

Original Article

FREQUENCY OF PLEDS IN PATIENTS WITH ACUTE STROKE

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Objective: To determine the frequency of PLEDS in patients with Acute Stroke.**Methods:** This Cross sectional study was conducted in Neurology out door, Lahore General Hospital from 1st June 2016 to 31st May 2017..**Results:** The results of the current study reveal that 17.67%(n=53) cases were between 40-50 years, 24.67%(n=74) between 51-60 years, 25.66%(n=77) between 61-70 years and 32%(n=96) had >70 years of age, mean and SD was calculated as 66.78+3.65 years, 58%(n=174) were male and 42%(n=126) were female, 71%(n=213) were between 24-48 years, and 29%(n=87) were between 48-72 hours, mean+SD was calculated as 33.54+1.54 hours, while regarding frequency of PLEDS in patients with acute stroke it was recorded in 13.67%(n=41) while 86.33%(n=259) had no findings of PLEDS.**Conclusions:** The results of the study conclude that the frequency of PLEDS among patients with Acute Stroke is not very high but considerable and every patient who present with acute stroke may be evaluated for PLEDS.**Keywords:** PLEDS, acute stroke, frequency.**Introduction**

Periodic lateralized epileptiform discharges (PLEDS) are presence of a pattern of repetitive paroxysmal slow or sharp waves, uni- or bilateral at intervals of between 0.5 to 3 seconds.¹ PLEDS mean increased seizure propensity. There has been increased frequency of seizures in patients with PLEDS in EEG.² A higher percentage of PLEDS was associated with higher mortality, perhaps representing greater severity of the underlying etiology. PLEDS can be found in diseases as CNS infections, Tumors and demyelination but by far the most common reaching about 26% are found in Acute Stroke.³ PLEDS mean increased seizure propensity. There has been increased frequency of seizures in patients with PLEDS in EEG.⁴

A higher percentage of PLEDS was associated with higher mortality, perhaps representing greater severity of the underlying etiology.⁵ Earliest changes of ischemia can be detected with EEG.⁶ Even the CT-Scan Brain is not able to detect changes within 24 hours. Study reveals that greater number of patients with PLEDS in acute stroke is associated with poor functional outcome.³ Patients with stroke have the highest proportion of disabilities as well as having acute complications and morbidities occurring in later life but doctors in emergency and medical wards in our setup discharge these patients early not knowing its hazards on the patients. PLEDS are a good early predictor of these complications. Early recognition

of these complications and prompt and aggressive management can serve to decrease mortality and morbidity. Studies conducted internationally have almost a constant percentage regarding the presence of PLEDS reaching 26%, meanwhile only one such study that was done locally reports 0% PLEDS in post-stroke fits,⁷ which as obvious is a huge difference and thus is negating its significance entirely. Before embarking on wide scale EEG for PLEDS in acute stroke patients the study of its frequency in local setting is required so that its occurrence and thus its feasibility can be established.

Methods

This was a cross sectional study, conducted in Neurology out door of Lahore General Hospital Lahore, from 1st June 2016 to 30th May 2017. The calculated sample size was 300 cases, with 5% margin of error, 95% confidence level, taking expected percentage of PLEDS in acute stroke is 26%.³ Non probability purposive sampling technique was used. Study cases between age 40-100 were selected according to following criteria; 1) Patients diagnosed as Ischemic stroke (defined as focal neurological deficit of more than 24hour duration as determined by history, clinical examination and by CT-Scan Brain). Patients with Duration of symptoms after stroke onset <24hours and >72 hours and History of previous epilepsy (defined as tendency to have recurrent convulsions) or Intracerebral bleed or Subarachnoid hemorrhage (as reported in CT-Scan)

were excluded. After ethical approval and written informed consent 300 patients presenting to neurology outdoor of General hospital Lahore, who fulfilled the inclusion and exclusion criteria were recruited. Patients' demographic information was recorded. Each patient was explained the importance and procedure of study. Data was collected with help of E.E.G tracing on the E.E.G machine which was reported in Neurology Department. Patients reported as having periodic lateralized epileptiform discharges were documented as PLEDS +ve. Data was entered in the Proforma given at the end. All the data collected through Proforma was entered in SPSS version 22 and analyzed through its statistical package. Descriptive statistics were calculated. Quantitative variables of study included age and duration of Stroke. This was presented as mean and standard deviation. Frequency and percentage of presence and absence of PLEDS was calculated and if present was presented by frequency and percentage.

