management of AIS patients with distal vessel occlusion in comparison with the BMT alone.

Methods Retrospective analysis was conducted on AIS patients treated by MT+BMT for primary distal vessel occlusion between 2015 and 2020, and were compared with a historic cohort managed by BMT alone between 2006 and 2015 selected based on the same inclusion criteria. A secondary analysis was conducted using propensity score matching (PSM) including the following: NIHSS, age and treatment with intravenous thrombolysis (IVT) as covariates.

Results Of 650 patients screened, 44 patients with primary distal vessel occlusions treated by MT+BMT were selected and compared with 36 patients who received BMT alone. After PSM, 28 patients in each group were matched without significant difference. Good clinical outcome defined as mRS ≤ 2 was achieved by 53.6% of the MT+BMT group and 57% of the BMT group (OR, 0.87; 95%CI, 0.3–2.4; $P=1.00$). The mortality rate was comparable in both groups (7% vs 10.7% in MT+BMT and BMT patients, respectively; OR=0.64; 95% CI, 0.1–4; $P=1.00$). Symptomatic intracranial haemorrhage (ICH) was seen in only one patient treated by MT+BMT (3.6%).

Conclusion Mechanical thrombectomy seems to be comparable with the best medical treatment regarding the effectiveness and safety in the management of patients with distal vessel occlusions.

REFERENCES

1. Sarraj A, Sangha N, Hussain MS, *et al.* Endovascular therapy for acute ischemic stroke with occlusion of the middle cerebral artery M2 segment. *JAMA Neurol* 2016;**73**:1291–1296.
2. Saver JL, Chapot R, Agid R, *et al.* Thrombectomy for distal, medium vessel occlusions: a consensus statement on present knowledge and promising directions. *Stroke* 2020;**51**:2872–2884.
3. Ospel JM, Menon BK, Demchuk AM, *et al.* Clinical course of acute ischemic stroke due to medium vessel occlusion with and without intravenous alteplase treatment. *Stroke* 2020;**51**:3232–3240.

Disclosure Pr F. Clarençon reports conflict of interest with Medtronic, Guerbet, Balt Extrusion, Penumbra (payment for readings), Codman Neurovascular and Microvention (core lab). Dr N. Sourour is consultant for Medtronic, Balt Extrusion, Microvention, Stock/Stock Options: Medina. The other authors report no conflict of interest concerning the materials or methods used in this study or the findings specified in this paper.

EP49* HEMORRHAGIC TRANSFORMATION AND FIRST PASS EFFECT

¹G Meeks, ²O Zaidat, ³A Hassan, ⁴J Fifi, ⁵A Yoo, ¹S Sheth. ¹UTHealth McGovern Medical School, Houston, TX; ²Mercy Health St. Vincent Medical Center, Toledo, OH; ³University of Texas Rio Grande Valley – Valley Baptist Medical Center, Harlingen, TX; ⁴Icahn School of Medicine at Mount Sinai, New York, NY; ⁵Texas Stroke Institute, Dallas-Fort Worth, TX, USA

10.1136/neurintsurg-2021-ESMINT.48

Achieving substantial reperfusion in the first pass is a strong predictor of clinical outcomes. Its role in preventing symptomatic ICH (sICH) is incompletely characterized.

We assess the association of increasing number of passes with sICH using a large multicenter, prospectively collected international registry with core-lab adjudicated blinded imaging endpoints.

We analyzed all patients receiving EVT for LVO in the COMPLETE (Penumbra, Inc) registry. sICH at 24 hours was defined as greater than four-point increase in NIHSS associated with ICH after review by two independent physicians. Multivariable analysis adjusted for age, NIHSS, occlusion location, and ASPECTS were used to assess the likelihood of developing sICH.

Among 650 patients included in the analysis, median age was 70 [IQR 60–79] and 54% were female. Average number of passes was 1.5. First pass mTICI 2b-3 was achieved in 55.5% (358/645) while 32.2% (208/645) required two or greater attempts. sICH occurred in 25 (3.8%) and PH-2 in 20 (3.1%). We identified an increased likelihood of sICH with increasing number of attempts to achieve TICI 2b or greater (3 vs 1 pass, OR = 3.98 [95% CI, 1.05–15.0], and 4 vs 1 pass, OR = 5.04 [95% CI, 1.35–18.8]). Failure to achieve mTICI 2b or greater (79/645) was associated with increased incidence of sICH compared to first pass reperfusion (OR = 4.66, [CI 95%, 1.43–15.1]).

Achieving substantial reperfusion with the fewest number of thrombectomy attempts was associated with decreasing likelihood of sICH.

REFERENCES

1. Zaidat OO, Castonguay AC, Linfante I, *et al.* First pass effect: a new measure for stroke thrombectomy devices. *Stroke* 2018;**49**(3):660–666. doi:10.1161/STROKEAHA.117.020315
2. Maros ME, Brekenfeld C, Brooks G, *et al.* Number of retrieval attempts rather than procedure time is associated with risk of symptomatic intracranial hemorrhage. *Stroke* 2021;**52**(5):1580–1588. doi:10.1161/STROKEAHA.120.031242

Disclosure All COMPLETE trial investigators received support from Penumbra Inc

EP50* CATHETER TIP DISTENSIBILITY SUBSTANTIALLY INFLUENCES THE ASPIRATION FORCE OF THROMBECTOMY DEVICES

^{1,2}J Li, ^{3,4}O Castañón, ⁵A Tomasello, ⁵M De Dios, ^{1,2}P Canals, ^{6,7}E Engel, ^{1,2}M Ribo. ¹Departament de Medicina, Universitat Autònoma de Barcelona; ²Stroke Unit, Neurology, Hospital Vall d'Hebron; ³Electronics and Biomedical Engineering, University of Barcelona; ⁴Biomaterials for Regenerative Therapies, Institute for Bioengineering in Catalonia; ⁵Neuroradiology, Hospital Vall d'Hebron, Barcelona; ⁶CIBER en Bioingeniería, Biomateriales y Nanomedicina, CIBER, Madrid; ⁷Materials Science and Engineering, Technical University of Catalonia, Barcelona, Spain

10.1136/neurintsurg-2021-ESMINT.49

Introduction A direct aspiration first pass thrombectomy is a fast-growing technique for which a broad catalog of catheters that provide a wide range of aspiration forces can be used.

Objectives To characterize different catheters' aspiration performance on stiff clots in an in vitro vascular model.

Aims To demonstrate that labeled catheter inner diameter (labeled-ID) is not the only parameter that affects the aspiration force (asp-F) and that thrombus-catheter tip interaction and distensibility also play a major role.

Methods We designed an experimental setup consisting of a 3D-printed carotid artery immersed in water. We measured asp-F and distensibility of catheter tips when performing ADAPT on a stiff clot analog larger than catheter labeled-ID. Correlations between asp-F, catheter ID, and tip distensibility were statistically assessed.

Results Experimental asp-F and catheter labeled-ID were correlated ($r=0.9601$; $P<0.01$). The relative difference between