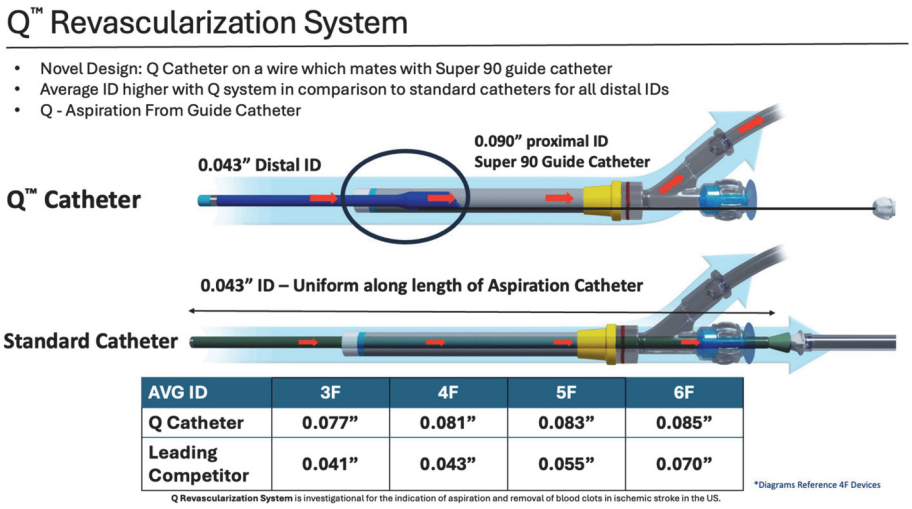

Abstract LB-006 Figure 1

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LB-007 THE IMPERATIVE TRIAL: AN FDA APPROVED PROSPECTIVE MULTI-CENTER TRIAL INCLUDING SUPER-LARGE BORE ASPIRATION THROMBECTOMY

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Introduction/Purpose This FDA approved trial, with independent adjudication of primary endpoints, was conducted to evaluate a novel aspiration thrombectomy system, including 0.088' super-large bore aspiration catheters (Zoom Reperfusion System; Imperative Care, Inc., Cambell, California). Pre-specified performance goals were established in conjunction with the FDA.

Materials and Methods Prospectively consented patients meeting inclusion and exclusion criteria were treated across 26 United States institutions from October 2021 to March 2024. Data analysis will be conducted according to the FDA approved pre-specified statistical analysis plan. All data are near-final but should be considered preliminary until final confirmation before SNIS. Endpoints reported herein include: core-lab adjudicated symptomatic intracranial hemorrhage (sICH) rate per ECASS III definition; 90-day all-cause mortality; and site-reported rate of modified Thrombolysis in Cerebral Infarction (mTICI) ≥2B achieved using the primary treatment modality (only Zoom system) without any additional therapies within ≤3 passes (ongoing core lab adjudication of angiograms will be complete by end of June 2024 and presented at SNIS). Secondary outcomes include rate of functional independence (mRS 0-2), median time to mTICI ≥2B, final mTICI ≥2B rate, use of stent retrieval thrombectomy as rescue to achieve mTICI ≥2B, and rate of rescue therapy to achieve mTICI ≥2B in ICA/M-1 occlusions according to super-large bore catheter positioning.

Results Baseline and stroke characteristics for 260 evaluable subjects are presented in table 1. Core lab adjudicated rate of sICH was 3.1% (8/260). 90-day all-cause mortality was 13% (34/255); imputing worst case scenario for five patients lost to follow-up was 15% (39/260). mTICI ≥2B within ≤3 passes without use of alternative devices was achieved in 89% (231/260), 95% CI (84%-92%); and after all passes with the Zoom system was 91% (237/260), 95% CI (87%-94%). Functional independence (mRS 0-2) was achieved in 54% (133/245) of patients. The median time from groin puncture to mTICI ≥2B was 19 (IQR 13-30) minutes. Final mTICI ≥2B rate was 97% (253/260), 95% CI (95%-99%). Stent retrieval rescue therapy required to achieve mTICI ≥2B was 5.0% (13/260). Furthermore, stent retrieval rescue therapy for ICA/M-1 occlusions was lower when super-large bore catheter positioning was higher in the carotid circulation [Cavernous or higher: 4.5% (7/154); intradural or higher: 3.4% (4/119)].

