Early post stroke seizures following acute ischemic stroke: a cross sectional study from a tertiary care centre in Kerala

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INTRODUCTION

- Stroke is the most common cause of epilepsy in the adult population1.
- Post-stroke seizures can significantly affect the clinical outcome and duration of hospital stay
- Studies report that 5-20% of stroke patients develop post stroke seizures
- Post stroke seizures are classified as early(ES) and late(LS)
- ES were classified as spontaneous seizures occurring within 1 week of the stroke event.
- ES occurs due to acute neuronal injury and concomitant glutamate-mediated excitotoxicity, disruption of the blood-brain barrier, and ion channel dysfunction.

AIMS AND OBJECTIVES

- Clinical profile of patients with early post stroke seizures
- Asses the risk factors for early post stroke seizures

MATERIALS AND METHODS

INCLUSION CRITERIA

All consecutive patients who were admitted under neurology department during the study period between June 2020 to May 2022 with acute ischemic stroke(confirmed by CT/MRI) were included in the study.

EXCLUSION CRITERIA

All patients with a previous stroke, transient ischemic attacks, hemorrhagic stroke, cerebral venous thrombosis, prior history of seizures, or any other epileptogenic comorbidity.

METHODOLOGY

- All patients who met the inclusion criteria were included in the study and grouped into as those with early post stroke seizures and those without.
- Early post stroke seizures were defined as those who developed spontaneous seizures within 7 days of ischemic stroke stroke.
- NIHS score was used to asses the severity of stroke and stroke subtype was classified based on the TOAST classification.

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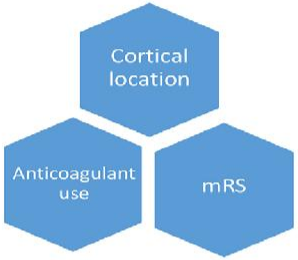
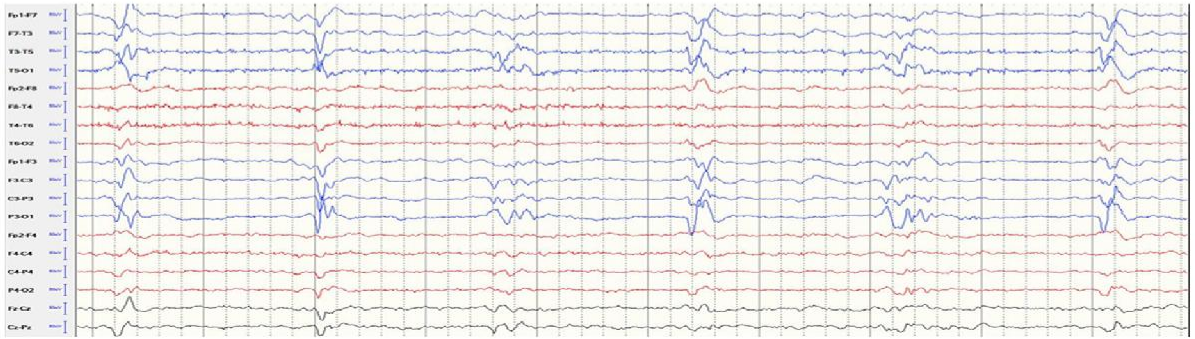
OBSERVATIONS AND RESULTS

	Patients with ES(n=20)	Patients without ES(n=180)	P
Median age (yrs)	45	60	
Median NIHSS	10	6	
Stroke severity(%)			
MILD(NIHSS<_3)	2	60	
MODERATE (NIHSS4-10)	5	63	0.19
SEVERE(NIHSS>_10)	13	72	
Cortical location	16	72	0.04
Stroke type			
Large vessel	13	57	
Cardioembolic	4	22	
Small vessel	1	60	0.213
undetermined	2	43	
Anticoagulant use	4	22	0.021
Stroke risk factors			
Diabetes	16	38	0.154
Hypertension	18	40	0.18
Dyslipidemia	2	20	0.44
CAD	6	22	0.32
Atrial fibrillation	4	43	0.54
Smoking	12	44	0.44
Median mRS	3	2	0.04
Thrombolysis	3	20	0.53



Patients with early post stroke seizure were younger, had a more severe stroke at presentation (NIHSS and mRS), had a cortical location of the infarct, involving the MCA territory, and underwent lesser recanalization procedures (thrombolysis or mechanical thrombectomy). Large artery disease and cardioembolic subtypes were more common in patients with early post stroke seizure



Lateralised periodic discharges following left MCA infarct

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DISCUSSION AND CONCLUSION

- Early post stroke seizures occurred in 20 (10.0%) of acute ischemic stroke patients in our cohort.
- Significant risk factors revealed in our study were cortical location, mRS at admission, anticoagulant use.
- We seek to determine those individuals who would be at high risk for ES, and therefore, can be given prophylactic antiseizure drugs (ASD) along with the standard of care. By preventing a seizure, we will not only decrease their infarct volume but also reduce the morbidity, mortality and duration of hospital stay for the patient[2]

LIMITATIONS

- As our study was conducted in a tertiary care center there is likely to be a referral bias.
- The sample size was small.

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