CONVULSIVE STATUS EPILEPTICUS;
TO DETERMINE THE IN HOSPITAL MORTALITY

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ABSTRACT… Objectives: To determine the in hospital mortality of convulsive status epilepticus in a tertiary care facility. **Study Design**: Cross sectional study. **Place and Duration of Study**: Neurology ward, Jinnah Postgraduate Medical Centre, Karachi, Medicine Department of Peoples University Of Medical And Health Sciences Nawabshah from July 2015- Dec 2015. **Material and Methods**: All patients of either gender with age >15 years with status epilepticus, were included in the study. A detailed clinical history and relevant neurological examination was performed. All the patients who fulfill the inclusion criteria were enrolled in the study after informed written consent and explanation of the study protocol. All the information including in hospital mortality was entered on annexed proforma. All the patients were observed three to five days. **Results:** A total of 108 patients were included in this study fulfilling the inclusion criteria. The overall mean age of these patients was 31.3 ± 13.5 years. The age range of these patients was 16 to 76 years. History of epilepsy was found in 106 (93.5%) of the patients, 88 (81.5%) of the patients had status epilepticus in past, 56 (51.9%) of the patients had drug withdrawal, 20 (18.5%) of the patients had febrile illness and 2 (1.9%) of the patients had in hospital mortality. There was no statistical significance proportion difference was observed when compared gender, history of epilepsy and status of epilepticus in past by in hospital mortality (p-values >0.05). Statistical significance proportion difference (p-value <0.05) was found in age and in hospital mortality. **Conclusion:** We recommend further studies to reach the firm conclusion.

Key words: Status Epilepticus, Generalized Convulsive Status Epilepticus, Epidemiology, Mortality

INTRODUCTION

Status epilepticus is defined as a recurrent seizures without full recovery between continuous seizure activity or seizure for 30 minutes.[1,2] Annual incidence of ranges from 10-41 per 100,000 and it is estimated that worldwide there are 3 million annually.[3] The most common form and the life-threatening SE is generalized SE convulsive (GCSE). GCSE is characterized by continuous or paroxysmal tonic and / or clonic motor activity associated with cognitive impairment.[4] Refractory status epilepticus is defined as continued seizures after three antiepileptics had failed whereas nonconvulsive status epilepticus is characterized of typical seizure activity.[5] The illness and death of GCSE is higher and the relevant management or the underlying disease.[6]

A study from Thailand found looking at the outcomes of adults admitted with status epilepticus fund that nearly half of the patients (47.5%) had previously diagnosed neurological disorders and 30% had an established diagnosis of epilepsy of whom 90% had history of abruptly withdrew from their prescribed antiepileptic drug regime. The reported a mortality of 35% and permanent neurological deficit was developed in 30% of patients at hospital discharge.[7]

There is scarcity of local epidemiological data along with case fatality ratio and in hospital mortality in patients with convulsive status epilepticus in adult population. We aim to explore this issue, so that the results can be utilized in better management and treatment of the population.

MATERIALS AND METHODS

This Cross sectional study was conducted at the Neurology ward, Jinnah Postgraduate Medical Centre, Karachi, Medicine Department of Peoples University Of Medical And Health Sciences Nawabshah from July 2015- Dec 2015. All patients of either gender with age >15 years with status epilepticus, were included in the study. A detailed clinical history and relevant neurological examination was performed. All the patients who fulfill the inclusion criteria were enrolled in the study after informed written consent and explanation of the study protocol. All the information including in hospital mortality was entered on annexed proforma. All the patients were observed three to five days.

RESULTS

A total of 108 patients were included in this study fulfilling the inclusion criteria. The overall mean age of these patients was 31.3 ± 13.5 years as shown in figure-1. The age range of these patients was 16 to 76 years. Seventy six (70.4%) patients had age between 16 to 35 years as shown in figure-2. There were 60 (55.6%) males and female 48 (44.4%) patients as shown in figure-3.

History of epilepsy was found in 106 (93.5%) of the patients, 88 (81.5%) of the patients had status epilepticus in past, 56 (51.9%) of the patients had drug withdrawal, 20 (18.5%) of the patients had febrile illness and 2 (1.9%) of the patients had in hospital mortality as shown in Table-I.

