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Original Research Article - Etiology, clinical features and outcome of status epilepticus at a tertiary care hospital in Nepal

Dr. Atul Baid
Assistant Professor, Department of Medicine, Mata Gujri Memorial Medical College and Lions Seva Kendra Hospital, Kishanganj, Bihar, India

Abstract
Objective: Our study was to evaluate the demographic and clinical characteristics, establish etiological spectrum and outcome of patients with status epilepticus.
Methodology: A total of 80 patients with status epilepticus were enrolled in this study. A detail clinical history and examinations were taken to all patients. Uday Pareek Scale was used to know the socioeconomic status. Patient's vital parameters such as pulse rate, blood pressure, temperature, and respiratory rate were also noted. Neurological assessment was also performed such as GCS, cranial nerve examination including fundoscopy, motor examination, meningeal signs, and cerebellar sign. The duration, type and frequency of seizures at presentation were determined as per detailed interview of eyewitness and/or accompanying person. All patients were treated according to the standard guidelines, clinician's judgment and the availability of drugs. Drug of choice were phenytoin, diazepam and sodium valproate.
Results: Data was analyzed by using statistical methods. Mean ± standard deviation was calculated and p value was taken less than 0.05 for significant differences.
Conclusions: Patients with middle socioeconomic status and young age group were more affected with SE. Neurocysticercosis and CNS infection was commonest causes of SE. Poor drug compliance was commonest precipitating factor and convulsive status epilepticus was commonest type of SE. Independent predictors of death in SE were low GCS (<8) at presentation, use of second line drug and respiratory failure.

Keywords: status epilepticus, socioeconomic status, clinical profile

Introduction

Status epilepticus a grave medical and neurological emergency is a condition characterized by anomaly persistent seizures. It remains an important clinical problem. Despite decades of clinical and basic science research in this field, little progress has been made in preventing the occurrence of status epilepticus. Treatment of status epilepticus is not uniformly successful and the condition remains associated with a high rate of morbidity and mortality.

The definition of SE has been changing over time. It is based on the clinical manifestation of continuing seizure activity and/or incomplete recovery of consciousness between seizures for a ''particular duration''. The criterion of duration is controversial and stills an evolving issue. The duration of what is accepted as status epilepticus has been shrinking progressively from 30 min in the guidelines of the Epilepsy Foundation of America's Working Group on Status Epilepticus [1] to 20 min, to 10 min in the Veterans Affairs Status Epilepticus Cooperation Study [2], and most recently, a length of 5 min was proposed [3]. This trend indicates the need to find an ''operational'' definition of status epilepticus- eg, a time when the patient should be treated as having status epilepticus, even if not all such patients are in established status epilepticus.

Status epilepticus is common and associated with significant mortality and complications. It has been estimated that up to 150,000 cases of status epilepticus and 55,000 deaths from it occur annually in the United States [4]. Several prognostic factors are important in predicting outcome of status epilepticus: cause, age, seizure duration, and response to treatment [5]. Many types of epileptic seizures have been described, and therefore, it follows that there are many types of status epilepticus. This has led to complex classification of status epilepticus [6]. However using electroclinical features, status epilepticus may be classified simply by the presence of motor convulsions (convulsive status epilepticus) or their absence (non-convulsive status epilepticus). They may be further divided into status epilepticus that affects the whole brain (generalized status epilepticus) or only part of the brain (partial status epilepticus).

The diagnosis of status epilepticus is straightforward in patients with witnessed generalized convulsive tonic-clonic seizures. However, status epilepticus may not be considered in patients who have progressed to the non-convulsive phase of status epilepticus and present in coma. All comatose patients should therefore be carefully examined for evidence of minor twitching, which may involve the face, hands, or feet, or may present as nystagmoid jerking of the eyes.

