CONCLUSION: Elevated MHG and MaxG are highly predictive of poorer outcomes following aSAH. Conversely, lower MinG is associated with increased vasospasm risk. We suggest that future SAH insulin therapy trials consider targeting glucose between 90 and 140 mg/dL and initiate insulin therapy based on MHG, rather than other hyperglycemia measures.

410 Frailty Scores Predict Discharge Location Following Acute Subdural Hematoma

Cameron Rawanduzy; Matthew McIntyre, MD; Adil Afridi; Jesse Honig; Mohamed Halabi; Jake Hehir; Meic H. Schmidt, MD, MBA; Chad D. Cole, MD, MSc; Ivan Miller; Chirag D. Gandhi, MD; Fawaz Al-Mufti; Christian A. Bowers, MD

INTRODUCTION: Frailty, i.e. a reduced physiologic reserve, has been associated with worse outcomes in neurosurgical patients. However, frailty's effect on acute subdural hemorrhage (aSDH) outcomes is unclear.

METHODS: Patients who presented to the emergency department between January, 2016 and June, 2018 were retrospectively identified via ICD codes for aSDH. Patients' modified frailty index (mFI), Charlson comorbidity index (CCI), and temporalis muscle thickness (TMT) were calculated. Primary endpoints were death and discharge home. Multivariate logistic regressions were performed to evaluate predictors of primary endpoints.

RESULTS: There were a total of 167 patients identified and 111 (66.5%) were male, the mean age was 63.4 ± 1.9 years, 30 (18.0%) patients underwent craniotomy, and 32 (19.2%) died during hospitalization. In multivariate analysis, decreasing iGCS (OR = 0.84; 95%CI:0.74-0.96; P = .0112) and midline shift (MLS) (OR = 1.27; 95%CI: 1.08-1.50; P = .0048), were the typical expected independent predictors of mortality, but not age or any frailty index. The higher iGCS (OR = 1.26; 95%CI:1.10-1.44) (P = .0011), lower CCI (OR = 0.32; 95%CI: 0.14-0.74; P = .0071), and larger TMT (OR = 2.63; 95%CI: 1.16-5.99; P = .0210) independently predicted increased rates of discharge to home. In a subgroup analysis of patients with non-severe MLS(<5mm) aSDH, iGCS was the only predictor of mortality (OR = 0.86; 95%CI: 0.75-0.99; P = .0309), however, iGCS (OR = 1.34;95%CI:1.15-1.55; P < .0001), lower CCI (OR = 0.37;95%CI:0.16-0.84; P = .0307), and larger TMT (OR = 0.40;95%CI:0.17-0.92; P = .0307) independently predicted discharge to home. The mFI was not independently associated with either primary endpoint in multivariate analysis (P > .05).

CONCLUSION: The effect of a patient’s baseline frailty has not been explored in patients with aSDH. In line with prior literature, we show that iGCS predicts both mortality and discharge location following aSDH better than age or frailty. However, CCI and TMT, but not the mFI, are useful prognostic indicators of discharge to home among all patients and those with non-severe aSDH. The iGCS should continue to be the primary prediction tool for aSDH patients, however frailty, particularly with increased TMT & lower CCI, should be considered for long-term prognostication following aSDH.

Section on Neurotrauma and Critical Care

411 Portable MRI for the Neurosurgical ICU

Justin Turpin; Prashin Unadkat; Justin G. Thomas, DO; Nick Klein; Shahab Khazanehdari; Sheshali Wanchoo; Kenia Samuel; Betsy Moclair; Karen Black, MD; Amir R. Dehdashii, MD; Raj K. Narayan, MD; Richard Temes; Michael Schulder, MD

INTRODUCTION: Neuroimaging in the intensive care unit (ICU) may be difficult to acquire given the safety concerns and challenges involved in moving critically ill patients. We report on the safety and clinical findings of a portable magnetic resonance imager (MRI) in a cohort of ICU patients who had Covid 19 with suspected neurologic injury.

METHODS: This is a prospective, non-randomized, observational study at one institution utilizing portable MRI in patients with laboratory confirmed severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) infection, known as Covid-19. Patients selected for imaging had any of the following: 1) unexplained encephalopathy or coma, 2) seizures, 3) focal neurologic deficit, and 4) abnormal head CT. Imaging was performed in each patient’s ICU room with a portable, self-shielding, 0.064 Tesla (T) MRI.

RESULTS: Among 19 patients, a total of 20 MRI scans in seven ICUs were acquired between April 13 and April 23, 2020. No adverse events to patients or staff from MRI acquisition were reported. In 12 patients, abnormal findings were seen, which included increased fluid attenuated inversion recovery (FLAIR) signal (n = 12), hemorrhage (n = 3), and diffusion-weighted imaging (DWI) positivity (n = 3). Imaging led to a change in clinical management in five patients, including 3 lumbar punctures, a resumption of anticoagulation therapy, and one previously unplanned move to palliative care.

CONCLUSION: This study provides the first report on the use of a novel, portable, self-shielding MRI to image patients. In critically ill patients, the use of portable MRI is safe, feasible, and leads to changes in clinical management. This technique can be applied to any ICU patients whose care requires imaging of the brain.

412 Thromboembolic Events After Withholding Antiplatelet and Anticoagulation Therapy in Traumatic Brain Injury Patients: Is an Early Restart Safe?

George L. Yang, MD; Diana Le; Daryn K. Cass, MD; Katherine Rhome; Benjamin Ramser; Laura B. Ngwenya, MD, PhD

INTRODUCTION: Current practice is to discontinue antithrombotic (AT) and anticoagulant (AC) therapy after traumatic brain injury (TBI). Optimal timing for resuming therapy is uncertain, resulting in significant practice differences amongst providers. Our institutional practice is to restart therapy 2 weeks after injury and stable imaging.

METHODS: All patients presenting to the University of Cincinnati (level 1 trauma center) between February 2017 and December 2019 were entered into a prospectively maintained Neurotrauma Registry. Patients