The Islamic University Journal (Series of Natural Studies and Engineering)
Vol.14,No.1,P.183-189, 2006, ISSN 1726-6807, http//www.iugzaza.edu.ps/ara/research/

PREVALENCE & TREATMENT OF PATIENTS WITH EPILEPSY ASSOCIATED WITH INTELLECTUAL DISABILITY: A PILOT STUDY IN PALESTINE

Waleed Sweileh, Asaad Al-Shakshair, Nidal Jaradat, Karam Abu-Rabie & Wafa Sabah
Clinical Pharmacy Graduate Program, An-Najah University, Nablus, Palestine.
Corresponding Author: waleedsweileh@mail.najah.edu

Abstract: We carried out a pilot study to investigate the prevalence and treatment pattern of epilepsy associated with intellectual disability in governmental neurological/psychiatric clinics in Nablus / Palestine. Medical files of all patients diagnosed with epilepsy in Al-Makhfeh neurology/psychiatry clinic were investigated. Focus was made on treatment practices among patients whose files indicated intellectual disability. All data were entered and analyzed using Statistical Package for Social Sciences (SPSS) software. Out of one hundred and thirty four patients, twenty patients (15%) were diagnosed with intellectual disability. Both combo and mono therapy were practiced among those patients. Barbiturates were commonly used both in mono or in combo therapy. Newer agents like vigabatrin, lamotrigene and felbamte were not used. This pilot study should stimulate health authority in Palestine to implement rational treatment policies of epilepsy among patients with intellectual disability given the fact that this group of people do not receive adequate medical and health attention.

Introduction:

The frequency of epilepsy among people with an intellectual disability is much higher than in the general population [1]. Some specific issues are needed to be taken into account when treating epileptic patients who have intellectual disability. These issues include the additional intellectual impairment caused by inappropriate antiepileptic medication, the appropriate use of mono therapy versus rational poly-therapy, and the use of broad-spectrum anti-epileptic agents. Carbamazepine is a common antiepileptic drug which is primarily used to treat epileptic patients suffering from partial seizures with or without secondary generalization; besides it has application among those suffering from primary generalized tonic-clonic seizures. Because of its minimal unwanted effects on cognition and behavior, carbamazepine is an excellent drug for the treatment of people with intellectual disability and epilepsy [2]. Lamotrigine is also very favorable drug for treating epilepsy in people with intellectual disability because it, is effective in treating subtle seizures, shows no loss of effect with time, is not usually sedative, does not produce difficult-to-manage adverse effects, appears to have no direct adverse behavioural effects and is available in a range of 'patient friendly' preparations [3]. Vigabatrin is also effective and relatively well tolerated in patients with intellectual disability and severe epilepsy [4]. In contrast, the use of phenytoin and barbiturates are not recommended for patients with marked cognitive impairment, or symptoms and signs of cerebellar disease because they produce intolerable side-effects at the point that the use of phenobarbital has been reduced to a minimum, and it is no longer considered a drug of choice [5, 6]. The clinical use of benzodiazepine (BZDs) for the prophylactic treatment of epilepsy is associated with two major problems which have limited the long-term use of these drugs: the potential for side-effects, especially sedative effects, and the high risk of development of tolerance. Despite the limitations of BZDs in the prophylactic treatment of epilepsies, these drugs play a prominent role in clinical practice in the emergency management of acute seizures and status epilepticus among patients with intellectual disability. Diazepam, clonazepam and lorazepam are all considered first-line agents in the emergency management of acute seizures and status epilepticus [8].

No statistical and updated data regarding the prevalence of epilepsy and intellectual disability is available in Palestine. In general, no published work has been found that discusses the treatment approach to epilepsy in Palestine. Epileptic patients seems to be a neglected group of patients who have not been well studied from a therapeutic point of view. The purpose of this project is to determine the prevalence and treatment pattern of patients with epilepsy associated with intellectual disability among all epileptic patients attending a neurology/psychiatric clinic in the largest district in North Palestine, Nablus.