In many patients with a preexistent seizure disorder, no obvious precipitating factor can be determined. A fall in serum levels of antiepileptic drugs due to poor compliance with medication or too due to increased clearance associated

with concurrent illness has been implicated in some patients. One third of adult patients with a new diagnosis of epilepsy may first present while in status epilepticus [7]. The reported causes of status epilepticus are anticonvulsant withdrawal or non-compliance, metabolic disturbances, drug toxicity, CNS infection, CNS tumors, refractory epilepsy and head trauma. There are discrepancies in the clinical profile, etiology and outcome of status epilepticus in different parts of the world [8]. Epidemiologic research on epilepsy has been developed relatively recently. Several studies have been performed in industrialized as well as in developing countries. Published results are often discordant, even in simple descriptive studies. Also data on epidemiology of status epilepticus in tropical and developing countries are not satisfactory.

Various forms of traditional treatment are widely practiced in all casts among Hindus as well as Buddhists. This study may bring into focus the natural history, clinical and etiological spectrum, potentially preventable risk factors, common antecedents and the final outcome of the status epilepticus in our hospital. It may also highlight the possible significance of certain social and environmental factors that might have an influence on the disease promotion such as drug and substance abuse, suicidal poisoning, poverty, illiteracy, vector –borne disease etc.

Objective of our study was to evaluate the demographic and clinical characteristics, establish etiological spectrum and outcome of patients with status epilepticus.

Materials and Methods

This prospective, descriptive cross sectional study was conducted in B.P. Koirala Institute of Health Sciences (BPKIHS), Dharan, Nepal during a period from March 2006 to May 2007. A total of 80 patients with status epilepticus presenting at the emergency department of BPKIHS were enrolled. The attendants/entire subjects signed an informed consent approved by the institutional ethical committee of BPKIHS, Dharan, Nepal was sought. Data was collected on the basis of inclusion and exclusion criteria of this study.

Inclusion criteria of this study was patients with age >16 years, continuous seizure for ≥ 5 minutes or recurrent seizure without regaining consciousness, clinical symptoms including alteration of mental state, abnormal behavior, and perception disturbances or consciousness impairment without overt convulsions and in whom EEG showed epileptic form activity. Exclusion criteria were patients and or guardian refuse to participate in this study.

Methods

A detail clinical history and examination was taken to all patients including age, gender, residence, marital status s and socioeconomic classes. Socioeconomic status was made according to Uday Pareek Scale. The duration, type and frequency of seizures at presentation were determined as per detailed interview of eyewitness and/or accompanying person. Additional information was collected from the patient or accompanying persons whenever possible. This included past history of epilepsy, status epilepticus, drug therapy and compliance with anticonvulsants. History of alcohol abuse including the duration and type of alcohol consumed was also recorded. In any event of poisoning, the type of poison consumed was confirmed by the container/packet of the poison brought along with the patients. And detail old medical records were reviewed whenever available.

Clinical examination: it includes comprehensive neurological assessment, general physical examination includes: presence of neurocutaneous markers such as café au lait spots, neurofibromas, adenoma sebacium, shagreen patches, subcutaneous nodules, spina bifida, and ungula tubers if any. Patient's vital parameters such as pulse rate, blood pressure, temperature, and respiratory rate were also noted. Neurological assessment was also performed such as GCS, cranial nerve examination including fundoscopy, motor examination, meningeal signs, cerebellar sign. Skull and spine were also examined. This is followed by examination of the other system.

Investigation was also performed such as blood sample examination, arterial blood gas analysis and CSF analysis. Radio imaging included CT Scan of Head, MRI of head was performed. Electroencephalography was also performed.

Treatment: all patients were treated according to the standard guidelines, clinician's judgment and the availability of drugs. Drug of choice were phenytoin, diazepam and sodium valproate. Neurological intervention was also performed if any patients required. ICU care and mechanical ventilation were also managed if any patients required.

Etiology, outcome and complications were also analyzed. Outcome of status epilepticus was made at the time of discharge or death. At the time of discharge detailed re-examination was performed. Cognitive status was examined by the use of Folestein Mini Mental Status Examination.

Statistical Analysis

Data was analyzed by using statistical methods. Mean ± standard deviation was calculated and p value was taken less than 0.05 for significant differences.

