Disputes & Debates: Editors' Choice

Steven Galetta, MD, FAAN, Section Editor

Editors' note: Patient-reported outcomes across cerebrovascular event types: More similar than different

In "Patient-reported outcomes across cerebrovascular event types: More similar than different," Katzan et al. retrospectively reviewed patient-reported measures in multiple domains over a 2-year period for 2,181 patients with ischemic stroke, TIA, intracerebral hemorrhage (ICH), and subarachnoid hemorrhage (SAH) at a single institution. After adjustment, patients with TIA had worse scores for pain, fatigue, anxiety, depression, and sleep than patients with the various forms of stroke. Spector notes that although the data for ischemic stroke, ICH, and SAH are interesting, the TIA results must be interpreted with caution because (1) there were no premorbid data on these domains, so it is unclear whether symptoms can be attributed to the TIA, and (2) some of the TIAs likely were not even ischemic. Katzan et al. agree with both of these limitations. Both Katzan et al. and Spector feel that further research of the impact of TIA on the aforementioned domains is needed.

Ariane Lewis, MD, and Steven Galetta, MD

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Reader response: Patient-reported outcomes across cerebrovascular event types: More similar than different

Andrew R. Spector (Durham, NC)

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Katzan et al.¹ looked at an important question, but the conclusions are difficult to support with the study methods applied. Without premorbid data to indicate the rates of pain, fatigue, anxiety, depression, and sleep disturbances before the cerebrovascular events, we have no way to know that the symptoms noted on the follow-up questionnaire were outcomes of the events. As the authors admit, it is likely that several—if not many—of the TIAs were not ischemic in etiology. Symptoms such as pain, anxiety, and depression are potentially causes of these transient neurologic symptoms in a manner that would not apply to the stroke subtypes. Therefore, it would be inappropriate to call them outcomes. Although the data indicating that the 3 stroke subtypes have similar symptoms on follow-up are useful, the TIA data must be interpreted very cautiously.

1. Katzan IL, Schuster A, Newey C, Uchino K, Lapin B. Patient-reported outcomes across cerebrovascular event types: more similar than different. *Neurology* 2018;91:e2182–e2191.

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Author response: Patient-reported outcomes across cerebrovascular event types: More similar than different

Irene L. Katzan (Cleveland) and Brittany Lapin (Cleveland)
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We appreciate Dr. Spector's interest in our article.¹ We agree that because we do not have premorbid scores for the patients with stroke, we cannot attribute the scores to the direct effect of the stroke events; rather, the study demonstrated the degree to which 8 domains of health (termed patient-reported outcomes) are affected across types of cerebrovascular events. We tried to be careful about the wording used in the article, but thank Dr. Spector for highlighting this point. We also agree with the comment that patients with the clinical diagnosis of TIA may have not truly had ischemia as the mechanism for their symptoms. This reiterates the points discussed in our article.¹ TIA is a subjective diagnosis that is known to have, at best, modest interrater reliability. As we suggested in the article,¹ diagnosis of TIA may have been inaccurate in some patients, which could also partly explain previous reports by others of reduced quality of life in patients with TIA. We believe that further evaluation is warranted to better understand the impact of TIA on patients' health status.

1. Katzan IL, Schuster A, Newey C, Uchino K, Lapin B. Patient-reported outcomes across cerebrovascular event types: More similar than different. *Neurology* 2018;91:e2182–e2191.

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Editors' note: Continuous EEG is associated with favorable hospitalization outcomes for critically ill patients

In "Continuous EEG is associated with favorable hospitalization outcomes for critically ill patients," Hill et al. retrospectively reviewed national inpatient hospitalization data over a 10-year period and found that continuous EEG (cEEG) use increased >10-fold from 2004 to 2013, but that it was still only used for 0.3% of critically ill patients. They noted that although patients evaluated with cEEG appeared more ill, its use was associated with lower in-hospital mortality for critically ill patients, prompting them to conclude that cEEG may be underused. At a single institution, Sethi found that cEEG use increased >5-fold from 2005 to 2011, but he notes that in some cases, cEEG was unnecessary, and a 30-minute emergent EEG would have been sufficient. He comments that better guidelines are needed on the indications for cEEG vs 30-minute EEG in critically ill patients. Hill et al. agree that it is necessary to further evaluate which subgroups of critically ill patients benefit from cEEG the most to ensure that resources are allocated appropriately.

