Clinico-Statistical Studies on Epilepsy:

A Review of Cases during 1976 at the Department of Neuropsychiatry of the Yamaguchi University School of Medicine

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INTRODUCTION

The concept of what constitutes epilepsy differs considerably, depending upon the nationality and type of training of the doctor; accordingly the systems for the classification of epilepsy are also very diverse. Undoubtedly, this state of confusion is partly attributable to the fact that our knowledge about epilepsy has become deeper and more regorous only since the development of electroencephalography.

The ensuing confusion is by no means small. The situation being such, the necessity of a standard and uniform system of classification was pointed out, and an international classification of epileptic seizures was planned and advanced (Gastaut 1970[1]). This classification has been adopted as the "Clinical and Electroencephalographical Classification of Epileptic Seizures" by the International League Against Epilepsy (ILAE) and the World Health Organization. Since its adoption, it has gradually come to be utilized in the field of neuropsychiatry.

With this trend towards standardization as a base, we conducted a survey and studied its results in order to obtain a clinicostatistical picture of the actual state of epileptic patients at the Department of Neuropsychiatry of the Yamaguchi University School of Medicine.

METHODS AND MATERIALS

Of the 1095 patients who were seen at the Out-patient Clinic of the Department of Neuropsychiatry of the Yamaguchi University School of Medicine during 1976, the 195 who were diagnosed as epileptics were selected as subjects and clinico-statistical studies were made on their sex ratio, age distribution, clinical picture, clinical course and so forth.

RESULTS

The number of epileptic patients, 195, accounted for 17.8 per cent of the 1095 persons who were seen for psychiatric and neurological consultations and examinations during the year. Of the 195 patients, 186 were out-patients and 9 in-patients (Fig. 1).

The age composition of the epileptic patients was 10 patients under 10 years of age, 87 in the 11-25 year range, 61 in the 26-40 year range, 35 in between 41-60 years of age and 2 who were over 61 years of age.

Epilepsy was found to be slightly more common in the male than in the female (107 : 88) with a ratio 100 to 82.2 (Fig. 2).

With respect to the length of treatment, 24 were treated for less than 1 year, 49 for 1 to 4 years, 56 for 5 to 9 years, and 66 for 10 years or longer (Fig. 3).

Case histries indicated that the diesease developed at 4 years of age or less in 26 patients, between the age of 4 to 10 years in 45, between 11 to 20 years of age in 84, between 21 to 40 years of age in 34 and after 41 years of age in 6 (Fig. 4). These figures show that the onset of symptoms occurred commonly before the age of 40 and that in the vast majority of the cases the initial symptoms occur in the period between

Fig. 1. Composition of patients (1976)

Diagnosis	Number of patients (%)
Epilepsy	195 (17.8%)
Out-patients	186
In-patients	9
Psychoses other than epilepsy	900 (82.2%)
Total	1095

Fig. 2. Age and sex distribution

Age in years	Male	Female	Total
Below 10	6	4	10
11-25	48	39	87
26-40	30	31	61
41-60	22	13	35
Over 61	1	1	2
Total	107	88	195

Fig. 3. Period of treatment for patients at this department

Period (years)	Number of patients
Below 1	24
1-4	49
5-9	56
Over 10	96
Total	195

Fig. 4. Age at the onset of the disease

Age in years	Number of patients
Below 3	26
4-10	45
11-20	84
21-40	34
Over 60	6
Total	195

11 and 25 years of age.

The 195 epileptic patients were classified by the "Clinical and Electroencephalographical Classification of Epileptic Seizures" of the ILAE and a comparison was made by dividing the patients into two groups depending upon the age of onset; one group who experienced the onset of epileptic symptoms before 20 years of age and the other group in which onset occurred at 21 years of age or older. The unclassifiable cases numbered 28 among those under 20 years of age and 12 among those aged 20 years or older, while the classifiable cases numbered 123 among those under 20 years of age and 32 among those 20 years or older.

Furthermore, the number of cases of generalized epilepsy was 56 among those under 20 years of age and 5 among those aged 20 years or older, while the cases of primary generalized epilepsy numbered 55 among those under 20 years of age and 5 among those aged 20 years or more.

As for secondary generalized epilepsy, one case was found among those under the age of 20 years, but not a single case was found among those aged 20 years or older.

The number of cases of partial epilepsy was 67 among those under 20 years of age and 27 among those above 20 years of age (Fig. 5).

