applicable in the US. This study prospectively validates the RACE scale as administered by US-based EMS personnel in the pre-hospital setting and we compare our results to the originally published results.

Methods 232 adult patients suspected of having a stroke by EMS and transported to a participating comprehensive stroke center had the RACE scale administered prospectively and recorded in a secure web-based database. Admission NIHSS score and final diagnosis were recorded. Cerebrovascular imaging studies (CTA, MRA or DSA) were reviewed by a blinded, independent Neuroradiologist to determine LVO diagnosis. We used SAS and c-statistics to create receiver operating characteristic (ROC) curves to determine the area under the curve (AUC) and optimal cut point (CP) scores for the RACE scale. We also calculated the sensitivity, specificity, positive predictive value (PPV), negative predictive value (NPV), overall accuracy for the optimal CP score.

Results Our analysis of the predictive capability of the RACE scale showed similar predictive capacities for radiographically-confirmed LVO in patients prospectively tested in the US as compared to the original Spanish RACE scale population. The best CP score value predictive of LVO in our US-RACE study was determined to be $\geq$6, compared to the original Spanish study which was $\geq$5 (table 1). The overall prevalence of LVO as defined in our study was 13.4%, compared to a prevalence of 21.3% for the original paper's definition of LVO.

Conclusion This is the first prospective validation of the RACE scale performed in the US. These results demonstrate that the RACE scale retains the previously published predictive value in both the US and Spain in accurately identifying LVO stroke in a prehospital setting by EMS.

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O-005 VASCULAR COLLATERALIZATION MAY NOT AFFECT BLOOD GAS CHANGES IN PERI-INFARCT VASCULATURE IN HUMAN ISCHEMIC STROKE

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Introduction Ischemic stroke is a prevalent, devastating disease with high morbidity and mortality. Despite extensive research using animal models, there remains significant gaps in understanding processes of stroke in human patients. To address this, we developed a protocol to obtain and to analyze blood immediately proximal in systemic circulation and distal to a thrombus in patients undergoing mechanical thrombectomy (www.clinicaltrials.gov NCT03153683). Our goal for this project was to evaluate blood gas changes and acid/base balance during stroke and how these changes are affected by patient factors.

Methods We analyzed blood samples from the first 62 patients in the BACTRAC registry. Bicarbonate, pO2, and pCO2 values of intracranial (distal) and systemic (proximal) arterial blood relative to the occlusive thrombus were analyzed. Changes were compared in patients according to vascular collateralization as measured by CTA collateral scores.

Abstract O-005 Table 1 Comparison by CTA score of systemic and intracranial blood gasses

	CTA 0 (n=17)	CTA 1+ (n=41)	p-value
Systemic			
pO2	211.35 (64.08)	255.22 (93.98)	0.084
pCO2	39.43 (5.19)	37.66 (4.48)	0.196
Bicarbonate	22.38 (2.62)	22.12 (3.47)	0.787
pH	7.36 (0.04)	7.38 (0.06)	0.407
Intracranial			
pO2	182.25 (48.83)	215.69 (66.44)	0.077
pCO2	33.20 (9.83)	31.29 (8.87)	0.492
Bicarbonate	18.91 (5.97)	18.39 (5.61)	0.766
pH	7.36 (0.04)	7.37 (0.07)	0.426

Results Mean age was 68.9 years (25 – 95 years). 29 were male, 33 were female. 15 were current smokers (24%), and 47 were non-smokers (no smoking within the last 6 months; 76%). Overall, intracranial gas values differed significantly from systemic. Compared to systemic, mean intracranial pO2 was decreased (211.39 vs. 246.91, $p<0.001$), pCO2 was decreased (32.19 vs. 38.12, $p<0.001$, and bicarbonate was decreased (18.90 vs. 22.20, $p<0.001$). Collateralization did not significantly affect distal blood gas values.

Discussion and Conclusion A compensated metabolic acidosis is present in arterial blood gas samples immediately proximal and distal to thrombi in large vessel occlusive stroke. Vascular collateralization may not significantly affect the acid-base environment immediately distal to a large vessel occlusion.