Methodology:

This study was carried out on one hundred and thirty four out-patients attending the neurology/psychiatry governmental clinic in Al-Makhfeh health clinic / Nablus, Palestine during the period Aug., 2003 – Jan., 2004. This clinic is the only governmental center in Nablus district that provides primary health care to patients with psychiatric or neurological disorders. A review was made to the full drug and disease profile of the patients attending the neurology/psychiatry governmental clinic in Al-Makhfeh Health Clinic / Nablus / Palestine who are diagnosed with epilepsy and receiving anti-epileptic medications. The access to

The Islamic University Journal (Series of Natural Studies and Engineering)
Vol.14,No.1,P.183-189, 2006, ISSN 1726-6807, http//www.iugzaza.edu.ps/ara/research/

the files was made by a pre-approval from the ministry of health and the personnel working in the clinic. Extraction of the data from the files was made by one of the working physicians in the unit who was assigned by the ministry of health. The data in the files concerning age, sex, prescribing physician, diagnosis and medications were entered in the Statistical Package for Social Sciences (SPSS) program version 10 for windows and analyzed. Intellectual disability was described in the medical files as low intelligent quotient (IQ) or as mentally subnormal.

Results:

The majority of the patients being studied (79/134) were males and most patients were in the age interval of 27 – 48 years. The co-morbid neurological and psychological conditions present in the epileptic patients is shown in (table 1). The number of epileptic patients who have intellectual disability described in their files as low IQ or mentally subnormal was twenty patients. Those epileptic, intellectually disabled patients were mostly males of all age groups but mostly between 27 – 37 years. Most of those intellectually disabeled patients were receiving combination of anti-epileptic therapy mostly as phenobarbitone plus carbamazepine. The most commonly prescribed antiepileptic drug among those intellectually disabled patients taking into consideration both mono and combination therapy was carbamazepine (Tegretol®) (13/20) followed by phenobarbitone (8/20). One third of the patients were receiving antiepileptic mono therapy mainly as carbamazepine or phenobarbitone (table 2).

Table 1: Frequency of other co-morbid neurological and psychiatric conditions in the sample studied.

Diagnosis	Frequency (Number of Patients)
Epilepsy alone	109
Epilepsy + Intellectual Disability	20
Epilepsy + Psychosis	5
Total	134

Table 2: Characteristics and treatment pattern of epileptic patients with intellectual disability.

Character	Frequency (Patients with E + ID)
Gender	
- male	14
- female	6
Age Interval (years)	
- (5 – 15)	3
- (16 – 26)	2
- (27 – 37)	9
- (38 – 48)	4
- (49 – 59)	2
Number of Anti-epileptic drugs used	
- No drug	1
- One drug	6
- Two drugs	12
- Three drugs	1
Carbamazepine (Tegretol®)	
- Yes	13
- No	7
Phenobarbitone (Luminal ®)	
- Yes	8
- No	12
Phenytoin (Epanutin®)	
- Yes	6
- No	14

Valproic Acid (Depalept®)	
- Yes	1
- No	19
Combo and Mono Therapy:	
Clonex® (clonazepam) + Tegretol®	2
Depalept® + Tegretol®	1
Epanutin®	1
Epanutin® + Lumina®l	3
Epanutin® + Luminal ® + Tegreto®	1
Epanutin® + Tegretol®	1
Luminal®	2
Luminal® + Tegretol®	5
Tegretol®	3

Discussion:
There is no official statistical data regarding the prevalence of either epilepsy or intellectual disability in Palestine. This study aimed at investigating the prevalence and treatment of epileptic patients with intellectual disability in Nablus. The results reveal that the prevalence of intellectual disability among epileptic patients is approximately 15%. Although the goals in treating patients with epilepsy associated with intellectual disability are to keep the patient seizure-free and alert while preventing possible mental deterioration, we switched to a compromises acceptance between these primary goals in many cases. Some people with epilepsy and intellectual disability are very vulnerable to insidious neurotoxic effects; for example, sedative effects caused by phenobarbital, or cognitive and/or cerebellar dysfunction caused by long-term phenytoin, when given with other drugs. Because of the adverse effects of phenobarbital and phenytoin, these drugs are no longer recommended as a first-choice drugs when long-term antiepileptic medication is required. Studies reviewing treatment practice among intellectually disabled patients with epilepsy in institutions and clinics showed a reduction pattern of polytherapy and relative increase in mono therapy as well as a decrease in barbiturate [(9)]. A lot of research was done on epilepsy syndromes which are strongly associated

