Vol. 16, No. 4
ORIGINAL PAPER

NEUROLOGY

MEDICAL CHANNEL
OCTOBER- DECEMBER 2010

NON-COMPLIANCE TO ANTI-EPILEPTIC TREATMENT: REASONS AND FACTS.

1. **SHAHEEN AHMED MUGHAL** M.B.B.S., M.D (Neurology)
2. **MUHAMMED SALEEM FAIZ** MB.B.S., FCPS
3. **HABIBULLAH SHAIKH** M.B.B.S, MPhil
4. **ABDUL QAYOOM MEMON** M.B.B.S, FCPS

1. ***Assistant Professor*** **Department of Neurology** PEOPLE MEDICAL COLLEGE HOSPITAL NAWABSHAH, SINDH, PAKISTAN
2. ***Associate Professor Medicine*** **Medical Unit III** PEOPLES MEDICAL COLLEGE HOSPITAL NAWABSHAH, SINDH, PAKISTAN
3. ***Assistant Professor*** **Department of Biochemistry** PEOPLES MEDICAL COLLEGE NAWABSHAH, SINDH PAKISTAN
4. ***Professor Medicine*** **Medical Unit I** PEOPLES MEDICAL COLLEGE HOSPITAL NAWABSHAH SINDH, PAKISTAN

Correspondence:
DR. SHAHEEN AHMED MUGHAL
Assistant Professor Neurology
Medical Unit I,
PMCH NAWABSHAH
Mobile: 0314-2193556
Email: samughal58@yahoo.com

ABSTRACT:-

OBJECTIVE: *To determine the reasons for non- compliance with treatment in epileptic patients.*
STUDY DESIGN: *Descriptive.*
PLACE AND DURATION OF STUDY*: Department of Medicine Peoples Medical College Hospital Nawabshah from 1-1-2008 to 31-12-2009.*
MATERIAL AND METHODS: *Ninety six known cases of epilepsy with poor control of seizures due to non-compliance with Anti-Epileptic Drugs (AED) were enrolled. The reasons for non-compliance as described by the patients in their own words were documented. All such cases were admitted in the medical ward so that the subsequent compliance can be monitored. Routine lab. work, EEG, CT Scan of brain were done in all cases.*
RESULTS: *Of the ninety six cases, 92 were males and 4 were females. Age ranged from 15-35 years. Majority (83.3%) never attended a school. Most of them were the residents of small rural communities. All cases had generalized tonic-clonic seizures (grand mal epilepsy). In 41.7% poverty was the reason for discontinuing the therapy. Another 41.7% patients stopped taking AED on improvement. 12.5% considered epilepsy as a 'supernatural' event. While 4.1% switched over to alternative medicines (herbs) at their own will. In 95.8% seizures remained under control once their AED were restarted.*
CONCLUSIONS: *Poverty and lack of knowledge regarding the proper treatment of epilepsy appears to be the common reasons for non-compliance in our patients. Better socio-economic conditions and better awareness of epilepsy especially among the rural masses will help in improving the compliance and in better seizure control.*

KEY WORDS: Epilepsy, Treatment, Non-compliance, Rural

INTRODUCTION:
Epilepsy is a common neurological disorder [1]. Higher prevalence of epilepsy is reported in the rural areas of Pakistan than in the urban areas [2]. In majority the epileptic seizures can be successfully treated with anti-epileptic drugs (AED)[3]. However, recurrent seizures due to non-compliance with treatment remains a major issue in the long term management of epilepsy[4]. Compliance is generally defined as the extent to which the patient follows the care-givers' advice with respect to taking medication, following a diet, modifying habits or attending clinics [5]. Thus the patients' variance from this definition would be considered as non-compliance.
Various factors for non-compliance with treatment in epilepsy has been previously reported [6,7,8] but no such study has been done in our region . It is important to address this issue since the impact of non-compliance affects both the patients and the state in terms of outcome and cost respectively[9]. Given the magnitude of illiteracy, limited health resources and uncertain economic conditions, we suspect a sizeable number of patients with epilepsy in our population would be non-compliant to treatment. The purpose of this study was to determine the subjective reasons for non-compliance in epilepsy patients coming to our hospital.

