

Status epilepticus outcome

Status epilepticus (SE) is a neurological **emergency** associated with a high **mortality rate** and long-term **cognitive disorder sequelae**.

see **Refractory status epilepticus**.

Although overall mortality of status epilepticus is high, baseline patient characteristics and co-morbidities may be helpful to predict outcomes and shape treatment decisions. Two previously published scoring systems exist to predict outcomes: the Status Epilepticus Severity Score (STESS) and the Epidemiology-based Mortality Score in Status Epilepticus (EMSE). However, a comparison of the two scores has not previously been completed in an American intensive care unit. We hypothesize that both scores will adequately predict the primary outcome of in-hospital death, but that the EMSE may more accurately predict functional outcomes, and significantly impact treatment decisions for both clinicians and families.

METHODS: We performed a retrospective analysis of all cases of status epilepticus admitted to the Neuro-Critical Care Unit (NCCU) at the Ohio State University Wexner Medical Center from 6/1/2014 - 8/31/2015. We collected data on age, comorbidities, EEG findings, and seizure history. The primary outcome measured was in-hospital death; secondary outcomes included length of stay in the NCCU, placement of a tracheostomy and/or a percutaneous endoscopic gastrostomy upon discharge, and discharge location were used as surrogate markers for outcome severity. A sensitivity and specificity analysis was carried out, in addition to a student's t-test for a comparison of the two scores. ANOVA was completed to compare secondary outcomes **RESULTS:** Forty-six patients were admitted to the NCCU for management of status epilepticus during June 2014 and January 2016, thirteen of which experienced in-hospital death. The median age of the sample was 60, with approximately half of the sample (52.63%) having 3 or more comorbidities. The sensitivity of both EMSE and STESS were very high (100% and 90% respectively); however, the specificities were very low (28.6% and 42.9% respectively). A student's t-test between those who experienced in-hospital death and those who did not was only significant for EMSE at the $p < 0.1$ level ($p = 0.055$). Additionally, mean EMSE scores but not STESS scores, were significantly higher ($p < 0.001$) for those patients who were discharged to skilled nursing facilities or with hospice than compared to those who were discharged to home or to acute inpatient rehabilitation.

The EMSE and STESS may be useful to predict outcomes of status epilepticus in populations with few comorbid conditions, but are less helpful when patients have multiple medical problems. Secondly, while neither score may be specific enough to differentiate for the primary outcome of death, their utility may be helpful to predict secondary outcomes that strongly affect clinical decisions. Based on these results, we believe a prospective trial of EMSE and STESS should be carried out to obtain more information on their utility, especially in American patients who may have more relevant comorbidities than in other countries ¹⁾.

¹⁾

Yechool N, Adeli A, Hafeez S. External validation of the epidemiology-based mortality score in status epilepticus in an American intensive care population. *Epilepsy Res.* 2018 Oct 3;148:32-36. doi: 10.1016/j.epilepsyres.2018.10.001. [Epub ahead of print] PubMed PMID: 30342324.

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