There was no statistical significance proportion difference was observed when compared gender, history of epilepsy and status of epilepticus in past by in hospital mortality (p-values >0.05). Statistical significance proportion difference (p-value <0.05) was found in age and in hospital mortality as shown in Table-II.

Variables	n	(%)
History of epilepsy	106	93.5
Status epilepticus in Past	88	81.5
Drug withdrawal	56	51.9
Febrile illness	20	18.5
In hospital mortality	2	1.9

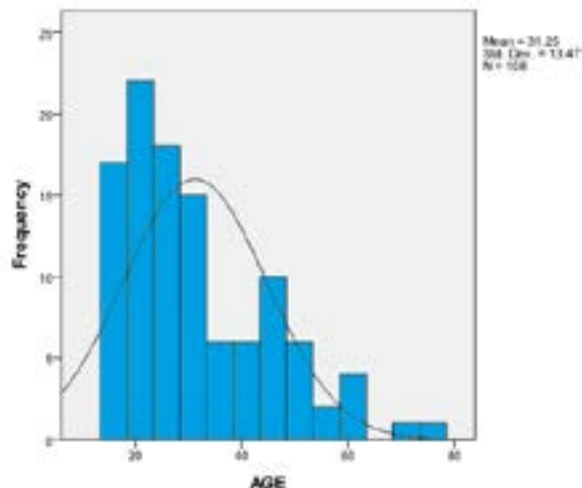Table-I. Distribution of patients according various parameters (N=108)

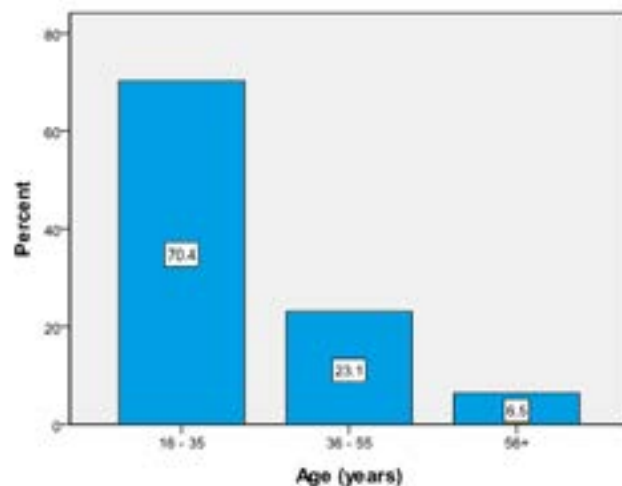Figure-1. Histogram showing the distribution of patients (N=108)
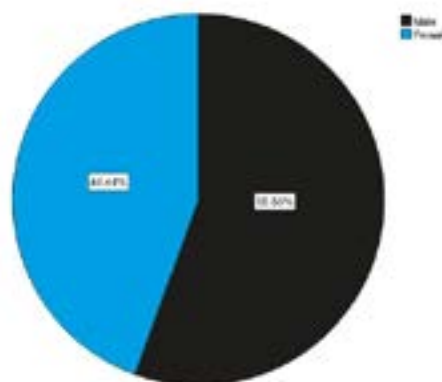

Figure-2. Distribution of age (N=108)

Figure-3. Distribution of gender (N=108)

Variables	In Hospital Mortality		P-values
Gender	Yes	No	
Male	2 (3.3)	58 (96.7)	0.20
Female	0	48 (100)	
Age			
16 to 35	0	76 (100)	
36 to 55	0	25 (100)	<0.01
>56	2 (28.6)	5 (71.4)	
History of epilepsy			
Yes	2 (2.0)	99 (98.0)	0.71
No	0	7 (100)	
Status of epilepticus in past			
Yes	2 (2.3)	86 (97.7)	0.49
No	0	20 (100)	

Table-II. Distribution of patients according to various parameters (N=108)

DISCUSSION

Our study included a sample of 108 patients with mean age 31.3 ± 13.5 years and 60 (55.6%) males. The history of epilepsy was present in 106 (93.5%) of the patients, 88 (81.5%) of the patients had status epilepticus in past, 56 (51.9%) of the patients had drug withdrawal, 20 (18.5%) of the patients had febrile illness. The results found that only 2 (1.9%) of the patients had in hospital mortality. On secondary analysis of the data we observed statistical significant difference of age and not the history of epilepsy and status of epilepticus in past for the in hospital mortality results.