MATERIAL & METHODS:
A total of ninety-six patients with a known history of epilepsy who were reported to be non-compliant to previous treatment were enrolled during the period 1-1-2008 to 31-12-2009. The history of non-compliance was based on self-confessional statement

that they were not taking anti epileptic drugs (AED) regularly and that there was a direct relationship to drugs intake and seizures' frequency where as long as they were using AED seizures stopped occurring and once they stopped using AED the seizures started recurring again. All such cases were admitted in the medical ward so that the subsequent compliance can be monitored. Routine Lab. work, EEG and CT Scan of brain were performed in all cases to rule out any diagnostic uncertainty. History of AED used in the past was recorded by checking the previous prescriptions or by identifying the bottles or tablets available with the patients. The reasons given for non-compliance as described by the patients in their own words were documented.

RESULTS:

Of the ninety-six cases, 92 were male and 4 were female (Figure1). Age ranged from 15-35 years. Age and gender distribution is given in Table 1. All cases had generalized tonic–clonic seizures (grand mal epilepsy). CT Scans of brain were unremarkable for any focal or diffuse abnormality. EEG reports were correlated with the clinical findings. Eighty out of ninety-six (83.3%) never attended school and only 16/96 (16.7%) were educated (Figure 2). Most of them were the residents of small rural communities. The common reasons given for the non-compliance are shown in Table 2. In 40/96(41.7%) poverty was the reason where they said they could not afford to purchase AED on a regular basis. Forty out of ninety-six (41.7%) patients stopped using AED on improvement with a misconception that their disease was cured. Twelve out of ninety-six (12.5%) had false beliefs regarding epilepsy and they perceived it as a supernatural event (possession by a evil spirit or 'fakir'). Four out of ninety-six (4.1%) switched over to alternative therapy (herbs) at their on will. None of the cases discontinued AED because of the adverse effects. In 92/96 (95.8%) seizures remained under control once their AED were restarted.

DISCUSSION:

For optimal seizure control good compliance with AED is essential [3,4]. Understandably, compliance with treatment is possible when there are no 'barriers' in the way of patient for following the physicians' advice [5]. For example if we consider the socio-economic barrier (poverty), 41.7% of our cases were financially weak to the extent that they could not purchase AED on a regular basis. This observation is similar with an international data from Peru [8], where the

