug regimens respectively. There is no statistical difference between the group responses.

Discussion

Worldwide, epilepsy is more common in males. In this study also, the male population was 59 and female population was 41. Regarding the age group, wordwide it is commonest in the first decade of life and in western populations there is another peak after the fifth decade of life. In developing countries this second peak is not commonly seen(6). In this study, the commonest age group was 11yrs to 20yrs. There was no increase in incidence after 50 years of age.

Here, the drug compliance was 71%. In another study conducted in Ethiopia, the compliance was 62%(6). In the western

population, a study in the USA revealed that the compliance was 29% (7). In the UK, a study revealed that the compliance was 41% (8). In this population, the compliance seems to be higher than that of other studies.

72% of the patients in this study with poor compliance also had poor seizure control. In other similar studies, one study in the United States revealed that 45% cases developed seizure after missing medications(9).

More the number of drugs, less is the compliance. Single drug therapy had compliance of 76% and multiple drug regimens had compliance of 67%.

Anti epileptic therapy led to adequate response in 49 patients (49%) and poor response in 51 patients(51%). This study, thus shows a reduced response to anti-epileptic drug therapy, when compared to other studies in which 70% of people with epilepsy are seizure free with optimal AED therapy(10). The reason for the same could be poor compliance due to poor literacy.

Recurrent seizures or poor seizure control were more common in multiple drug therapies. This could be because of factors like the need for multiple doses in a day or the underlying disease being more severe in patients who are under multiple drug therapy.

Comparing individual drugs in monotherapy, Phenytoin showed 100% response to treatment. It was followed by Sodium Valproate with 76% response and Carbamazepine with 68% response. 6 out of 7 patients under Phenytoin treatment had good compliance(85%).This is because Phenytoin is mostly adminis tered as a single dose every day, because of its longer duration of action, when compared to the other two drugs, which are given in twice daily or thrice daily doses.

When comparing combination therapies that contained long acting drugs like phenytoin and phenobarbitone, and those which did not, it was found that, there was no significant difference between the two in control of seizures.

Regarding the causes for recurrence, 41% had a history of poor compliance, sleep disturbance and fever accounted for 4% each and the remaining 51% had no specific underlying cause. A study in Germany confirmed that in 44% of cases, the seizure was related to poor compliance(11).

Conclusion

Compliance was better in single drug therapy when compared to multiple drug therapy.

Single drug therapy showed better response to treatment than multiple drug therapy.

Of all the drugs used in monotherapy, Phenytoin showed the best response, mostly because of its better compliance due to once daily administration and its long duration of action.

In combination drug therapy, the group containing long acting drugs and the group without long acting drugs did not differ significantly in their response.

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