Results

This study was included 80 cases (43: males and females: 37) of patients with status epilepticus of age group 16 to 80 years. Male and female M: F ratio was 1.16:1.

The age distribution of the cases of status epilepticus ranged from 16 to 80 years, with mean of 37.38 (SD 18.37) years. About 70% (54) of the cases were between 16-40 years of age. The cases came from 12 districts of Nepal and 2 districts of India. Out of 12 districts of Nepal the majority were from Sunsari 47.5 % (38/80), Morang 17.5% (14/80) and Jhapa 15% (12/80). Some of the districts are located more than 200 kms away (Dhanusa, Chitwan) or takes a few days of travel (Bhojpur, Taplejung) to reach BPKIHS.

Majority of the cases (35%) were house wives which constituted 75.6% (28/37) of the totak females. Ten (12.5%) cases were unemployed and there were also 1 driver and 1 rikshawpuller.

According to the Uday Pareek Scale the highest number of cases came from middle class (50%) followed by the lower socioeconomic class (37.5%). There were no cases from the upper socioeconomic class.

Of the 80 cases, 16(20%) had history suggestive of alcohol issue. The average daily intake of alcohol was 256.25 ml with a range from 50 ml to 600 ml per day.

History related to epilepsy

Past history of epilepsy was present in 25 (31.3%) cases of which one also had history of status epilepticus. out of these, 23 (92%) had history suggestive of generalized seizure and 2 (8%) had partial seizure. Of the 25 known epileptic cases, 21 (84%) were receiving anti-epileptic drugs, 9 on Phenytoin, 9 on Carbamazepine, 2 on Sodium Valproate and 1 on Phenobarbitone. All of the 4 cases not on treatment belonged to lower socioeconomic class. One of them used to visit a faith healer during convulsions because seizure was attributed to supernatural phenomenon by her family members. Other three cases had never seeked medical advice because of social stigma.

As per our definition, 85% (18 cases) had poor drug compliance with antiepileptic drugs. Family history of epilepsy was present in 1 patient.

Clinical manifestations

As per definition the type of SE was convulsive status epilepticus in 86% (69/80), epilepsia partialis continua in 10% (8/10) and non-convulsive status epilepticus in 4% (3/80) of the cases.

Table 1: Clinical features of patients with status epilepticus.

Clinical features	Number of patients	Percentage
Abnormal body movement	77	96.3%
Fever	18	22.5%
Poisoning	10	12.5%
Altered sensorium	73	91.3%
Papilloedema	18	22.5%
Motor weakness	72	90%
Meningeal signs	6	7.5%

Abnormal involuntary movements of the body or part of the body being the most common presentation was present in 96% (77) followed by altered sensorium in 91.3%. fever was complained by 18 (22.5%) cases and 10 (12.5%) cases presented with the history of ingestion of poison. Among the patients who presented with poisoning, 2 had taken organophosphorous compound while 8 had taken organochlorine. All the cases of poisoning were due to suicidal intention.

GCS at presentation ranged from 3 to 15 with a mean of 9.01 (SD 3.2). 27 (34%) cases had GCS $\leq$ 8. The mean time interval between the onset of seizure and presentation to BPKIHS was 19.5 hours (SD 19.7) and ranged from 1 to 72 hours. Majority of the cases presented between 24-48 hours. Papilloedema was present in 18(22.5%) cases. Neurocutaneous marker was found in 4(5%) cases was all being subcutaneous nodule. Motor weakness was present in 72 (90%) cases at presentation but signs of meningeal irritation were present in only 6 (7.5%) cases.

Laboratory investigations

Hemoglobin, total and differential leukocyte count (TLC & DLC), random blood sugar, serum urea, serum creatinine, serum electrolytes, seru calcium, arterial blood gas analysis and CSF analysis were done as per requirement and feasibility.

Anemia was present in 17.5% (14/80) cases and leucopenia in 1.2% (1/80) cases. 57 (71.2%) of the cases had leucocytosis. 15 (18.7%) of the cases had abnormality in renal function tests. Hyponatremia was present in 5 (6.2%) of the cases.