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O-006 HISTOTRIPSY FOR INTRACEREBRAL HEMORRHAGE IN A PORCINE MODEL

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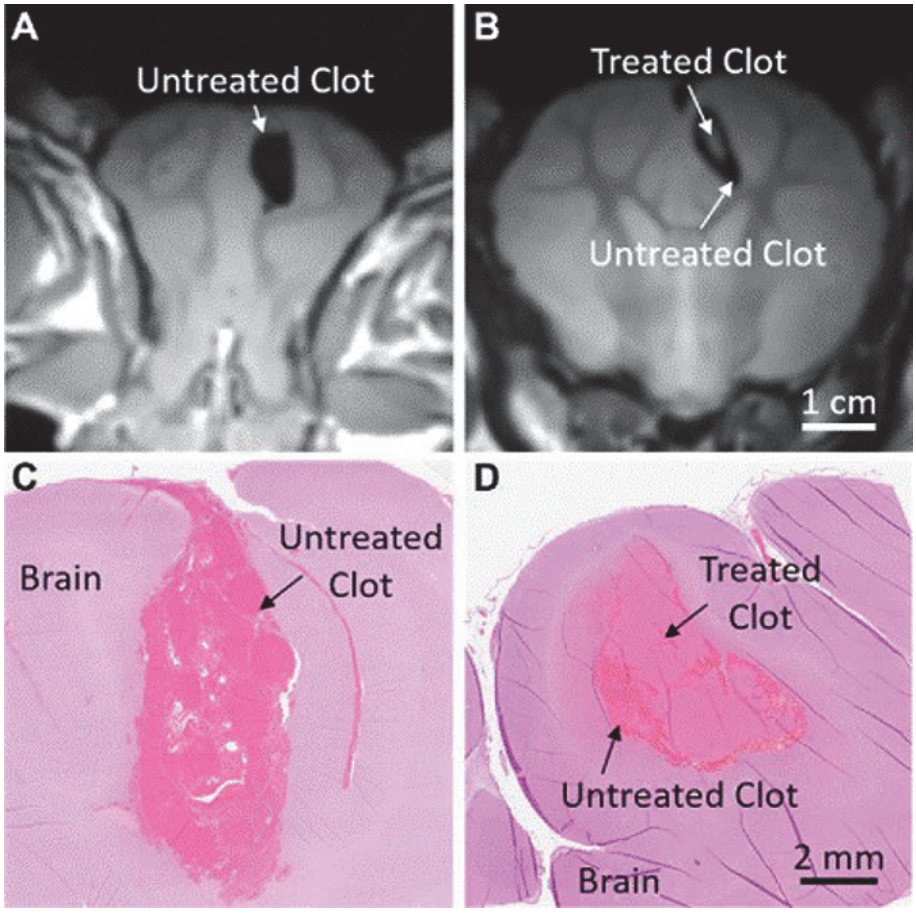
Introduction Histotripsy is a noninvasive, focused ultrasound technique that generates cavitation to mechanically fractionate tissue. Intracerebral hemorrhage (ICH) is characterized by a 30-d mortality rate of 40% and significant disability for those who survive. Histotripsy has the potential to liquefy clot in the brain and facilitate minimally invasive aspiration. We aim to investigate the initial safety concerns of histotripsy mediated clot liquefaction and aspiration in a porcine ICH model.

Methods About 1.75-mL clots were formed in the frontal lobe of the brain (n=18; n=6/group). The centers of the clots were liquefied with histotripsy 48 h after formation, and the content was either evacuated or left within the brain. A control group was left untreated. Pigs underwent magnetic resonance imaging (MRI) 7 to 8 d after clot formation and were subsequently euthanized. Neurological behavior was assessed throughout. Histological analysis was performed on harvested brains. A subset of pigs underwent acute analysis (≤6 h).



Abstract O-006 Figure 1

Results Histotripsy was able to liquefy the center of clots without direct damage to the perihematomal brain tissue. An average volume of 0.9 ± 0.5 mL was drained after histotripsy treatment. All groups showed mild ischemia and gliosis in the perihematomal region; however, there were no deaths or signs of neurological dysfunction in any groups.

Conclusion This study presents the first analysis of histotripsy-based liquefaction of ICH in vivo. Histotripsy safely liquefies clots without significant additional damage to the perihematomal region. The liquefied content of the clot can be easily evacuated, and the undrained clot has no effect on pig survival or neurological behavior.

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O-007 TRENDS IN MORTALITY AND MORBIDITY AFTER TREATMENT OF UNRUPTURED INTRACRANIAL ANEURYSM IN THE UNITED STATES, 2006–2016

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Background We aimed to assess nationally representative trends of in-hospital mortality and clinical outcome after treatment of unruptured intracranial aneurysms (UIA).

Methods The Nationwide Inpatient Sample (NIS) database from 2006 to 2016 was reviewed. Patients with unruptured intracranial aneurysm (UIA) who underwent aneurysm treatment during hospitalization were identified. Patients' demographics, comorbid conditions, length of hospital stay, rate of in-hospital mortality, discharge destination for each treatment group (microsurgical clipping and endovascular embolization). Poor clinical outcome was defined as discharge to skilled nursing facility or hospice instead of home or acute rehabilitation facility. Multivariate regression model was used to identify independent predictors of mortality and poor clinical outcome.

Results A total of 21,609 patients with UIA were identified from 2006 to 2016. The overall rate of in-hospital mortality decreased from 0.9% in 2006 to 0.2% in 2016. Overall, 83% of the patients had favorable clinical outcome. The utilization of endovascular embolization increased from 60% in 2006 to 64% in 2016. Patients who had endovascular embolization had 3 days shorter hospital stay (1 vs 4, p<0.0001) and significantly higher rate of favorable clinical outcome compared to microsurgical clipping group (91% vs 74%, p<0.0001). Patients with age ≥ 80 years [OR (95% CI); p-value: 1.05 (1.02–1.11); p=0.03], female gender [OR (95% CI); p-value: 1.21 (1.07- 1.37); p=0.002], those with higher comorbidity index [OR (95% CI); p-value: 1.11 (1.07- 1.18); p=0.002], and patients who had microsurgical clipping [OR (95% CI); p-value: 1.29 (1.11–1.69); p: 0.021] had higher rate of poor clinical outcome. Similarly, age ≥ 80 years [OR (95% CI); p-value: 1.04 (1.01- 1.06); p=0.04], higher morbidity index [OR (95% CI); p-value: 1.52 (1.25–1.85); p<0.0001] and