FIGURE 1:
GENDER DISTRIBUTION

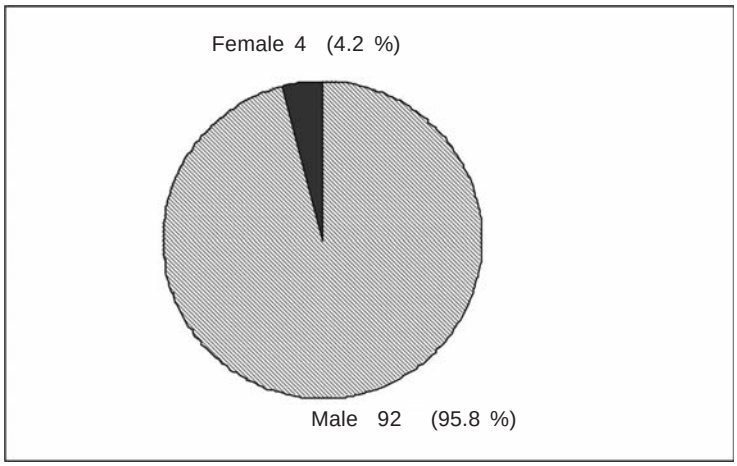


FIGURE 2:
EDUCATION

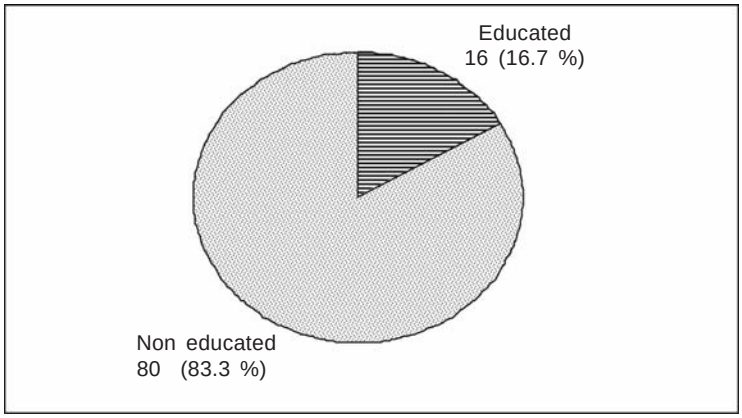


TABLE 1:
AGE AND GENDER DISTRIBUTION

Age Group	Male	Female	Total
(years)	No. (%)	No. (%)	No. (%)
15 – 20	15 (16.3)	1 (25.0)	16 (16.7)
21 – 25	30 (32.6)	2 (50.0)	32 (33.3)
26 – 30	25 (27.2)	1 (25.0)	26 (27.1)
31 – 35	22 (23.9)	-	22 (22.9)
Total	92 (100.0)	4 (100.0)	96 (100.0)

TABLE 2:
REASONS FOR NON-COMPLIANCE

Reasons	Male	Female	Total
	No. (%)	No. (%)	No. (%)
Poverty	38 (41.3)	2 (50.0)	40 (41.7)
Stopped on improvement	40 (43.5)	-	40 (41.7)
False believes	10 (10.9)	2 (50.0)	12 (12.5)
Alternate therapy	4 (4.3)	-	4 (4.1)
Total	92 (100.0)	4 (100.0)	96 (100.0)

most frequent reason given by the patients for non-compliance was also the same i.e inability to purchase medicines. Given the magnitude of poverty in our region, prescribing cheaper AED to the poor patients is likely to improve the compliance as there are reports indicating better compliance when cheaper AED like phenobarbitone was prescribed [7,] With regard to degree of compliance verses patients' socioeconomic status, education levels and rural /urban divide, our observations differ from the Iranian study [7] where no such differences were found . The reason for this discrepancy could be that our patients' concentration was mainly from the rural areas where the poverty is high and the literacy levels are very low. Over 83% of our cases never attended a school. Furthermore, our patients were adults (>15years) who can make their own choices and they also confessed they were non-compliant so there was no ambiguity with respect to their compliance. Whereas, in the Iranian study [7], patients were <18 years old (children and adolescents) and they were receiving treatment under the supervision of their parents where a better compliance is expected. Also, their findings [7] were based on the interviews taken from the families. Such interview-based information may be misleading and there is a tendency for over-reporting of the good compliance [10].

It has been reported that upto 30% of patients are non-compliant to treatment solely due to lack of understanding of their illness and not knowing the aspects of its treatment [11]. This is close to our 41.7% cases where they discontinued treatment on their own with a misconception that their disease was cured. The knowledge about the illness and far how long the treatment should be continued need to be communicated to the patients. As better understanding of the concept of illness and its treatment helps in improving the compliance [12]. In addition, motivation and support from the family and the treating physician also predicts a good compliance [13]. This is applicable in cases who do not wish to continue using AED for a prolonged period of time as evident in a proportion (41.7%) of our patients. Various socio-cultural and socio-religious aspects may also influence the compliance[14,15]. It is interesting to note that in our study only four female patients compared to 92 males were found to be non-compliant. A possible reason for this gender disparity could the cultural obligation of observing 'purdah' for women or not being allowed to travel frequently outside the homes may forced them to stay indoors. Otherwise, given the reasons for non-compliance, we believe both male and female patients are equally non-compliant in our region. Such cultural barriers are difficult to overcome. Nevertheless, an attempt should be made for adopting the cultural relevant approaches as they are effective in the successful medical treatment [16].

False beliefs regarding epilepsy as a 'supernatural' event (e.g. witchcraft, possession by a evil spirit etc.) are common and widespread [17,18,19] . These kinds of beliefs were present in 12.5% of our cases. Surprisingly the numbers are lower than expected and even lower i.e. 3.1% reported in a population based study [2]. In another observation [20] only 0.6% of the school teachers from the urban areas had similar beliefs. These differences suggest regional variations where misperceptions regarding epilepsy may be more profound in one community compared to the others. The authors feel that the unfounded beliefs attached to epilepsy are so overwhelming and engraved over the centuries that they are unlikely to change in the foreseeable future.