Ariane Lewis, MD, and Steven Galetta, MD
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Reader response: Continuous EEG is associated with favorable hospitalization outcomes for critically ill patients

Nitin K. Sethi (New York)

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I read with interest the Hill et al.¹ article on continuous EEG (cEEG) use in critically ill patients and its association with favorable outcomes (lower in-hospital mortality) in their studied cohort, except the seizure/status epilepticus subgroup. The authors concluded that continued expansion of cEEG use may be warranted. My colleagues and I performed an audit of the long-term cEEG monitoring in our neurologic-neurosurgical intensive care unit over 7 years (2005–2011) and found a substantial increase in cEEG use.² Studies were frequently ordered by intensivists and residents in training for indications where a 30-minute emergent EEG (rEEG) would suffice. This included sudden change in the sensorium of a patient, sudden change in neurologic examination, a patient not waking up after recent neurosurgical intervention, and a patient admitted after a single seizure who then became encephalopathic after receiving IV lorazepam in the emergency department.² The American Epilepsy Society and the American Clinical Neurophysiology Society need to better define clinical indications for cEEG vs rEEG monitoring in critically ill patients before a call for continued expansion of its use in this patient group can be justified.

1. Hill CE, Blank LJ, Thibault D, et al. Continuous EEG is associated with favorable hospitalization outcomes for critically ill patients. *Neurology* 2019;92:e9–e18.
2. Sethi NK, Rapaport BS, Solomon GE. An audit of continuous EEG monitoring in the neurological-neurosurgical intensive care unit. *J Clin Neurophysiol* 2014;31:416–417.

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Author response: Continuous EEG is associated with favorable hospitalization outcomes for critically ill patients

Chloe E. Hill (Ann Arbor, MI) and Leah J. Blank (New York)

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We appreciate Dr. Sethi's thoughtful response to our article.¹ We agree that better definition of clinical utility, through development of a stronger evidence base, is key. Although our work suggested that continuous EEG (cEEG) is underused at present, we need to understand which subgroups of critically ill patients benefit most from the application of cEEG. Furthermore, rigorous assessment of study length (i.e., routine EEG vs cEEG), such as Dr. Sethi's study² and the prospective trial of cEEG vs routine EEG in adults with impaired consciousness,³ will be very important in informing proper allocation of resources going forward.

1. Hill CE, Blank LJ, Thibault D, et al. Continuous EEG is associated with favorable hospitalization outcomes for critically ill patients. *Neurology* 2019;92:e9–e18.
2. Sethi NK, Rapaport BS, Solomon GE. An audit of continuous EEG monitoring in the neurological-neurosurgical intensive care unit. *J Clin Neurophysiol* 2014;31:416–417.
3. Rossetti AO, Schindler K, Alvarez V, et al. Does continuous video-EEG in patients with altered consciousness improve patient outcome? Current evidence and randomized controlled trial design. *J Clin Neurophysiol* 2018;35:359–364.

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When Should We Treat Periodic Lateralized Epileptiform Discharges (PLEDS) (P5.061)

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In the abstract “When Should We Treat Periodic Lateralized Epileptiform Discharges (PLEDS) (P5.061)” by Yusuf Solaiman et al.,¹ first published in the April 2014 Supplement, the author’s name should read Ahmad Yusuf Solaiman. The authors regret the error.

Reference

1. Yusuf Solaiman A, Memon A, Basha M, et al. When Should We Treat Periodic Lateralized Epileptiform Discharges (PLEDS) (P5.061). *Neurology* 2014;82:(10 Supplement)P5.061.

SYNGAP1 encephalopathy

A distinctive generalized developmental and epileptic encephalopathy

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In the article “*SYNGAP1* encephalopathy: A distinctive generalized developmental and epileptic encephalopathy” by Vlaskamp et al.,¹ first published online December 12, 2018, in supplemental table 1, the c.notation for the mutation identified in patient 21 should read “g.33408547G>GGCTGC, c.1718_1719insGCTGC, p.Glu578Alafs*74.” The supplemental data were corrected after publication. The authors regret the error.

Reference

1. Vlaskamp DRM, Shaw BJ, Burgess R, et al. *SYNGAP1* encephalopathy: a distinctive generalized developmental and epileptic encephalopathy. *Neurology* 2019;92:e96–e107.

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***SYNGAP1* encephalopathy: A distinctive generalized developmental and epileptic encephalopathy**

Neurology 2019;93:908

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