Original Article

Patients'Characteristics and Treatment Outcomes of Epilepsy Clinic Team: Experiences from University Hospital

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Objective: Epilepsy Clinic, Srinagarind Hospital, has served people by multidisciplinary team since 2005. Studying patients' characteristics and service outcomes will contribute to more effective care.

Materials and Methods: Analyzed data on epilepsy patients who were treated at the Epilepsy Clinic at Srinagarind Hospital from January 1, 2011 to December 31, 2011 from outpatient medical records and pharmacy care programs.

Results: of 459, data from 382 epilepsy patients were completely collected. The data were as follows: patients' ages were 15 to 83 years with mean age of 40.40±0.80 years; most were females (51.05%);most completed at least higher education (30.89%);most were married (55.76%); most used universal national health insurance (52.90%);average age at the onset of epilepsy was 30.87±1.04 year; average time for epilepsy treatment was 8.55±0.46 years; average time of treatment at Epilepsy Clinic was 2.60±1.10 years. 75.40 percent of the patients had a brain scan with computed tomography scan or magnetic resonance imaging [MRI], and 47.90 percent was found abnormal. 55.80 percent did electroencephalography [EEG] and positive result accounted for 79.80%. The first three types of epilepsy were generalized tonic-clonic seizures (59.40%), complex partial seizure (41.40%), and simple partial seizure (10.50%). Most of the patients treated with antiepileptic drugs, poly-therapy (55.90%) and mono-therapy (40.10%). Mostly used drugs were Phenytoin (44%), followed by Sodium valproate (40.40%). The average frequency of seizures was 7.50±0.70 times per month and free seizure was found at 55.50%.

Conclusion: The study provided general information on the patients and treatment including overall treatment outcomes. Therefore, further studies should be conducted to understand the factors involved in seizure control.

Keywords: Epilepsy, Epilepsy Clinic, Characteristics, Outcomes

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Epilepsy is a common neurological disease in Thailand. According to the survey on the prevalence of epilepsy in 2000, a study was conducted with 2,069 patients in Nokhon Ratchasima on the prevalence of epilepsy in Thailand and demonstrated that prevalence of patients with status epilepticus was 5.9 to 7.2 per 1,000 people(1). Therefore, according to the 2015 data of the Governing Department, Ministry of the Interior(2) showing the population of 65,729,098 in Thailand, 473,249 people could develop seizures. Based on the statistics of Srinagarind Hospital, Faculty of Medicine, Khon Kaen University, it was found that from 2007 to 2010 there were 941, 1,012, 1,360 and 1,453 cases of epilepsy patients, respectively(3) in the outpatient department. It is obvious that the number of the patients is rising every year. Epilepsy is not a serious disease, and it can be cured or at least recurring symptoms

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prevented. Improper treatment at the first diagnosis will cause an adverse effect on the patients, such as seizures or accidents at the time of seizures. It may additionally affect the patients' mind, their quality of life, and their family as well as society as a whole[4].

The aim of epilepsy therapy is to enable the patients to control seizures. The patients must have trust, knowledge, understanding and cooperation in the use of drugs. This requires a multidisciplinary team of doctors, pharmacists and nurses[5]. Epilepsy Clinic, Srinagarind Hospital, therefore, focuses on the importance to open an epilepsy clinic by a multidisciplinary team to diagnose epilepsy by neurological physicians, provide pharmaceutical care by giving advice on taking medicine, adverse drug use, problem solving from taking drug and by monitoring the level of anticonvulsants by physicians and pharmacists from the Faculty of Pharmacy, Srinagarind Hospital, Khon Kaen University. In addition, there are also supporting activities for epilepsy patients in order that the patients with similar problems are able to share their problems and experiences about self-care and encourage each other. Full-time epilepsy nurses are the group leaders before the patients meet a physician.

For the above reasons, the patients' characteristics and the outcomes of epilepsy treatment are important in supporting and caring for the patients in terms of seizure control and the factors affecting seizures at Epilepsy Clinic, Srinagarind Hospital.

Objective

To investigate and analyze the patients' characteristics and the outcomes of epilepsy treatment at Epilepsy Clinic, Srinagarind Hospital, Khon Kaen University.

Materials and Methods

Descriptive research was used to collect the follow-up data of epilepsy treatment, derived from epilepsy patients for a period of 1 year from 1 January 2011 to 31 December 2011 (retrospective study) at Epilepsy Clinic, Srinagarind Hospital, Khon Kaen University by means of searching for the data from medical records and pharmaceutical care programs. This study was conducted with epilepsy patients aged over 15 years who had received anticonvulsant therapy at Epilepsy Clinic, Srinagarind Hospital, Khon Kaen University. Analysis and research report were shown through frequency, percentage, mean, standard deviation.

