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LB-005 THE INSIGHT REGISTRY: A MULTI-CENTER, MULTI-OMIC STROKE CLOT STUDY, PRELIMINARY RESULTS

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Introduction Understanding clot composition and associated genomic, epigenomic, and proteomic signatures could provide insight into thrombus biology and etiology, and aid in prognosis in stroke. We report preliminary results in the first 50 subjects enrolled in this multi-omic clot collection registry. Our objective was to report our initial results from the INSIGHT Registry, a multicentered ‘multi-omic’ analysis of thrombi associated with acute hemorrhagic and ischemic stroke.

Abstracts LB-005 Table 1 Demographics and clinical characteristics

	Ischemic Stroke (N=46)	Hemorrhagic Stroke (N=4)
Age (yrs)	67.5 (37, 92); n=46	63 (56, 70); n=4
Sex		
Male	43.5% (20/46)	50% (2/4)
Female	56.5% (26/46)	50% (2/4)
Race		
Asian	0.0% (0/46)	25% (1/4)
Black/African American	13% (6/46)	0.0% (0/4)
White	73.9% (34/46)	0.0% (0/4)
Multiracial	2.2% (1/46)	0.0% (0/4)
Other	10.9% (5/46)	75% (3/4)
Comorbidities		
History of Atrial Fibrillation	10.9% (5/46)	0.0% (0/4)
Diabetes	23.9% (11/46)	25% (1/4)
Hypertension	73.9% (34/46)	50% (2/4)
Hyperlipidemia	43.5% (20/46)	50% (2/4)
NIHSS on Admission		
Minor stroke (1–4)	15.2% (7/46)	25% (1/4)
Moderate stroke (5–15)	41.3% (19/46)	50% (2/4)
Moderate/Severe (16–20)	13% (6/46)	0.0% (0/4)
Severe stroke (≥ 21)	30.4% (14/46)	0.0% (0/4)
Missing	0.0% (0/4)	25% (1/4)
NIHSS at Discharge		
Recovered (0)	17.4% (8/46)	0.0% (0/4)
Minor stroke (1–4)	28.3% (13/46)	0.0% (0/4)
Moderate stroke (5–15)	19.6% (9/46)	75% (3/4)
Moderate/Severe (16–20)	8.7% (4/46)	0.0% (0/4)
Severe stroke (≥ 21)	4.3% (2/46)	25% (1/4)
Missing	21.7% (10/46)	0.0% (0/4)
TICI Score		
TICI 0-2A	4.3% (2/46)	NA
TICI 2B	15.2% (7/46)	NA
TICI 2C	10.9% (5/46)	NA
TICI 3	69.6% (32/46)	NA
LKW to Recanalization (Minutes)	310 (119, 7230); n=42	NA

Material and Methods Subjects age ≥18 years, treated frontline with the Penumbra System for thrombectomy or the Artemis Neuro Evacuation device for minimally invasive endoscopic intracerebral hematoma evacuation as standard of care are included. Patient demographics, medical history, radiographic, and procedural information are collected in conjunction with extracted clot and concurrent extracranial arterial blood. Upon collection, clots were placed in RNAlater for preservation of protein and RNA and peripheral blood in K2EDTA tubes, allowing sample shipment at ambient temperature. RNA isolated from clot and blood were quality controlled by TapeStation and quantified by QuBit. Protein is quantified by bicinchoninic acid (BCA) assay. Genomic DNA isolated from peripheral blood is sequenced using the Illumina Infinium Global Screening Array. Follow-up clinical assessments occur at discharge and/or day 7, and at 90 days post-procedure.

Results 50 subjects were enrolled from 8 active sites between 02/2021 and 06/2021 (table 1). As expected, most enrollments were in ischemic stroke thrombectomy (46) versus intracranial hemorrhage (4), reflecting the relative incidence and utilization of those procedures. The initial dataset provided reflects real-world results consistent with published thrombectomy studies. RNA isolated from clots had an average RNA integrity score (RIN) of 4 (±1) ranging from 2–8, while RNA isolated from systemic arterial blood averaged 5 (±2) with a range from 2–9 with 1 sample fail (n=48). Total protein isolated from clots averaged 3028ug (±5407) ranging from 32–23,451ug (n=24), while total protein isolated from blood averaged 2026ug (±1265) ranging from 241–5334 (n=48).

Conclusion These preliminary results demonstrate the real-world applicability of the INSIGHT study to typical stroke thrombectomy population. Furthermore, the tissue processing protocols are providing high-quality RNA and protein for analysis, which is currently underway.

Disclosures J. Fraser: 1; C; Penumbra, University of Kentucky. 2; C; Stream Biomedical, Medtronic. 4; C; Cerelux, Fawkes Biotechnology. J. Vicari: None. A. Nanda: None. E. Cheng-Ching: None. K. Woodward: None. B. Rapoport: None. C. Kellner: None.

LB-006 COLLATERAL IMAGING OF STROKE PATIENTS IN THE LATE WINDOW PRIOR TO ENDOVASCULAR THROMBECTOMY RESULTS FROM A POOLED INDIVIDUAL PATIENT-LEVEL MULTICENTER ANALYSIS

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Background Collateral assessment using CT angiography (CTA) is promising to increase the eligibility for endovascular thrombectomy (EVT) in the late window (6–24 hours). The outcome of these patients compared to those selected using perfusion imaging is not clear. We aimed to describe the