Radio imaging

Radio imaging was done in 67 (83.7%) cases; CT scan (Head) in 31 (46.3%) and MRI (Head) in 36 (53.7%). Commonest CT abnormality was ring enhancing lesion (32%) and in MRI it was neurocysticercosis (28%). CT/MRI was normal in only 30% (20/67) of cases.

Electroencephalography

EEG was done in the post ictal phase in 44 (55%) cases of which 41 (93%) cases had epileptiform activity. EEG was normal in 1 case each of granuloma, epilepsy and organochlorine poisoning.

Treatment

All cases received with inj. Phenytoin and Inj. Diazepam were administered in 78 patients. Two cases of non-convulsive epilepticus did not receive Diazepam because of clinician's judgment based on the absence of convulsions at presentation and the diagnosis of NCSE was made only after EEG. Seizures in 66 cases were controlled with Phenytoin and Diazepam but 14 (17.5%) cases additionally required Sodium Valproate. These 14 cases included 7 of organochlorine poisoning, 4 cases of epilepsy, 1 each of cerebral metastasis, uremic encephalopathy and hemorrhagic stroke. Neurosurgical intervention was performed in 4 cases: 3 subdural hematoma and 1 glioma.

14 (17.5%) cases were mechanically ventilated. These included 8 poisoning, 2 meningoencephalitis, 1 each of hemorrhagic stroke, tuberculoma, and epilepsy and in 1 the etiology was unknown.

Complications

Table 2: Complications of patients with status epilepticus.

Complication	Number of patients	Percentage
Persistent neurological deficit	15	18.8%
Aspiration pneumonia	14	17.5%
Respiratory failure	14	17.5%
Cognition impairment	12	15%
Metabolic acidosis	9	11.25%

Metabolic acidosis: arterial blood gas analysis was performed in 38 (47.5%) cases. The mean Ph was 7.28 (SD 0.11) and ranged from 6.9 to 7.4. metabolic acidosis was present in 9 cases of which 2 cases had raised serum creatinine and 1 had hyperkalemia. 5(55.5%) of the patints who had metabolic acidosis died.

Aspiration pneumonia

14 (17.5%) patients had aspiration pneumonia. 10 of which had respiratory failure and required mechanical ventilation and 8 died. 10 cases of aspiration pneumonia had GCS < 8 at the time of presentation.

Respiratory failure
Respiratory failure was present in 14 (17.5%) patients. All required mechanical ventilation and more than 50% (8) died. Poisoning was the etiology of SE in 8 (6 organochlorine, 2 organophosphate) of the cases.

Cognitive impairment
12 (15%) cases had cognitive impairment at the time of discharge. Among these there were 9 (75%) cases of convulsive status epilepticus and 3 (25%) cases of non-convulsive status epilepticus.

Etiology
The etiology of the SE cases was ascertained by the findings of the clinical examination and investigation. An underlying etiology was found in 79 cases. The major etiology was infectious 25 (31.3%) followed by epilepsy 17 (21.3%), toxicological 12 (15%) and cerebrovascular 9 (11.3%). However among 25 cases with past history of epilepsy, 8 were found to have a definite cause of seizure after investigations.
Among the 3 developmental anomalies, there was 1 case each of open lip cesencephaly, cerebral hemiatrophy and open lip schizencephaly. There were 7 cases due to neoplastic cause: 5 of cerebral metastasis and 2 glioma. The 12 etiological causes consisted of 8 due to organochlorine poisoning, 2 organophosphate poisoning and 2 alcohol intoxication. The 3 metabolic causes included 1 each of uremia, hyperglycemia hyperosmolar non-ketotic coma and hypoglycemia.

Precipitating factors
In the 80 SE cases an obvious precipitating was ascertained in 26 (32.5%) cases. The commonest precipitating factor was poor compliance to antiepileptic drugs.

Outcome

Table 3: Outcome of patients with status epilepticus.