Results

Of the 459 patients, data were completely collected from 382 epilepsy patients. When analyzed, it was found that the patients receiving services at Epilepsy Clinic had an average age of 40.40±0.80 years (range 15 to 83), mostly females (51.05%). They completed at least a bachelor's degree level (55.76%) and universal national health insurance (52.9%). The mean age at diagnosis of epilepsy was 30.87±1.04 years. Mean duration of treatment was 8.55±0.46 years. Average duration of receiving epilepsy service was 2.60±1.10 years. Two hundred and eighty eight patients were diagnosed with computed tomography [CT] or magnetic resonance imaging [MRI] and 138 patients of them (47.92%) had abnormalities. Meanwhile, of 213 patients did study an electrocardiogram [EEG], 170 patients showed abnormalities (79.81%). The mean frequency of seizures was 7.46±0.69 times per month. The patients with seizure control were 55.50%. Demographic data and clinical characteristic of epileptic patients showed in Table 1. Most common type of seizure were generalized tonic-clonic seizure (59.42%), other types of seizure showed in Table 2. Mostly 55.90% of the patients received antiepileptic drug (poly-therapy), and 44.10% received mono-therapy treatment. Phenytoin (43.98%) and Sodium valproate (40.44%) were mostly used, other antiepileptic drug used as Figure 1.

Discussion

The present study investigated the characteristics of the epilepsy patients at Epilepsy Clinic, Srinagarind Hospital, Faculty of Medicine, Khon Kaen University (1-year retrospective study from 1 January 2011 to 31 December 2011). It was found that there were 459 epilepsy patients at the clinic, 340 of whom were screened for the present study, mostly female (51.05%). Average age of the patients was 40.40±0.80 years, and average age at first diagnosis was 30.87±1.04 years. They were mostly married (55.76%) and held at least a bachelor's degree (30.89%). 52.90 percent were universal health care coverage. Average duration of treatment was 8.55±0.46 years. 55.90 percent was treated with antiepileptic drugs for more than 2 types (poly-therapy), compared to the treatment with mono-therapy (44.10%). Most antiepileptic drugs used were Phenytoin (43.98%) and Sodium valproate (40.44%). The average duration of treatment at Epilepsy Clinic was 2.60±1.10 years, and mean frequency of epilepsy was 7.46±0.69 times per month. 55.50 percent of the patients were seizure free.

According to the present study, the outcomes were different from the study conducted by Piyawan et al[6]. They had investigated epilepsy treatment provided to patients aged over 15 years at Srinagarind Hospital, Faculty of Medicine, Khon Kaen University. The data revealed that 51.3 percent was male patients, averagely aged 38.3 years. Most of the patients received monotherapy drugs (77.80%). The drugs were mostly Phenytoin (42.20%), Sodium valproate (25.00%) and Phenobarbital (14.10%). The average duration of treatment was 2.60 years (range from 7 days to 7.40 years). The change of treatment was found up to 72.70%. The number of treatment changes ranged from 1 to 30, most of which were dosage adjustment (53.60%), the change of drug type (25%) and the addition of drug type (19.60%), respectively. The outcomes of the treatment revealed that most of the patients' symptom became better up to 89.50%, 5.20% became seizure free and stopped taking antiepileptic drugs. 57.10 percent was seizure controlled and still needed taking

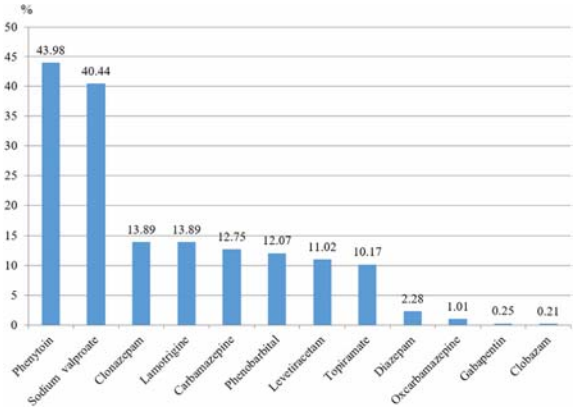

Figure 1. Antiepileptic drugs used in Epilepsy Clinic.

