

Frequency, determinants, and effects of early seizures after thrombolysis for acute ischemic stroke: The ENCHANTED trial.

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Abstract

BACKGROUND: Seizures after ischemic stroke have not been well-studied. We aim to determine the frequency, determinants, and significance of early seizures after thrombolysis for acute ischemic stroke.

METHODS: Data are from the Enhanced Control of Hypertension and Thrombolysis Stroke Study (ENCHANTED), an international, multicenter, randomized controlled trial where patients with acute ischemic stroke were randomized to low-dose (0.6 mg/kg) or standard-dose (0.9 mg/kg) IV alteplase. The protocol prespecified prospective data collection on in-hospital seizures over 7 days postrandomization. Logistic regression models were used to determine variables associated with seizures and their significance on poor outcomes of death or disability (modified Rankin scale scores 3-6), symptomatic intracerebral hemorrhage (sICH), and European Quality of Life 5-Dimensions questionnaire [EQ-5D] over 90 days.

RESULTS: Data were available for 3,139 acute ischemic stroke participants, of whom 42 (1.3%) had seizures at a median 22.7 hours after the onset of symptoms. Baseline variables associated with seizures were male sex (odds ratio [OR] 2.19, 95% confidence interval [CI] 1.07-4.50), severe neurologic impairment (NIH Stroke Scale score ≥ 10 ; OR 2.16, 95% CI 1.06-4.40), and fever (OR 4.55, 95% CI 2.37-8.71). Seizures independently predicted poor recovery: death or major disability (OR 2.88, 95% CI 1.28-6.47), unfavorable ordinal shift of mRS scores (OR 1.94, 95% CI 1.10-3.39), and lower than median EQ-5D health utility index score (OR 3.50, 95% CI 1.37-8.91). There was no association of seizures with sICH in adjusted analysis.

CONCLUSIONS: In thrombolysis-treated patients with acute ischemic stroke, seizures are uncommon, occur early, and predict poor recovery.