Outcome	Number of patients	Percentage
Improved	67	83.8%
Died	11	13.8%
LAMA	2	2.5%

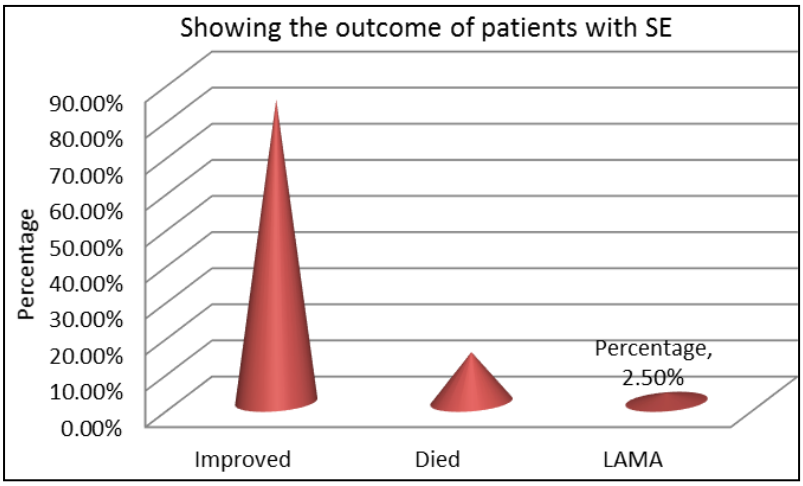

Fig 1: Outcome of patients with status epilepticus.

Among the 80 patients, 67 (83.8%) patients improved and were discharged, 11 (13.8%) died and 2 (2.5%) left against medical advice.
Among the 67 cases who improved, 52 (77.6%) had complete recovery. Duration of hospital stay ranged from 1 to 27 days and mean duration was 7 days (SD 4.96). Seven of 11 cases that expired were due to poisoning (5 organochlorine, 2 organophosphate), 1 each of brain metastasis, hemorrhagic stroke and uremic encephalopathy and in 1 case the etiology could not be established. All SE cases who died had convulsive status epilepticus. 90 percent (10/11) cases who expired had GCS <8 at presentation.

Association of factors for poor outcome
78 cases were included in the analysis as 2 cases who left against medical advice were excluded as the final outcome could not be ascertained.

Table 4: Risk factors for death in patients with status epilepticus (multivariate analysis by backward conditional method).

Variable	Odds Ratio	95.0 % C. I.	P value
Respiratory failure	4	2 – 571.7	0.014
Use of secondary drugs	18	1.4-233	0.027
GCS < 8 at presentation	50	1.7-1453.7	0.023
Lower socioeconomic class	10	0.7 – 137.2	0.092
Constant	0		0.002

For association of factors for death the following factors were found to be significant ($p<0.05$) in univariate analysis: female gender, lower socioeconomic class, poisoning as etiology, GCS < 8 at presentation, aspiration pneumonia, respiratory

failure, metabolic acidosis and need for second line drugs for seizure control.

Logistic regression models were fitted including the exposures of interest that were significantly ($p<0.2$) associated in the univariate analysis. GCS <8 at presentation (OR 50), use of second line drug (OR 18) and respiratory failure (OR 4).

For the association of factors for persistent neurological deficit, past history of epilepsy was found to be significant in univariate analysis.

Logistic regression models were fitted including the exposures of interest that were significantly ($p<0.2$) associated in the univariate analysis. No variable was found to be significant in the final model. For the association of factors for cognitive impairment in the univariate analysis the following were found to be significant ($p<0.05$): past history of epilepsy and respiratory failure. Logistic regression models were fitted including the exposures of interest that were significantly ($p<0.2$) associated in the univariate analysis. No variable was found to be significant in the final model.

Discussion

Status epilepticus is an important neurological emergency as it causes significant morbidity and mortality. From Nepal, as far as we are aware, this is the 1st study on the presentation and outcome of SE cases. BPKIHS with a tertiary level hospital serves as referral center for whole of the eastern region of Nepal. We documented consecutive SE cases prospectively over a one year period in an attempt to document the socio-demographic profile, etiological spectrum, clinical manifestations and outcome.

