Introduction Different treatment strategies employed for endovascular thrombectomy (EVT) may impact successful reperfusion and functional outcome. The ASSIST Registry is a postmarket observational study for continued evaluation of new products per their intended use. The aim of the ASSIST registry is to collect real-world data to develop clinical evidence regarding the use of various techniques of EVT in large vessel occlusions (LVOs). Analysis include evaluating which strategies are associated with first pass reperfusion and better clinical outcomes.

Methods Prospective, global, consecutive enrollment registry (up to 1500 subjects) of acute ischemic stroke patients (AIS) with LVO treatment in anterior circulation treated with multiple interventional techniques [Stentriever + Balloon guide catheter (BGC); Stentriever + Aspiration ± BGC; Aspiration ± BGC] using Stryker Neurovascular devices for the first pass. Patients will be distributed in each arm with accommodations made for reducing heterogeneity by geographical and operator location. The data from ASSIST will be analyzed using a generalized linear mixed model which will employ a binary distribution and logit link function to predict mRS. The model will accommodate any categorical and continuous variables that are shown to be confounders by separate univariate analyses, will include a random effect for site, and a four-level variable denoting the technique type.

Results A total of 1198 patients have been enrolled to date across 48 global centers. Severity of disability (90-day mRS 0-2) and procedural outcome (eTICI 2c or greater on first pass as adjudicated by core lab) will be evaluated for each technique. Secondary clinical outcomes include NIHSS drop of ≥10 points from baseline or NIHSS score of 0 or 1. Safety outcomes include mortality, neurological deterioration, symptomatic intracerebral hemorrhage (ICH) and embolization to a new territory. Baseline, follow-up and angiographic outcomes will be core lab adjudicated.

Conclusion There is limited evidence demonstrating clinical benefit or impact on outcomes based on the treatment strategy being employed to treat LVO with EVT. The ASSIST Registry will collect global real-world benchmark data on a large AIS population using the most common techniques and most recently available devices. Study results will provide valuable information on the relative effectiveness of different EVT treatment techniques and aid in the identification of optimal treatment approaches.

Disclosures R. Gupta: 1; C; Stryker Neurovascular PI ASSIST Registry, Zoll PI RECCLAIM II (No compensation), Cerenovous Steering Committee MEMBRANE study, Medtronic Steering Committee ELEVATE Study, Penumbra CEC MIND Trial, Vesalio PI CLEAR Study, Rapid Medical PI Tiger Study. A. Rai: 2; C; Stryker Neurovascular. D. Liebeskind: 2; C; Cerenovous, Stryker, Genentech, Medtronic, Rapid Medical. A. Krajina: 2; C; Stryker Neurovascular. M. Psychogios: None. T. Krings: None. W. Yoon: None. O. Zaidat: 1; C; Penumbra, Stryker Neurovascular. 2; C; Stryker Neurovascular, Penumbra, Rapid Medical, Cerenovous, Medtronic. A. Puri: 2; C; Stryker Neurovascular, Medtronic. A. Sarraj: 1; C; Stryker Neurovascular. 2; C; Stryker Neurovascular. M. Möhlenbruch: 2; C; Stryker Neurovascular, Phenox, Codman, Medtronic, Microvention.

E-003

SAFETY AND EFFICACY OF BALLOON GUIDE CATHETERS IN THROMBECTOMY FOR ANTERIOR CIRCULATION STROKE: A SYSTEMATIC REVIEW AND META-ANALYSIS

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Objective The benefit of balloon guide catheters (BGCs) in mechanical thrombectomy (MT) remains unclear. We examined the effect of BGC on procedural, radiographic, and clinical outcomes.

Methods A systematic review was conducted using PubMed, Embase, and Scopus to identify studies comparing MT for acute ischemic stroke with and without the use of BGCs. Patient demographics, procedural metrics, and outcomes were abstracted. Three-month functional outcomes were based on the modified Rankin Score (mRS).

Results Of the 2,181 resultant articles identified by the systematic review, 9 met inclusion criteria, comprising 2292 BGC and 1868 non-BGC patients. At baseline, the BGC group had a higher incidence of atrial fibrillation (43.3% versus 36.2%, $p < 0.0001$) and a lower National Institutes of Health Stroke Scale (NIHSS) score (15.8 versus 16.5, $p = 0.046$). BGC use was associated with shorter groin-to-recanalization times (55.6 versus 73.7 minutes, $p = 0.003$), improved TICI ≥ 2b reperfusion (83.8% versus 75.6%, $p < 0.0001$), lower incidence of symptomatic intracerebral hemorrhage (sICH; 5% versus 7.7%, $p = 0.046$), and lower mortality (16.4% versus 22.3%, $p < 0.0001$). BGC use, however, was also associated with a higher number of passes (2 versus 1.3, $p < 0.0001$). There was no difference in functional outcomes at 90 days.

Conclusion BGC use during MT for acute ischemic stroke is associated faster to groin-to-recanalization times, improved TICI ≥ 2b reperfusion, lower incidence of sICH, and lower mortality. These data demonstrate the promise of BGC use for MT and warrant further study.

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E-004

FOCAL INTRACRANIAL VASCULOPATHY AS A MANIFESTATION OF COVID-19-ASSOCIATED ACUTE ISCHEMIC STROKE

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Introduction COVID-19 infection has been associated with an increased risk of thrombotic events, including cerebrovascular accidents, presumed to be secondary to a systemic hypercoagulable state. These events have been reported even in young patients, without other significant vascular risk factors. We present a different, atypical case of a large-vessel occlusion (LVO) acute ischemic stroke secondary to a focal vasculopathy in a young patient with COVID-19 infection, requiring mechanical thrombectomy and emergent intracranial stenting, and we also review available literature.