Results

A total of 300 cases fulfilling the inclusion /exclusion criteria were enrolled to determine the frequency of PLEDS in patients with Acute Stroke. Age distribution of the patients was done which shows that 17.67% (n=53) cases were between 40-50 years, 24.67% (n=74) between 51-60 years, 25.66% (n=77) between 61-70 years and 32%(n=96) had >70 years of age, mean and SD was calculated as 66.78 ± 3.65 years. Gender distribution of the patients was done which shows that 58% (n=174) were male and 42% (n=126) were female. Duration of acute stroke (in hours) was recorded which shows that 71%(n=213) were between 24-48 years, and 29%(n=87) were between 48-72 hours, mean \pm sd was calculated as 33.54 ± 1.54 hours. (Table-1)

Table-1: Duration of acute stroke (n=300)

Duration (in hours)	No of patients	Percentage
24 - 48	213	71%
48 - 72	87	29%
Total	300	100%

Mean \pm SD: 33.54 ± 1.54

Table-2: Frequency of plds in patients with acute stroke (n=300).

PLEDS	No of patients	Percentage
Yes	41	13.67%
No	259	86.33%
Total	300	100%

Frequency of PLEDS in patients with acute stroke revealed in 13.67% (n=41) while 86.33% (n=259) had no findings of PLEDS. (Table-2)

Discussion

Periodic Lateralized Epileptiform Discharges (PLEDS) are usually seen in the context of destructive structural lesions of the cortex, more frequently in acute ischemic stroke and less common in tumors and meningoencephalitis, especially herpes simplex virus. Its origin and prognosis are uncertain but it is known that PLEDS are linked to epileptic seizures, including status epilepticus.⁸ There is a wide variety of potential PLEDs etiologies, most of them focal lesions, of which acute ischemic stroke is the most frequent cause in all series. Although PLEDs may also appear in tumours, haemorrhages or CNS infections, this waveform is considered a quite specific EEG pattern for herpes simplex virus encephalitis,⁹ but they are also related to inflammatory processes of different origins such as neurosyphilis,¹⁰ demyelinating diseases,¹¹ neurocysticercosis,¹² influenza,¹³ neuro-Behcet's disease¹⁴ or bacterial meningoencephalitis, including Q fever.¹⁵ We planned this study as we found that studies conducted internationally have almost a constant percentage regarding the presence of PLEDS reaching 26%, meanwhile only one such study that was done locally reports 0% PLEDS in post-stroke fits,⁷ which as obvious is a huge difference and thus is negating its significance entirely. The results of the current study reveal that 17.67%(n=53) cases were between 40-50 years, 24.67%(n=74) between 51-60 years, 25.66%(n=77) between 61-70 years and 32%(n=96) had >70 years of age, mean and SD was calculated as 66.78 ± 3.65 years, 58%(n=174) were male and 42%(n=126) were female, 71%(n=213) were between 24-48 years, and 29%(n=87) were between 48-72 hours, mean \pm sd was calculated as 33.54 ± 1.54 hours, while regarding frequency of PLEDS in patients with acute stroke it was recorded in 13.67%(n=41) while 86.33%(n=259) had no findings of PLEDS. The findings of the study are nearly agreement with the studies conducted internationally i.e. 26%,³ while in contrast with a local study,⁷ the reason behind this difference is unknown. Another study by Cyril Charlin¹⁶ evaluated the incidence and the clinical significance of periodic lateralized epileptiform discharges (PLEDS) in acute ischemic stroke and recorded overall PLEDs in 13(27.7%) patients. Though the results are in agreement with other international studies but more trials in our society are required to confirm the

findings of our study and this data may be considered as primary.

present with acute stroke may be evaluated for PLEDS.

Conclusion

The results of the study conclude that the frequency of PLEDS among patients with Acute Stroke is not very higher but considerable and every patient who

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