CONCLUSIONS:

Poverty and the lack of knowledge regarding proper treatment of epilepsy appears to be the common reasons for non-compliance in our patients. Better socio-economic conditions and better awareness of epilepsy especially among the rural masses will help in improving the compliance and in better seizure control. Given the ground realities, the overall outlook for epilepsy and its management remains complex and need further research.

ACKNOWLEDGMENT:

We thank Mr. Ejaz Alam of Pakistan Medical and Research Council (JPMC cell) Karachi for the technical help.

REFERENCES:

1. Hirtz D, Thurman DJ, Gwinn-Hardy K, Mohamed M, Chaudhuri AR, Zalutsky R. How common are the "common" neurologic disorders? Neurology 2007;68:326-37.
2. Aziz H, Ali SM, Frances P, Khan MI, Hasan KZ. Epilepsy in Pakistan: A population-based epidemiologic study. Epilepsia 1994; 35(5):950-8.
3. Sander JW. The use of antiepileptic drugs - principles and practice. Epilepsia 2004;(suppl 6) :28-34.
4. Nicholl JS. Noncompliance with treatment of neurologic disease. Cur Treat Opt Neurol 2002;4(6):469-76.
5. Osterberg I, Bkaschke T. Adherence to medication. N Engl J Med 2005;353:487-97.
6. Kingas H. Compliance with health regimens of adolescents with epilepsy. Seizure 2000;9(8):598-604.
7. Asadi-Pooya AK. Drug compliance of children and adolescents with epilepsy. Seizure 2005;14:393-5.
8. Enriquez-Caceres M, Soto-Santillana M. Non-compliance with pharmacological treatment in patients with epilepsy. Rev Neurol 2006;42(11):647-54.
9. Faught RE, Weiner JR, Gurin A, Cunnington MC, Duh MS. Impact of nonadherence to antiepileptic drugs on health care utilization and costs: findings from the RANSOM study. Epilepsia 2009;50(3):501-9.
10. Mitchell WG, Scheier LM, Baker SA. Adherence to treatment in children with epilepsy: who follows "doctor's orders"? Epilepsia 2000;41:1616-25.
11. Ball DE, Taderera A. Development of drug use indicators for epilepsy. Cent Afr J Med 2003;49:134-8.
12. Golbeck AL, Ahlers-Schmidt CR, Paschal AM, Dismuke SE. A definition and operational framework for health numeracy. Am J Prev Med 2005;29:375-6.
13. Kingas H. Predictors of good compliance in adolescents with epilepsy. Seizure 2001;10(8):549-53.
14. Tsai JJ, Cheng TJ. Status of follow-up among patients with epilepsy in epilepsy clinic. Jpn J Psychiatry Neurol 1992;46:405-8.
15. Paschal AM, Ablah E, Wetta-Hall R, Molgaard CA, Liow K. Stigma and safe heaven : a medical sociological perspective on African-American female epilepsy patients. Epilepsy Behav 2005;7:106-15.
16. Wells S, Black R. Cultural competency for health professionals. American Occupational Therapy Association, Bethesda, MD. 2000.
17. Carrazana E, De Toledo J, Tatum W, Rivas-Vasquez R, Rey G, Wheeler S. Epilepsy and its treatment in the ancient cultures of America. Epilepsia 1999;40(7):1041-6.
18. Jilek –Aall L. Morbus Sacer in Africa: some religious aspects of epilepsy in traditional cultures. Epilepsia 1999;40(3):382-6.
19. Carod FJ, Vazquez-Cabrera C. Epilepsy and religious experiences: Voodoo possessions. Epilepsia 1999;40(2):239-41.
20. Akhter SW, Ali S, Ali SM et al. Survey of knowledge, attitude and practice of epilepsy among 535 school teachers in five cities of Pakistan. Neurol Asia 2007;12(suppl 1):99-100.