Fig. 5. Classification of patients on the basis of the classification of the Interational League Against Epilepsy

Classification	Number of patients		Total
	Under 20 years of age	Above 20 years of age	
Classifiable cases	123	32	155
Generalized epilepsy	56	5	61
Primary generalized epilepsy	55	5	60
Secondary generalized epilepsy	1	0	1
Partial epilepsy	67	27	94
Unclassifiable cases	28	12	40

Fig. 6. Clinical effects on seizure

Classification	Completely controlled	>75%	>50%	Unchanged	Aggravated	Uncertain
Total cases	71	85	29	1	1	6
Unclassifiable cases	17	17	5	0	0	3
Classifiable cases	54	68	24	1	1	3
Generalized epilepsy	33	16	7	1	0	1
Partial epilepsy	21	52	17	0	1	2

Fig. 7. Complicated diseases and symptoms

Diagnosis	Number of cases
Mental subnormality	36
Epileptic personality diseases (epileptic psychoses)	22
Cerebral palsy	10
Probrem child	3
Cerebral arteiosclerosis with hypertension	1
Miscellaneous	7
Total	79

In order to investigate the effectiveness of clinical treatment on epileptic seizures we divided patients in six grades for study. The results were evaluated as "completely controlled" when no seizure had appeared in the past several years, as "over 75% controlled" when several incomplete seizures had appeared in the past several years or one seizure had appeared in the past several years, as "over 50% controlled" when several seizures had appeared in the past several years and as

"less than 50% controlled" when one seizure had appeared within the past year.

Besides this classification scheme the patients were also assessed as "unchanged" when suppression of seizure was not observed following treatment, as "aggravated" when the patient's condition became aggravated after treatment and as "uncertain" when it was impossible or difficult to judge the effect of treatment. The results in Fig. 6 show that altogether, there were 156 patients in the "completely controlled group" and "over 75% controlled group".

When the manner in which the patients adapted themselves to society, that is, the problem of how they functioned at home, in schools or at places of work was examined, 151 showed satisfactory adaptation and 44 had problems in one form or another among the 196 patients. Such maladaptation may be attributed to complications due to mental subnormality (28 patients), marked change in personality due to epilepsy (12), epileptic dementia (1) and unknown causes (3).

An enumeration of the diseases or symptoms found in association with epilepsy revealed that mental subnormality in was exhibited by 36 patients, epileptic personality or epileptic psychoses in 22, cerebral palsy in 10 and "restlessness" in three patients being treated as problem children, the last-mentioned three all being epileptic patients under the age of 15 years (Fig. 7).

In addition, there was one case which was complicated by hypertension and showed cerebral arteriosclerosis and seven other miscellaneous cases.

DISCUSSION

The subjects of the present investigation consisted merely of patients who recieved medical consultation and treatment at the Department of Neuropsychiatry of the Yamaguchi University School of Medicine, therefore it is clearly not an epidemiological or clinico-statistical study on epilepsy in the city of Ube, the seat of our clinics or in Yamaguchi Prefecture.

The type of care that patients in our study recieved varied greatly. In the case of patients assessed as completely controlled, treatment was often entrusted to the physician in the patient's neighborhood. Infants and small chidren were recieving medical examination and treatment at the Department of Pediatrics of this university in many cases, and those with epileptic seizures stemming from organic brain diseases were rece-

iving medical treatment at the Department of Neurosurgery of this university.

A breakdown of the number of patients by sex gives a ratio of male: female=100 : 82.2 which is in close agreement with the results of other workers (Sato, 1963[2]), Leibowitz et al., 1968[3]). In sharp contrast, however, Conrad has claimed that if only genuine epilepsy is considered then there is no difference in frequency of epielpsy by sex (Conrad, 1940[4]). The higher incidence of epilepsy among males is probaly due to the slightly higher birth ratio of males in the population and also to the fact that males are more likely to sustain brain damage at birth.

When the period of treatment for epileptic patients of our department is examined, it is found that there are 122 patients (62.6%) who have been visiting this hospital for more than five years; among these patients 66 (33.8%) have been receiving treatment for more than 10 years. These findings vividly depict the outstanding feature of epilepsythat it is a chronic disease.

With regards to the age of onset, patients that developed epilepsy before 20 years of age accounted for 79.5% of the total, with 71 cases (36.4%) occuring in patients 10 years of age and 84 case (43.1%) in patients between 11 and 20 years of age.

However, the number of cases in which the onset of the disease occuerred after 20 years of age is by no means insignificant. That there were 40 cases (20.5% of the total) of so-called delayed epilepsy should be well noted.

These figures are generally in agreement with the reports of many researchers (Lennox and Lennox, 1960[5]), Sato, 1964[2]), Leibowitz et al. 1968[3]).