During the study period of one year, 80 cases of status epilepticus presented in the emergency department. The commonest etiology of status epilepticus in our study was central nervous infection (30%) which is similar to that reported from India by Murthy *et al* [8] in which central nervous infection was the etiology in 52% of the cases. In our study among the 25 cases with CNS infection neurocysticercosis was the most common etiology. Neurocysticercosis was also noted to be the major cause of epilepsy. A previous small study from Hongkong [9] on 8 British Gukha soldiers reported 7 to be suffering from neurocysticercosis. A recent epidemiological study reported an astonishingly high rate of taeniosis of 50% from an area in Nepal populated by pig rearing farmers [10]. in addition to poor sanitation, unhealthy pig rearing practices, low hygienic standards, and unusual customs such as consumption of raw pork is an additional factor contributing to the spread of taeniosis in Nepal. Therefore, control of taeniasis would be necessary to reduce the incidence of epilepsy and SE in Nepal.

Next to infections the 2 other major etiologies in our study were epilepsy and poisoning. Past history of epilepsy was present in 25 cases, however only 21 were on treatment of which 18 were not compliant with treatment. Non-compliance was also the commonest precipitating factor and this has also been reported in other studies. In study reported by Bozic *et al*. [11] and Garzon *et al* [12] status epilepticus was primarily caused by discontinued or irregular antiepileptic treatment in patients with confirmed epilepsy. Similarly Towne *et al* [13]. have reported poor compliance to be the precipitating factor of status epilepticus in 22% of the cases in their series.

In Nepal as in other developing countries epilepsy continues to be a social stigma and defers patients to seek proper treatment. Also, the belief in supernatural powers and faith healers prevent them from seeking appropriate treatment. Four epileptic patients in our series were not on treatment because of social stigma and/or unawareness about the true nature of their illness. One of them used to visit a faith healer for the convulsions. This has also been reported in a community based survey in Morang district [14]. where various forms of traditional treatment for epilepsy were widely practiced in all casts among Hindus as well as Buddhists. Thus there is need for improving awareness and educating the community to change their health seeking behavior in epilepsy.

It is important to note that 2 patients with past history of epilepsy continued their occupation (bus driver and a rikshawpuller) and placed not only themselves but also the commuters at high risk of fatal accidents. This finding emphasizes the need for adequate councealing during treatment. Although uncommon in developed countries intentional self-poisoning is an important cause of difficult-to-manage seizures in Asian countries. This has been reported from Srilanka by Roberts *et al*. [15] as an important cause of refractory status epilepticus. In our series, toxicological causes accounted for 15 % (12/80) of the cases but responsible for 63% (5/8) of the case fatality. Organophosphate compounds which are easily available and can be purchased over the counter is the most common poisoning in Nepal [16].

Poisoning was not found to be a cause of SE in the series from developing countries [17].

In the developed countries the most common etiology was cerebrovascular events acoounting for 15% of the cases [17]. However in our series CVA accounted for only 9% of the etiology. Majority of the cases (68%) in our series were young adults (< 40 years) with a slight male preponderance (M: F=1.16:1). This is similar to an Indian study reported by Murthy *et al*. [18] in which 66% of the cases were young adults (<40 years). This could be explained by some causes of status epilepticus which are more frequent in the active age group such as alcohol abuse and with drawl, young people more involved in agriculture and farming thereby having better access to insecticides and pesticides.

Studies from the West [19] revealed a predominantly elderly population presenting SE with the majority of the cases being more than 60 years old.

We also found that the majority of cases were from the lower socioeconomic class. It is unlikely that SE cases from the higher socioeconomic class would attend an alternative hospital instead of BPKIHS. The eastern region does not have any other tertiary health care center or private referral hospital with facilities as in BPKIHS. Greater incidence of status epilepticus among the lower socioeconomic class can be attributed to environmental factors rendering them susceptible to diseases like meningoencephalitis, neurotuberculosis, neurocysticercosis and brain abscess. Financial constraints, illiteracy and unawareness may be responsible for unaffordability and/or poor compliance with antiepileptic drugs. Lack of education also plays a vital role in non-adherence to systematic antiepileptic treatment.