Table 1. Demographic data of epileptic patients

Patients' characteristics	
Age (year) mean ± SD	40.40±0.80
Range (year)	15 to 83
Sex (%)	
Male	187 (48.95)
Female	195 (51.05)
Education level (%)	
Not educated	6 (1.57)
Primary level	84 (21.99)
Junior high school level	30 (7.85)
Senior high school level	72 (18.85)
Diploma level	23 (6.02)
Not less than undergraduate level	118 (30.89)
Not identified	49 (12.83)
Marital status (%)	
Single	152 (39.79)
Married	213 (55.76)
Monkhood	7 (1.83)
Divorced	10 (2.62)
Health care scheme (%)	
Government	118 (30.89)
Self-payment	28 (8.33)
Social security	34 (8.90)
Universal health care coverage (Srinagarind Hospital)	38 (9.95)
Universal health care coverage (other hospitals)	164 (42.39)
Average age at first diagnosis (year) (No. of patients = 340) (mean ± SD)	30.87±1.04
Mean duration of treatment (year) (No. of patients = 340)(mean ± SD)	8.55±0.46
Mean duration of treatment at Epilepsy clinic (year) (mean ± SD)	2.60±1.10
Investigation (%)-Electroencephalography; EEG (No. of patients = 213)	170 (79.81)
Positive result-Brain CT-scan or brain MRI (No. of patients = 288) positive result	138 (47.92)
Average frequency of seizures (time/month) (No. of patients = 340) (mean ± SD)	7.46±0.69
Patients with seizure free (%)	55.50

Table 2. Types of seizure

Types of seizure	n (%)
Simple partial seizure	40 (10.47)
Complex partial seizure	158 (41.36)
General tonic - clonic seizure	227 (59.42)
Absence seizure	19 (4.97)
Atonic seizure	1 (0.26)
Myoclonic seizure	3 (0.79)
Tonic seizure	4 (1.05)
Lennox - Gastaut's syndrome	1 (0.26)
No data	49 (12.83)

antiepileptic drugs. Only 10.40% did not improve. Patient care at Epilepsy Clinic with the multidisciplinary team of doctors, pharmacists and nurses made a greater contribution to the results of seizure control and seizure free than general care. The diagnosis to confirm that patients have epilepsy can be done by electroencephalography [EEG], brain imaging by computer tomography (computerized tomography: CT-scan) and an magnetic resonance imaging [MRI][7]. According to the current study, it was found that 55.80% of the patients diagnosed with EEG yielded positive result of 79.80%. In contrast, 75.40% diagnosed with CT-scan or MRI showed positive result of 47.90%.

For the treatment of epilepsy, patients need continuous anticonvulsant therapy for at least 3 to 5 years so that they can control seizures. Patients can stop taking the medicine when they are able to control seizures (seizure free) for at least two consecutive years. The doctor will gradually reduce the dosage until the patients do not need to take the drug anymore[8]. The average duration of the treatment of 382 patients was 2.60±1.10 years at the Epilepsy Clinic. The percentage of seizure control was 55.50, and the mean frequency of seizure per patient was 7.46±0.69 times per month.

The clinical practice guideline for Thailand epilepsy treatment in 2016[7] suggests selection of antiepileptic drugs according to the type of epilepsy and national essential drug registrations. Mono-therapy treatment was performed at the beginning and when the patients are not able to control seizures, nor reduce the frequency of seizures, or they need specific drugs in case of special population, poly-therapy treatment is required. The first three types of seizure mostly found were generalized tonic-clonic seizure (59.40%), complex partial seizure (41.40%), simple partial seizure (10.50%), respectively. Regarding the type of treatment, the patients were mostly treated with poly-therapy (55.90%), following by mono-therapy (44.10%). It is possibly because Epilepsy Clinic Srinagarind Hospital is a university hospital to which epilepsy patients who cannot control seizures were referred, so it is necessary for the patients to receive additional drugs. For the cases prescribed with one type of antiepileptic drug to control the frequency and symptom, Phenytoin (43.98%) and Sodium valproate (40.44%) were mostly used.

In addition, the process of care in epilepsy clinic service are epilepsy support groups. The epilepsy support group enables epilepsy patients to share common issues or problems and their experience of the illness which also includes exchange of information and advice for members to learn about conditions and their management. In the support group, epilepsy patients do not feel discriminated against as they have a close relationship with other members while at the same time listening to and accepting others' experiences, sharing similar problems, and providing sympathetic understanding. As a result, self-esteem and self-confidence are raised in epilepsy patients. Having expressed their feelings this makes them happier, allows them to understand themselves and their lives better, helps with coping to problems and gives them emotional stability. With the support group, epilepsy patients will learn about personal management to improve self-care. With a means to solve their own problems, the patients have a better quality of life[9].

Conclusion

The study provides general information on epilepsy patients, the treatment, and overall treatment outcomes, all of which are beneficial to the integrated care by the multidisciplinary team. However, further in-depth studies should be conducted for more profound understanding about the factors involved in seizure control for caring epilepsy patients more effectively.

What is already known on this topic?

Epilepsy clinic services are beneficial for epilepsy patients and their family for providing care from multidisciplinary teams such as physician, pharmacist and nurse.

What this study adds?

The epilepsy support group was improved care of epilepsy patients and their family.

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Potential conflicts of interest

The authors declare no conflict of interest.

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