

## Interictal epileptiform activity in the acute stroke phase: an independent predictor of poor outcome

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### Background and aims

EEG features are emerging as valuable prognostic indicators in acute stroke. However, data on the predictive value of interictal epileptiform discharges (IEDs) remain limited. This study aimed to assess the prognostic role of IEDs in predicting functional outcomes in stroke patients without symptomatic seizures who underwent point-of-care EEG within 72 hours of admission.

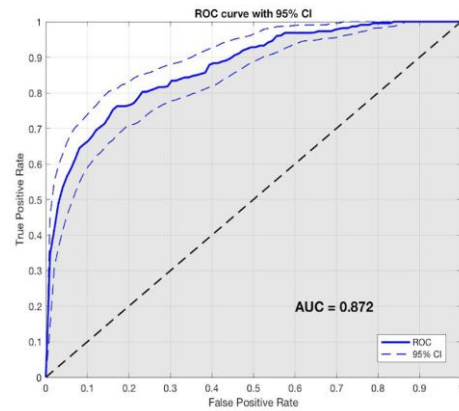
### Materials and methods

We retrospectively analyzed the clinical, neurophysiological, and neuroimaging data of acute stroke patients who underwent point-of-care EEG within 72 hours of admission. IEDs were identified according to the International Federation of Clinical Neurophysiology criteria. A multivariate logistic regression model identified variables associated with mRS scores of 3–6 at 3 months.

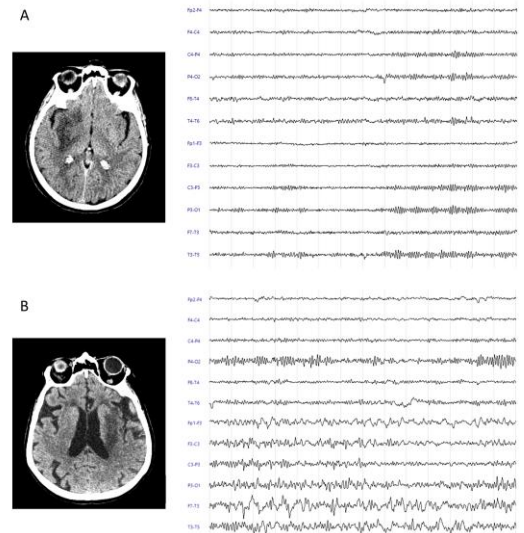
### Results

Among 593 stroke patients (median age 77 years, range 22–98; median NIHSS 5, range 0–25), 18.2% exhibited IEDs on EEG within 72 hours of admission. At 3-month follow-up, 223 patients (37.6%) demonstrated poor functional outcome (mRS 3–6). The presence of IEDs on EEG (OR=1.088,  $p=0.037$ ), along with age (OR=1.004,  $p<0.001$ ), NIHSS at admission (OR=1.032,  $p<0.001$ ), premorbid disability (OR=1.111,  $p<0.001$ ), hemorrhagic stroke (OR=1.120,  $p<0.001$ ), and lesion extent (OR=1.070,  $p<0.001$ ), were independent predictors of poor clinical outcomes at 3 months (mRS 3–6). The logistic regression model, including these factors, achieved 81% accuracy in predicting functional outcomes.

**Figure 1.** The ROC curve and AUC value with 95% CI derived from the logistic regression model.



**Figure 2.** Representative EEG cases illustrating outcome-related patterns



### Conclusions

Early IEDs on EEG within 72 hours are an independent predictor of poor clinical outcomes (mRS 3–6) at 3 months. These findings underscore the importance of EEG monitoring in the acute phase of stroke and suggest that IED detection may serve as an additional prognostic marker.