Among those cases in whom an identifiable precipitating factor was present in our series, alcohol withdrawal was

present in 7.6% of the cases. This is also akin to the previous report by Pike *et al*, [20]. in Finland where alcohol withdrawal was the precipitating factor in 7.3% cases.

Increased alcohol intake and dependence in the region was found in the study published by Jhingan [21]. This highlights the tremendous influence of social, cultural and religious factors which are amenable to education programmes.

The mean and median time interval between the onset of seizure and presentation to our hospital was 19.63 (SD: 19.67) hours and 8 hours respectively. Only 3.7 % (3/80) cases presented within the first hour of onset of symptoms and they were from the nearby districts of Morang, Jhapa and Sunsari. In underdeveloped countries like Nepal consisting mainly of rural areas, transportation of patients with SE to centers with adequate infrastructure and resources to treat SE is also major problem. A long latency between the onset of status and initiation of appropriate treatment has already been noted in the series reported from developing countries. In Snegal study [22] on SE series by Mhodj *et al*., the mean latency was 16.6 hours and only 4.6 % of patients arrived at the hospital within 6 hours of onset of symptoms. In another series by Murthy *et al*. [4], the mean latency was 18.02 hours and only 28% of patients presented within 3 hours of the onset of symptoms. In the same study, all the 23 (28%) patients with duration ≤ 3 h or less were residents of the city where the hospital is located. Access to specialist care is a major limiting factor in developing countries because of poor health infrastructure, connectivity, and delays in transportation. This is in contrast to what has been reported from the developed countries. In the Veteran affairs cooperative study by Treiman *et al*, [19]. in patients the mean duration at enrollment was 2.8 hours and in the series by Mayer *et al*, [23]. the mean duration of seizures before admission was only 1.3 hours. The educational and socioeconomic status of the local population and also the proximity of the hospital might have been the factors for their early arrival at the hospital.

In our series CT/MRI was done in 67 cases of SE and interestingly it was abnormal in up to 70 % of the cases. Hence in the diagnostic workup of patients with SE, radio imaging would be an important investigation which unfortunately is expensive and not easily available in most of the hospitals in the developing countries like Nepal.

Case fatality rate in our study was 14% (11/80) which is similar to that reported in the Indian study by Murthy *et al* [8] in which it was 13.5%. The case fatality in studies from the developed countries has varied from 6.6% to 9.3%. [24] The reason for higher mortality in our study as in other countries is probable the long latency between the onset of seizure and institution of treatment because of the problems in the developing countries already mentioned.

We also looked at independent risk factors associated with mortality. Low GCS (<8} at presentation, use of second line drug and respiratory failure were the independent predictors for increased risk for death. Increased time interval between the onset of the symptoms and institution of treatments, however was not an independent predictor of death in our series. This could be due to the small sample size.

However, the mortality reflected in our study may be underestimation of the true mortality in Nepal as the other hospitals in the region are not equipped with respiratory support or intensive care beds.

Even of the 86% who survived 18.8% and 15% were left with persistent neurological deficits and cognitive impairment respectively.

Limitations

Measurement of the level of anticonvulsant in blood couldn't be done due to lack of facility. Cases of non-convulsive status epilepticus may have been under diagnosed due to lack of awareness of emergency electroencephalography. And some patients didn't undergo radioimaging because of financial constraints.

Conclusions

Our study concluded that convulsive status epilepticus was commonest type of SE. Status epilepticus was commonly seen in middle socioeconomic status and young age group patients (<40 years). Commonest etiology of SE was central nervous system infection. Commonest infection etiology was neurocysticercosis. Commonest precipitating factor was poor drug compliance. Majority of cases were abnormal CT/MRI. Independent predictors of death in SE were low GCS (<8) at presentation, use of second line drug and respiratory failure.

Recomendations

Control programmes for taeniosis would help to decrease the incidence of status epilepticus. Proper counseling of epileptics is required to ensure improved drug compliance. And increasing access to hospitals with facilities for treating SE would help to decrease mortality.

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