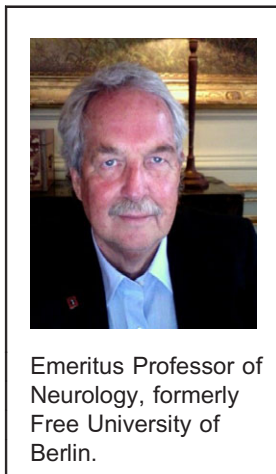


Commentary to Bentes et al. “Seizures, electroencephalographic abnormalities, and outcome of ischemic stroke patients”

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Stroke is the most common potentially preventable etiology among older adults with epilepsy, accounting for half or more of all new-onset cases.¹ The current spectrum for management of poststroke epilepsy includes primary stroke prevention,¹ symptomatic therapy with antiseizure drugs and, hopefully in the future, antiepileptogenic drugs that prevent poststroke epilepsy. One of the prerequisites of successful antiepileptogenic therapy is to identify patients with a high risk for poststroke epilepsy as early as possible. This is where the work of Carla Bentes et al. (2018), the recipient of the first Clinical prize of *Epilepsia Open*, comes in.²

Bentes et al.² evaluated whether early EEG abnormalities can independently predict poststroke epilepsy. The authors

performed a prospective study of consecutive patients with acute anterior circulation ischemic stroke without prior epileptic seizures who were admitted to a stroke unit over 24 months and followed for 1 year. Video-electroencephalography (VEEG) was performed in the first 72 h (first EEG), daily for the first 7 days, in case of neurological deterioration, at discharge and at 12 months after stroke. Primary outcome was the occurrence of at least one unprovoked seizure at least 7 days after stroke onset (post-stroke epilepsy). Secondary outcomes were the occurrence of at least one acute symptomatic seizure, defined as any seizure in the first 7 days after onset of the stroke and (interictal and/or ictal) epileptiform activity in at least one EEG during the hospital stay for acute stroke. EEG variables were defined using international criteria/terminology.

One hundred fifty-one patients were included. Thirty-eight patients (25.2%) had an acute symptomatic seizure and 23 (16%) developed poststroke epilepsy. The main result of the study was that background activity asymmetry of the first EEG and the first EEG with interictal epileptiform activity were independent predictors of poststroke epilepsy during the first year after stroke ($p = 0.043$ and $p = 0.043$, respectively). No EEG abnormality independently predicted acute symptomatic seizures. However, the presence of periodic discharges on the first EEG was an independent predictor of epileptiform activity ($p = 0.009$) during the hospital stay. The main significance of their findings is that an early poststroke EEG can predict epilepsy in the first year after stroke, independently from clinical and infarct size as determined by magnetic resonance imaging (MRI) neuroimaging. Indeed, for the same age, and clinical and infarct severity as assessed by MRI, the risk of poststroke unprovoked seizures was 3.2 times higher in patients with first EEG background activity asymmetry and 3.8 times higher in the presence of interictal epileptiform activity in this exam. The present study further enlarges the importance of an early EEG in stroke patients, detecting those with an increased risk for epilepsy.

Strengths of this work include the large sample size with prospective clinical assessment and rigorous electroencephalographic acute evaluation and follow-up. Furthermore,

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this work includes standardized imaging evaluation of middle cerebral artery infarct dimension and the presence of islands of preserved cortex within the infarct. Another aspect that stands out is the use of internationally recognized terminology showing good interobserver agreement, for describing the electroencephalographic features. The consideration of clinical and imaging parameters in the statistic models is also commendable. Finally, it is noteworthy that the first EEG was not useful to predict the risk of having an acute symptomatic seizure. Limitations apply as in any study. It would have been of interest to analyze only patients with clinical seizures and separately study the few patients with so-called electrographic seizures only (which are not seizures as seizure is traditionally a clinical term). Nevertheless, the study

by Bentes et al. is an important work that truly deserves the first Clinical *Epilepsia Open* prize. Congratulations!

Read the winning article “Seizures, electroencephalographic abnormalities, and outcome of ischemic stroke patients” online at <https://onlinelibrary.wiley.com/doi/10.1002/epi4.12075>.

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