Status epilepticus case series

Yechoor et al. performed a retrospective analysis of all cases of status epilepticus admitted to the Neurocritical Care Unit (NCCU) at the Ohio State University Wexner Medical Center from 6/1/2014 - 8/31/2015.

They 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

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)].

Ferlisi et al. collected information about 776 cases of RSE in 50 countries over 4 years. Control of SE was achieved in 74% of the cases. Neurologic outcomes were poor in 41% of patients, and 24% died. Good outcome was associated with younger age and a history of epilepsy. Etiology strongly influenced the outcome. Patients from Asia were younger, more frequently presented with convulsive SE, and were more frequently affected by infectious etiologies when compared with patients from Europe and the Americas. Despite these differences, outcomes were similar in all countries. Demographics of patients with RSE in a global audit are similar to those in prior single center series, providing evidence of generalizability of those studies. Important differences exist among patients with RSE from different regions of the world, but these do not seem to significantly influence patient outcomes. [2)].

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151 patients treated in Oslo University Hospital from 2001 to 2017 were included. One SE-episode was selected per patient and variables related to the patient, SE-episode, treatment and outcome entered into a database. Status Epilepticus Severity Score (STESS) and Epidemiology-based Mortality Score in SE (EMSE) were calculated for each episode.

68% (n = 102) of SE-episodes were responsive, 20% (n = 30) refractory and 12% (n = 19) superrefractory. Mortality was 9%, with a significant difference between responsive episodes (1%) and refractory (superrefractory included) episodes (24%), $p < 0.001$. 86% of patients received a benzodiazepine as 1st antiepileptic drug. Multivariate analysis showed that non-convulsive SE in coma was significantly associated with refractoriness ($p = 0.04$), while focal non-convulsive SE without coma was associated with responsiveness ($p = 0.03$). Younger age was associated with superrefractoriness ($p = 0.02$). Regarding outcome, EMSE-EtiologyAgeComorbiditiesEEG (EACE)≥64 ($p = 0.02$) and use of vasopressors ($p = 0.03$) were associated with a worsening of the modified Rankin scale at discharge. STESS was only associated with outcome in univariate analysis.

In this cohort in which international guidelines for treatment of SE were well followed, semiology of the SE was found to be the most important determinant of refractoriness, and the new clinical scoring system EMSE-EACE was robustly associated with outcome [3].

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2)
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3)
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