Background Increasing the distal ID of aspiration catheters has been associated with higher quality and faster thrombectomies, due to a presumed higher rate of complete clot ingestion. We aimed to evaluate the recanalization efficacy of newer generation, larger bore aspiration catheters versus smaller distal ID aspiration catheters in a real world data set.

Methods We performed a multicenter retrospective analysis of consecutive acute ischemic stroke patients with M1 occlusion treated within 24 hours from the time of last known well. Patients were divided into two groups based on the distal inner diameter of the aspiration catheter used for reperfusion: 0.070” or greater (large) and 0.068” or smaller sized catheters (small). The primary outcome was the rate of TICI 2C or better reperfusion. Secondary outcomes included the rate of TICI 2B or better reperfusion, rate of recanalization on first pass, and access to successful reperfusion time. All data was self-adjudicated. No outside funding was provided for this analysis.

Results Total of 774 patients with acute M1 occlusion who underwent thrombectomy with an aspiration catheter. Larger bore catheters (with a distal ID of 0.070” to 0.074”) were used in 421 patients, while 353 patients were treated with small aspiration catheters (distal ID of 0.060 to 0.068”). There was no significant difference in the rate of TICI 2B or better (94.5 vs 94.3%, p=0.909), TICI 2C or better (62.1% vs 59.5%, p=0.451), and TICI 3 recanalization (47.6% vs 51.3%, p=0.311) between groups. However, there the larger catheter group had a significantly improved rate of first pass TICI 2C or better (46.8% vs 38.2%, p=0.017), and access time to final recanalization (20.1 minutes vs 23.1 minutes, p<0.001). Rate of hemorrhage on follow up imaging was significantly higher in the larger catheter group (15.3% vs 10.1%, p=0.038). The baseline mRS score, admission NIHSS score, and the rate of intravenous thrombolytic therapy were not different between the cohorts. The last known normal to access time was significantly higher in the small catheter group (186 minutes vs 288 minutes, p<0.001). General anesthesia was used more frequently in the small catheter group (88.1% vs 19.1%, p=0.006).

Conclusion This multicenter, consecutive real-world experience demonstrates that M1 thrombectomy with a larger distal ID catheter is associated with faster time to recanalization and higher rate of TICI 2C or better recanalization on first pass, but also with a higher rate of hemorrhage on follow up imaging.

Disclosures J. Vargas: 2; C, Cerенovus. 4; C, Truvic. S. Majidi: None. G. Cortez: None. A. Aghaebrahim: None. E. Sauvageau: None. R. Hanel: 1; C, Microvention, Stryker. 2; C, Stryker, Medtronic, Cerенovus, Balt, Q’Apel. 4; C, Rist. 6; C, MiVI. H. Hawk: None. S. Nimjee: None. A. Zakeri: None. M. Mokin: None. C. Ogilvy: None. P. Park: None. M. Psychogios: None. R. Starke: None. A. Spiotta: None.