DEBATE: SHOULD PATIENTS WITH CORTICAL STROKES BE TREATED PROPHYLACTICALLY FOR SEIZURES? – NO

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Seizures after stroke usually are divided into 'early' (within the first 4 weeks) or 'late' events. In a retrospective study of 2053 patients, cortical lesions, hemorrhagic transformation, and hyperglycemia in patients without diabetes were predictors of early seizures. Twenty-seven of 66 seizure patients had GTCS, and 39 focal seizures (33 'simple partial'). Thirteen had status epilepticus (Procaccianti et al 2012). In a population-based study of 6044 patients, 3.1% had seizures within 24 hours, including 8.4% of patients with ICH or SAH (Szaflarski et al 2008). Although patients with seizures had higher mortality at 30 days, seizures were not an independent risk factor. In 581 patients with recent cryptogenic ischemic stroke 2.4% developed early seizures, 71% of which occurred within the first 24 hours (Lamy et al 2003). Rankin scale >or=3 and cortical involvement were independently associated with early seizures. Late seizures occurred only in patients with hemispheric stroke (n = 20). The risk of first late seizure was 3.1% within 1 year and 5.5% within 3 years. The mean delay between stroke and first late seizure was 12.9 months. Late seizures were associated with early seizure, cortical signs, and larger infarct size. In a population-based study, the cumulative probability of developing late seizures and epilepsy was 3.0% by 1 year, 4.7% by 2 years, 7.4% by 5 years, and 8.9% by 10 years (So et al 1996). Predictive factors were early seizure occurrence and stroke recurrence. In a multicenter stroke unit study of 1897 patients, seizures occurred in 8.9% after mean follow-up of 9 months, and were more likely in hemorrhagic stroke, or patients with cortical infarction (Bladin et al 2000). 6.3% had acute seizures, higher in ICH (Beghi et al 2011). Recurrent seizures (epilepsy) occurred in 2.5%, more likely with late onset of the first seizure. Seizures within 24 hours of stroke onset, but not afterwards, were associated with worse outcome in patients with stroke undergoing endovascular therapy (Jung et al 2012). The incidence and significance of stroke-related seizures may change in the era of tPA, reported to reduce late-onset seizures (De Reuck and Van Maele 2010).

Studies of the relation of seizure occurrence to stroke prognosis have shown conflicting results (van Tuijl et al 2011). In a prospective series of 638 patients, 4.8% had seizures, associated with cortical infarcts, hemorrhage or hemorrhagic transformation, and stroke size; seizures within the first seven days had no effect on outcome (Alberti et al 2008). A cohort study of 5027 patients showed higher morbidity and mortality among the 2.7% who had a seizure (Burneo et al 2010). In 562 patients, seizures within 7 days of ICH did not influence prognosis at six months (De Herdt et al 2011). The very limited data have not shown any advantage or effectiveness of prophylactic AED treatment after stroke (Herman 2011).

In a post hoc analysis of data from an intracranial hemorrhage study, PHT, VPA, or LTG was started for 23 of 295 patients without documented seizure during the first 10 days of the trial. In logistic regression, initiation of AEDs was robustly associated with poor outcome (Messe et al 2009). In both ICH and SAH, PHT was associated with poor outcome (Naidech et al 2005, 2009). In a placebo-controlled study of 72 patients with ICH, VPA did not affect seizure incidence or mortality but improved NIHSS at one month (Gilad et al 2011). A Cochrane review found insufficient evidence to support AEDs for seizure prevention after acute stroke (Kwan and Wood 2010).

AED therapy carries risks of its own, including direct drug toxicity, as well as the possibility of interactions in patients who may be receiving g a variety of drugs including anticoagulants and anti-arrhythmic agents. Patients with stroke should

only be treated if seizures occur. It is very important to search for conditions that might increase seizure risk, such as vasculitis, sources of emboli, infection or ETOH withdrawal, evaluate underlying causes of stroke, rule out infection, etc., check for co-morbidities like etoh withdrawal.
Uncertain how long to treat people if they have a single early post-stroke event.

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