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Original Article

Pharmacist-Patient Chain: Tending to Information Voids and Medication Adherence Issues toward a Robust Prognosis

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ABSTRACT

A Non-experimental prospective observational study has been carried out in tertiary care hospital for a period of 12 months. A total number of 391 pediatric inpatients of age 1- 14 years with seizures were included, counseled and monitored for their outcome. The objective of this study is to improve medication adherence for better prognosis by educating subjects regarding its importance. In our study, the percentage of known epileptics with low adherence initially are found to be 37% and after counseling them about importance of adherence it was found to be 18% and the percentage of patients with high adherence is found to be 14% before counseling and 35% after counseling. Significant improvement in seizure free period is also found indicating a better outcome of the therapy after counseling compared to that of before counseling. This study strongly spotlights that, the Clinical pharmacist has a primal role in providing counseling regarding disease, medication and importance of adherence, that helps in improving the quality of life and achieving better outcomes.

Keywords: Pharmacist, Medication adherence, epilepsy, Morisky scale, Seizure free period**.**

1. INTRODUCTION

The most common neurological disorder, epilepsy, is found to be a prominent reason for disability and mortality in children hence, improving adherence to anti-epileptics is crucial by counseling and educating patients and patient care takers [1, 2]. Among AED's available, there are two categories such as conventional

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AED's and newer AED's [3]. Phenytoin and sodium valproate are most frequently selected conventional AED's in India. Irrespective of their side effects, they are effective in controlling seizures [2, 3]. In children there are many barriers found resulting in non-adherence that leads to uncontrolled seizures, Mental retardation and deaths [4, 5]. Therefore providing information and education on medication adherence is vital to improve quality of life in children [6]. Also there are fewer studies in India, conducted on medication adherence taking counseling as an aid which is to be conducted in a major extent that serves patients resulting in better prognosis [5, 6].

2. METHODOLOGY

A Non-experimental prospective observational study has been carried out in tertiary care hospital for a period of 12 months. The data is collected from the prescription and the history is collected by interviewing the patient. The study protocol is explained to the patient's care taker and an informed consent in taken. All the patients admitted in in-patient department who are diagnosed with epilepsy are divided into known case of epilepsy and denovo cases. A data collection form is designed for the study to collect the details which includes patient's demographics i.e., age and gender, past medical and medication history, laboratory investigations, diagnosis, type of seizures, antiepileptic prescribed. Detailed information was taken regarding the total number of seizure episodes per month/year during follow ups in the study period.

The patients were assessed for medication adherence behavior by using Morisky medication adherence scale MMAS-8 which includes a questionnaire, this score was taken immediately after admission of known epileptics and the score is compared with the new score taken at the end of the study after counseling them at montly reviews in OP. The patients and their care taker are counseled regarding disease, drugs (use, side effects, importance of adherence), Effects and consequences of non-adherence were explained in detail. During the admission period patients adherence was monitored on daily basis and at discharge counseling was given to adhere the medication and it was monitored during monthly reviews. All patients included in the study are followed up in OP reviews and by contacting them through a phone call. A monthly review has been done and the score is been taken, at the end of the study period a mean value of all the scores has been performed and results were drawn.

Inclusion criteria

The study population was limited to those who were

- Age group: 1-14 years.
- Inpatients with seizures of both sexes, who are prescribed with anti epileptic drug during their hospital stay.
- Patients who are willing to co-operate.

Exclusion Criteria

- Out-patient cases.
- Patients who are not willing to participate in the study.

3. RESULTS

Total numbers of patients admitted with seizures from 1st March 2014 to 31st March 2015 were 391.
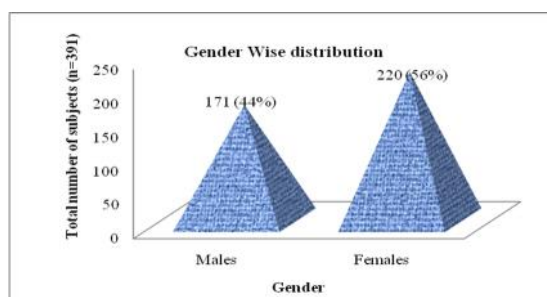