with intellectual disability such as infantile spasms (West syndrome) and Lennox-Gastaut syndrome. Chiron *et al.* (1991) have shown in both open and a limited placebo-controlled study an impressive efficacy for Vigabatrin in this population, with 43% of children showing complete cessation of seizures and 46 out of 70 children showing a greater than 50% reduction in seizures [(10)]. A recent report, in abstract form, of a double blind placebo controlled study of Vigabatrin in infantile spasms showed a complete cessation of seizures in 45% of the active group versus 15% of the control group [(11)]. The data in Lennox-Gastaut syndrome is of particular interest to clinicians dealing with both children and adults with intellectual disability. Three high-quality randomized controlled studies have been performed on individuals with Lennox-Gastaut syndrome using Felbamate, Lamotrigine and Topiramate, the results of which were also impressive [(12, 13)]. In our study, patients were treated using mono therapy and combo therapy and there was a relatively high usage pattern of barbiturates and no utilization pattern of the new well proven anti-epileptic drugs like vigabatrin and felbamate or lamotrigene.

This study should stimulate health authority in Palestine to implement the newer drugs like vigabatrin, felbamate and lamotrigene in the treatment of epilepsy among patients with intellectual disability and to limit the use of barbiturates in this group of patients.

References:

1. Kerr M., Fraser W., and Felce D. Primary health care for people with a learning disability; a keynote review. *British Journal of Learning Disability. **1996***; **24**, 2-8.
2. Waisburg H, Alvarez N. Carbamazepine in the treatment of epilepsy in people with intellectual disability. *J Intellect Disabil Res. **1998***;**42** Suppl 1:36-40.
3. Besag FM. Lamotrigine in the treatment of epilepsy in people with intellectual disability. J Intellect Disabil Res. ***1998***;**42** Suppl 1:50-56.
4. Ylinen A Antiepileptic efficacy of vigabatrin in people with severe epilepsy and intellectual disability. *J Intellect Disabil Res. **1998***;**42** Suppl 1:46-49.
5. Iivanainen M Phenytoin: effective but insidious therapy for epilepsy in people with intellectual disability. *J Intellect Disabil Res. **1998***;**42** Suppl 1:24-31.

6. Alvarez N. Barbiturates in the treatment of epilepsy in people with intellectual disability. *J Intellect Disabil Res*. ***1998***;**42** Suppl 1:16-23.
7. Isojarvi JI, Tokola RA. Benzodiazepines in the treatment of epilepsy in people with intellectual disability. *J Intellect Disabil Res*. ***1998***;**42** Suppl 1:80-92.
8. Pellock J. & Hunt P. A decade of modern epilepsy therapy in institutionalized mentally retarded patients. *Epilepsy Research*. ***1996***; **25**, 263- 268.
9. Poindexter A. R., Berglund J. A., Kolstoe P. D. Changes in antiepilepic drug prescribing patterns in large institutions: preliminary results of a five year experience. *American Journal on Mental Retardation.* ***1993***; **98**, 34-40.
10. Chiron C., Dulac O., Beaumont D., Palacios L., Pajot N., Mumford J. Therapeutic trial of Vigabatrin in Refractory Infantile Spasms. *Journal of Child Neurology*. ***1991***; **6**, S52-9.
11. Appleton R. & Thornton L. (for the Infantile Spasm Study Group) Double blind comparison of Vigabatrin versus Placebo in newly diagnosed and previously untreated infantile spasms. *Epilepsia.* ***1996*** Jan;46(1):54-61.
12. Motte J., Trevathan E., Barrera M. N., Mullens E. L., Manasco P. Lamotrigine for generalized seizures associated with the Lennox-Gastaut syndrome. *New England Journal of Medicine.* ***1997;*** **337**, 1807 -1812.
13. Sachdeo R. C., Glauser T. A., Ritter F., Reife R., Lim P., Pledger G. & the Topiramate YL Study Group: A double-blind, randomized trial of topiramate in Lennox-Gastaut syndrome. *Neurology.* ***1999;*** **52**, 1882-1887.