Conclusion Initial results appear promising and will be further validated through completion of core lab adjudication. While not directly comparable, these preliminary data suggest a

Abstract LB-007 Table 1 Demographic and stroke characteristics of study patients (n=260)

Age, years, median (IQR)	69.5 (60 - 79)
ICA Occlusions	33 (12.7%)
MCA - M1 Occlusions	150 (57.7%)
MCA - M2 Occlusions	62 (23.8%)
Vertebral Occlusions	0 (0.0%)
Basilar Occlusions	11 (4.2%)
Multiple Territories	4 (1.5%)
Time from Symptom Onset to Groin Puncture, hours, median (IQR)	3 (2.4 - 4.3)
NIHSS score at admission, median (IQR)	15 (10 - 20)
Baseline ASPECTS, median (IQR)	8 (7 - 10)

numerically lower rate of rescue therapy than prior thrombectomy trials. Preliminary signal suggests super-large bore catheter positioning may influence the need for stent retrieval rescue therapy.

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LB-008 ENHANCING THROMBECTOMY OUTCOMES WITH ADAPTIVE PULSATILE ASPIRATION (APA™): THE ROLE OF COMPLETE CLOT INGESTION (CCI) IN REDUCING THROMBECTOMY TIME AND DISTAL EMBOLIZATION

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Background Achieving radiographic reperfusion (TICI 3) in acute ischemic stroke thrombectomy may be an inadequate outcome measure. Unvisualized distal emboli even in the setting of TICI3 revascularization may lead to poor clinical outcomes. This study introduces a novel outcome metric, Complete Clot Ingestion (CCI). CCI is defined as full ingestion of the clot into the catheter or pump canister without any external clot remnants at the catheter tip. We hypothesizing that partially ingested ('corked') clots pose a higher risk of distal emboli.

Methods We evaluated two thrombectomy pump devices: the ALGO Smart Pump (Von Vascular, Inc, Sunrise, FL) and the Penumbra ENGINE Pump (Alameda, CA), focusing on their efficacy in achieving CCI using medium-bore aspiration catheters. The ALGO Smart Pump works by a novel mechanism of Adaptive Pulsatile Aspiration™ (APA). An in vitro model with a synthetic clot analog mimicking human thrombus was employed to conduct 300 thrombectomies across five catheters and the two pumps.

Results The ALGO Smart Pump demonstrated superior achievement of complete clot ingestion; CCI occurred in 80.0% of cases with the ALGO Smart pump compared to 38.6% with the Penumbra ENGINE Pump ($p<0.001$). In cases where CCI was achieved, thrombectomy pump and revascularization times were significantly reduced ($p<0.001$) and there were fewer distal emboli ($p<0.001$).

Conclusion Our findings suggest that the ALGO Smart Pump's Adaptive Pulsatile Aspiration (APA™) mode significantly enhances complete clot ingestion (CCI) leading to reduced procedure time and distal emboli. This study supports the adoption of CCI as a valuable metric for assessing thrombectomy efficacy, and emphasizes the need for further clinical validation to confirm these in vitro results.

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LB-009 BALLOON MOUNTED VERSUS SELF-EXPANDABLE STENT IN FAILED NEUROTHROMBECTOMY: A POST HOC ANALYSIS OF THE SAINT STUDY

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Background Previous studies demonstrated that rescue intracranial stenting in failed thrombectomy has better outcome compared to failed reperfusion. However, there is no data regarding type of stent and its impact on the outcome. We aimed to compare balloon mounted stents (BMS) to self-expandable stents (SES) in terms of clinical and procedural outcomes.

Methods It is a retrospective analysis of prospectively collected database from Stenting and Angioplasty in NeuroThrombectomy (SAINT) study. Patients were included if they had failed thrombectomy and underwent rescue stenting. Patients treated with SES or BMS were compared with inverse probability of treatment weighting. The primary outcome was the final reperfusion as measured by mTICI scale. Secondary outcomes included the shift in the degree of disability as measured by mRS, mRS0-2 and mRS0-3 at 90-days. Safety measures