Fig1: Gender Wise Distribution of Study Population

This fig. states that the number of female children with epilepsy are found to be more than male children. The number of female patients admitted during study period are 220 and male patients 171.
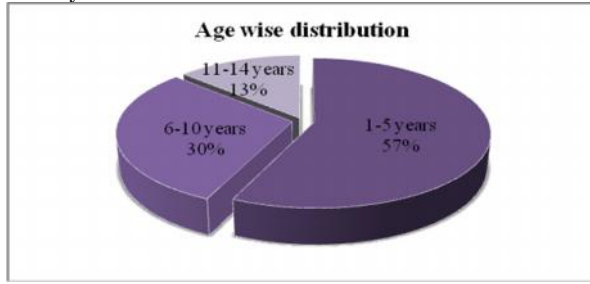
Fig 2: Age Wise Distribution 0f Study Population

This fig. shows that the percentage of patients diagnosed with epilepsy between 1-5 years is 57%, 6-10 years is 30%, 11-14 years is 13%.
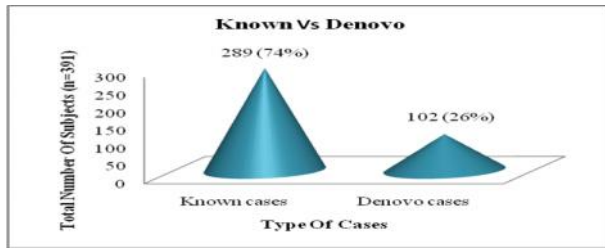

Fig 3: Known vs Denovo cases

This chart shows that the number of known cases are found to be 289 and the denovo cases are found to be 102.
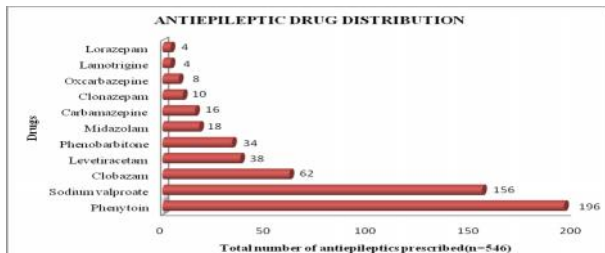

Fig 4: Anti-Epileptic Drug Distribution

This bar diagram explains that the total number of antiepileptics prescribed during study period is 546 among which 196 patients are prescribed with phenytoin, 156 patients with sodium valproate,62 with clobazam, 38 with levetiracetam alone or in combination with other anti-epileptics, the least prescribed anti-epileptics are lamotrigine and lorazepam. Diazepam is prescribed in emergency management.
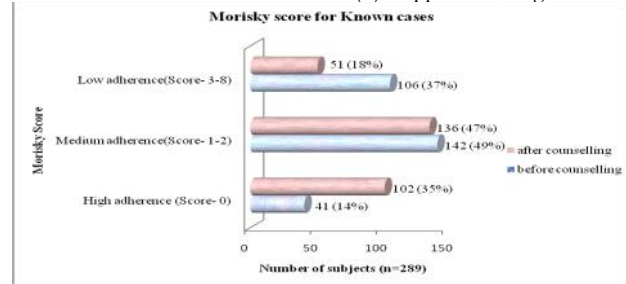

Fig 5: Morisky Score For Known Cases

This chart explains the morisky score of known cases before and after counseling. On basis of morisky adherence scale, patients with high adherence (score - 0) before counseling are found to be 41 and after counseling are 102; medium adherence(score 1-2) before counseling are 142 and after counseling are 136; low adherence(score 3-8) before counseling are 106 and after counseling are 51.
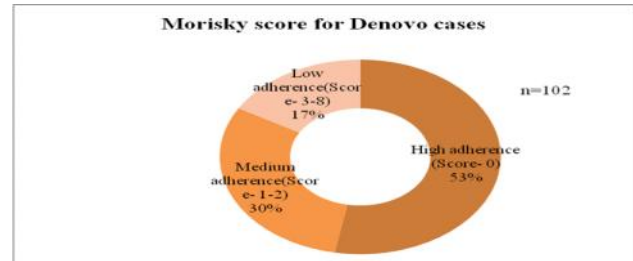