Koubeissi and Alshekhlee assessed the in hospital mortality linked with generalized convulsive status epilepticus (GCSE), and predictors of death in a large US cohort. The study recruited a huge sample in their analysis some 11580 patients. The 39 ± 25.6 years was mean age and 3 days median duration of stay was 3 days.in our study predominant were male sex (53.4%) and white race (42.4%) cases.[8]

The demographics of age and male gender of our study were similar to the above study though with a comparatively very small sample. Our study consists of a sample of 108 patients with mean age 31.3 ± 13.5 years and 60 (55.6%) males. Overall in-hospital mortality was 399 in 11,580 (3.45%). We also found a small prevalence of in-

hospital mortality of 1.9%, similar to the above study. Meanwhile we also reported significant effect of age in-hospital mortality results, like the above study that reported, age as a significant predictor of death.[8]

The above subject area also found that other predictors of mortality included hypoxic-ischemic brain injury (OR 9.85), cerebrovascular diseases (OR 2.08), female sex (OR 1.34), and higher comorbidity index (OR 6.79). The survey concluded that overall mortality in the hospital from a generalized convulsive status epilepticus is limited, but increased dramatically in those treated with mechanical ventilation. Other ways of death include older age, female gender, hypoxic-ischemic injury and higher comorbidity index. We are unable to comment on the other predictors as we did not measure most of these variables.[8]

Convulsive status epilepticus is the most common and life-threatening status epilepticus (SE). The aim of this work was to identify the clinical features of CSE in northwest China. Approximately 220 patients were recruited with the median age of 37.5 years, 50% of the patients experienced a history of epilepsy. Our subject has a considerably small sample of 108 patients and were of younger age as compared to above study around 31 years.[9,10]

Status epilepticus is an under diagnosed entity in Pakistan. It is a position that is potentially reversible, simply causes a mortality if not check them. The purpose of this work was to ascertain the clinical picture of and its intercourse to the death of status epilepticus with known risk genes. A study recruited and a analyzed a mere sample of 24 patients (all children) with 66.7% male.[11] The results indicated that 8 patients were diagnosed to suffer epilepsy. Four (16.7%) experienced a history of epileptic conditions. Three patients presented with status epilepticus, for the first time, without a history of epileptic seizures consent. Our study included a comparatively larger sample of 108 patients with mean age 31.3 ± 13.5 years, as against children in above study. The above study has a higher male predominance of 67% vs 60

(55.6%) males in our study.[11]

Our sample has the history of epilepsy in 106 (93.5%) of the patients and 88 (81.5%) of the patients had status epilepticus in past. This frequency past history of epilepsy and status epilepsy was considerably large as compared to above study, mostly due to sample age difference between the two studies.[11]

Status epileptikus (SE) is one of the most common emergency anesthesia for adults and for that disease and death are higher and associated with poor management or the underlying disease. Timko and his colleagues have made the study 40 patients (23 males; 17 females) between the ages of 18 and 86 years. Generalized convulsive status epilepticus (GCSE) were uncommon (34 cases, 85%) compared with non-convulsive status epilepticus (NCSE) (6 events, 15%). Nineteen patients (47.5%) is found in neurological disorders.[12]

Withdrawal Antiepileptic drugs, encephalitis, and diseases related to alcohol were the most common causes of the SE. Thirteen patients (32.5%) developed refractory status epilepticus. Mismanagement was 23 events (57.5%). Results SE included death (14, 35%), full recovery (14% 35) and partially recovered (12 30%). Patients who experienced a wrong treatment, 43.5% died over the 23.5% died, while management. To mitigate the impact of the SE, you need to raise public awareness regarding the SE management.[12]

Median time from convulsive status epilepticus first 40 minutes of anticonvulsant drugs (interquartile range, 5-80). Among them, seizure was 85 minutes (interquartile range, 180 46,5). Convulsive refractory status epilepticus 49 (20%) patients. The most common causes of convulsive status epilepticus, a retired nonconvulsive rate (36.4%) in patients with epilepsy and cerebral episode last (27.7%) in the sea convulsive status epilepticus.[13]

