OP-16
Utility of total GCS score versus motor GCS score in poisoned patients in the Emergency Department.

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Objective: Many Emergency Department (ED) poisoned patients present with reduced consciousness. Although a sedation score that correlates with adequacy of airway protection in poisoned patients has never been determined, Glasgow Coma Score (tGCS) is commonly used. Motor GCS (mGCS) score is an independent predictor of outcome in patients with head injury and has less inter-observer variability.(1,2) We examined utility of mGCS verses tGCS scores in predicting progression to intubation in poisoned patients.

Methods: Study Design: single centre retrospective case-control. Data extracted from Intensive Care Unit database on all admissions secondary to poisoning from 2009-2013. Data collected: exposure, physiological parameters, GCS, intubation status, presence of aspiration pneumonia, length of stay and mortality**.** Primary outcome was intubation status. Receiver Operating Characteristic (ROC) curves of mGCS and tGCS were produced. mGCS score and tGCS were dichotomized to produce cut-point values; sensitivity and specificity were calculated, to compare utility as a predictive test.

Results: 85 patients met inclusion criteria and were matched with 85 non-intubated controls. There was no statistically significant difference between age, admission systolic blood pressure and respiratory rate. Intubated group had a significantly higher minimum recorded oxygen saturation (100% vs. 97% $p<0.001$), and lower admission presenting heart rate (mean 90 vs. 100 bpm $p<0.001$). tGCS was significantly better than mGCS at predicting intubation status (Area Under Curve (AUC) tGCS=0.94, mGCS=0.91, $p = 0.0491$). Sensitivity was 76% and 89% for mGCS and tGCS respectively (specificity 86% and 82%). Cut-point to predict intubation: tGCS=8.5, mGCS=4.5. AUC for eGCS score was 0.86, and AUC for vGCS score was 0.88. No deaths were recorded in both groups. The median length-of-stay if intubated was 3 days, and 1 day for the control group ($P<0.001$). Fifteen cases with a GCS <9 were not intubated; none had radiological evidence of subsequent pulmonary aspiration.

Conclusion: tGCS was statistically better at predicting progression to intubation, however mGCS performed well, with a relatively high sensitivity and specificity. mGCS may prove useful in settings where airway decisions are made over time by multiple clinicians.

References:

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