Fig 6: Morisky Score for Denovo Cases

This pie chart shows the morisky score for denovo cases. Percentage of Patients with high adherence (score-0) is 53%; medium adherence(score1-2) is 30%; low adherence(3-8) is 17%.
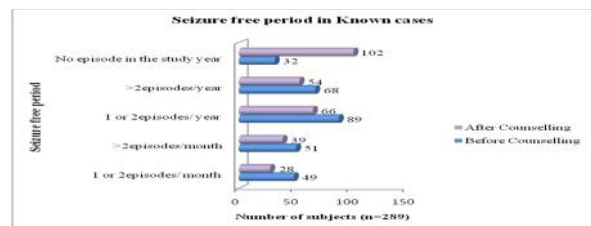

Fig 7: seizure free periods in known cases

This bar diagram shows the seizure free period in known epileptic cases. 1or 2 episodes per month are seen in 49 patients before counseling and in 28 patients after counseling; >2 episodes per month were seen in 51 patients before counseling and in 39 after counseling; 1or 2 episodes per year in 89 patients

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before counseling and in 66 patients after counseling; >2 episodes per year in 68 patients before counseling and in 54 after counseling; no further episodes observed during study period before counseling- 32 and after counseling-102.
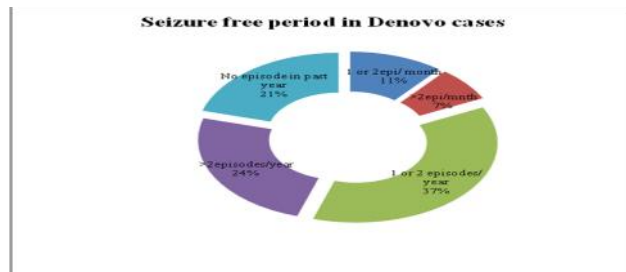

Fig 8: Seizure free period in Denovo cases:

This pie chart represents the seizure free period in denovo cases. The percentage of patients with 1 or 2 episodes per month is 11%, >2 episodes per month is 7%; 1or 2 episodes per year is 37%, >2 episodes per year is 24% and percentage of patients with no episodes during study period is 21%.

4. DISCUSSION

The total number of subjects included in this non-experimental prospective observational study conducted for a period of 12 months between march 1st 2014 to march 31st 2015 are 391 among which number of female patients are greater than male patients. There is significant difference in gender variation compared to other studies [7]. The highest incidence of seizures was found in the age group 1-5 years and least in the age group 11-14 years, which differ with many other studies[8, 9, 10]. Mostly prescribed drug in our study is phenytoin, which differ with other studies [11, 12, 13]. In this study, the percentage of patients with low adherence initially are found to 37% and after counseling them about importance of adherence it was found to be 18% i.e. patients with low adherence score decreased after counseling and the percentage of patients with medium adherence before counseling is found to be 49% and the percentage after counseling is 47% followed by percentage of patients with high adherence is found to be 14% before counseling and

35% after counseling, there is a significant improvement in the case of patients with high adherence after counseling. For denovo cases, it was found that the percentage of patients with low adherence is 17%, medium adherence 30% and high adherence 53% after counseling which was obtained during monthly reviews. Significant improvement in seizure free period is also found indicating a better outcome of the therapy after counseling compared to that of before counseling and this is obtained during follow up/phone calls. There are less studies found similar to that of our study [14, 15, 16].

5. CONCLUSION

In this study, we have found that the number of patients with high adherence got increased after counseling and educating regarding disease, drugs their use, side effects, precautions and importance of adherence and the number of patients with low adherence got decreased. The barriers observed during counseling are low socio economic status, low level of education, lack of government supply of some newer anti-epileptics. By monitoring during outpatient reviews it was found that the seizure free period got increased when compared to the seizure free period of the patients before counseling and based on which it was found that the quality of life of the children got improved, also it was observed that there were more beneficial outcomes. Pharmacist has an immodest role in improving the quality of life, compliance which help in deriving beneficial outcomes from the prescribed treatment.

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