With regard to the question of why there were such a large number of unclassifiable cases reveral reasons can be mentioned. Sometimes the type of seizure was not clear. In other cases, no typical EEG pattern was observed due to the effect of anti-convulsants having been administered over many years. Sometimes a clear-cut history statement of the patient and his family was not available. Finally, there were not a few cases in which the additional complicating factor of mental subnormality was obseved in the patient himself and his family.

When we studied the relationship between the age of onset and classifiability we found that among the classifiable cases, there were 61 cases of generalized epilepsy; of these 56, by far the majority, had developed the disease before 20 years of age and almost all of them are classified as primary generalized epilepsy.

Of the 94 cases of partial epilepsy, 67 patients developed the disease before the age of 20 and 27 patients developed the disease after 20 years of age. These results are in close agreement with the report of Gastaut et al. (1975)[6].

As for the effectiveness of clinical treatment of epileptic seizures, in 71 cases (36.4%) the seizures were completly controlled and in 85 cases (43.6%) the seizures were 75% controlled or more; combining the two categories it can be seen that clinical treatment was effective in 80 per cent of the cases.

However, among that group of patients whose illness was classified as controlled 75 per cent or more there were many cases in which the patient's intemperance in daily life and irregularity in taking drugs were deemed as causative of the seizure. This shows that guidance in daily life, education on "epilepsy" and giving correct knowledge on epilepsy to epileptic patients and their families are the first steps in treatment.

Epileptic pharmacotherapy is generally said to be effective in 70 to 80 per cent of the patients (Fukushima, 1974[7]); in this respect, treatment appears to be generally satisfactory. On the other hand, however, so-called intractable cases or cases where satisfactory therapeutic effects cannot be obtained account for as many as 20 per cent of the total, showing that there is a limit in the effectiveness of pharmacotherapy in treating epilepsy and that pharmacotherapy of epilepsy, as it stands now, is not yet complete.

When the effectiveness of clinical treatment was examined with respect to the type of seizure, it was found that seizures of partial epilepsy were particularly difficult to control.

Of the 94 patients who suffered from partial epilepsy, 21 (22.3%) had their seizures completely controlled; with the inclusion of cases in which the seizures were controlled 75 per cent or more, the control rate comes to 77.7 per cent.

In addition, mention should be made that there was one case in which therapy proved not only ineffective but in fact aggravated the patient's condition.

A review of all epileptic patients on how they adapted themselves to society should that 44 (22.6%) had problems in one form or another.

While the "seizure" is, needless to say, one of the main symptoms of epilepsy, epileptic patients also show many psychotic symptoms in association with seizures; for example, epileptic character changes which should be included in the category of epileptic psychoses, mental subn-

ormality and others. It is these psychotic symptoms rather than the seizure itself that make difficult the patient's social life at home, school and place of work in many cases.

Moreover, a further complication is that prejudice and misunderstanding of epilepsy exist in the environment surrounding the patient and can often be found even in the patient himself and his family.

There are not a few cases in which these prejudices and misunderstandings act synergistically with an epileptic character change lacking in flexibility to force the patient to follow the path to catastrophy.

Thus, in treating epileptic patient, care should be expended not only to control the seizures but also to ensure adequate treatment of other psychotic symptoms and to provide complete day to day medical care covering the overall life of the patient.

SUMMARY

We presented a clinico-statistical picture of epileptic patients who had been seen at the Department of Neuropsychiatry of the Yamaguchi University School of Medicine during the year 1976.

Of the 1095 patients who were examined in this department, 195 (17.8%) were diagnosed as epileptic.

The age composition of the patients was as follows: 10 patients were under 10 years of age, 87 were 11-25 years old, 61 were 26-40 years old, 35 were 41-60 years old and 2 patients were over 61 years of age.

The sex ratio was 107 : 88, indicating that there was a tendency for epilepsy to be slightly more prevalent in men.

With regard to the length of the period of treatment, it was less than 4 years in 73 patients, 5 to 9 years in 56 patients and 10 years or longer in 66 patients.

Regarding the onset of the disease, 155 patients (79.5%) developed the disease before 20 years of age while 40 patients (20.5%) developed the illness after 21 years of age.

When the type of seizure was classified according to the system of the International League against Epilepsy 61 patients were diagnosed as having generalized epilepsy and 94 patients as having partial epilepsy; among these patients the cases in which the disease developed before the 20 th year of age numbered 56 for the former and 67 for the latter.

Pharmacotherapy was deemed as effective in 80 per cent of the cases, but in about half of these cases the seizure were not as yet con-

trolled completely.

Considering how well the patients adapted themselves to society 44 patients experienced difficulties in adjustment in one form or another.

This high level of maladjustment is possibly attributable to the additional complicating problems of mental subnormality in 36 patients and epileptic personality disorders in 22 patients.

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