Mechanical ventilation is required 210 (85%) patients. On day 90, 42 (18.8%) patients were dead, 87 (38.8%) has identified operational problems (Glasgow Outcome Scale score 2-4), and 95 (42.4%) had a good recovery (Glasgow score score Scale, 5). A very high mortality rate in the above study was due to a long duration of follow up that is 90 days and overall mortality, rather than in hospital mortality in our study.[13]

In this study demographics was similar in terms of age group and sample size; however, the study sample has a slight predominance of male gender as compared to the above study, which has female predominance. Drug levels Sub-treatment in the majority of 60%; benzodiazepines (diazepam and lorazepam 81% 19%) was the first line agent in 93.3% mainly initiated by the emergency services (EMS); 48.9% of patients required intubation and 26.7% required admission to the intensive care unit. The above study showed mortality of 5% which is in line with our study of around 2% in hospital mortality. SE control convulsive obtained in patients receiving treatment in the recommended time frame. ($p < $ or $= 0.02$).[14]

CONCLUSION

The generalized convulsive status epilepticus is associated with high mortality and neurologic consequences. Our study found a small prevalence of in hospital mortality. Studies found in our review have also shown a similar trend with the in hospital mortality at the lower levels; however, studies with long follow up and severe diseases including co-morbidity have shown a very high trend. Based on our study weakness and limitations, we recommend further studies with larger sample sizes to reach the firm conclusion. **Copyright© 30 Apr, 2016.**

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"Everyone dies,
but not everyone lives."

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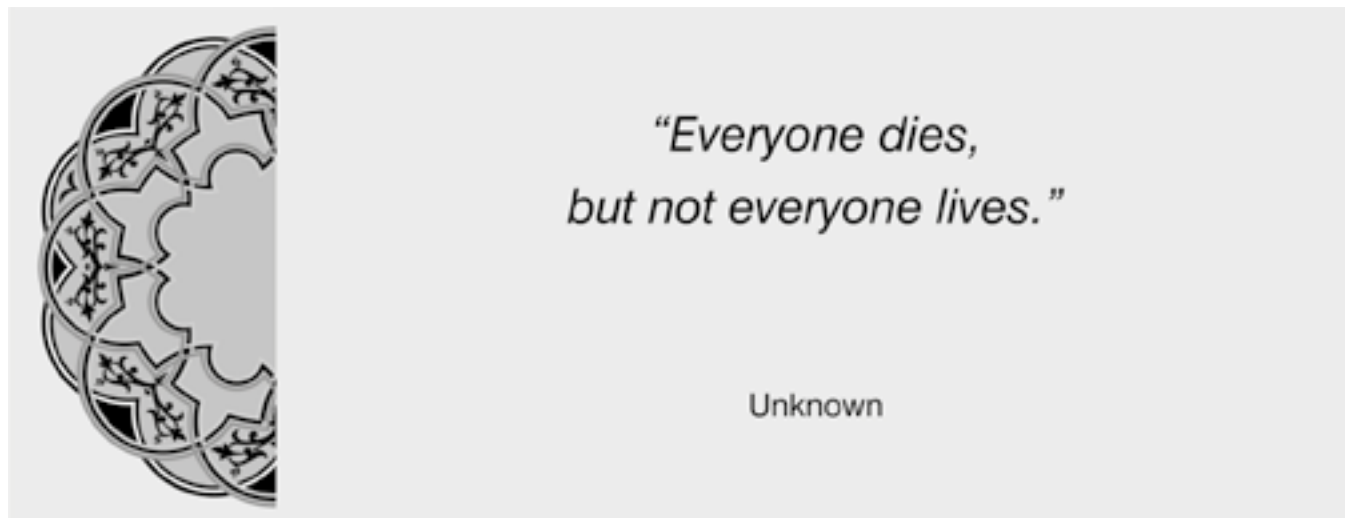
AUTHORSHIP AND CONTRIBUTION DECLARATION

Sr. #	Author-s Full Name	Contribution to the paper	Author=s Signature
1	Dr. Dileep Kumar	Conception and Design, Statistical expertise, Critical revision of the article for important intellectual content	
2	Dr. Awais Bashir Larik	Data collection	
3	Dr. Amir Shahzad	Drafting of the article	