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EP45*

BEYOND PROXIMAL LARGE VESSEL OCCLUSIONS: OUTCOME OF MECHANICAL THROMBECTOMY IN DISTAL VESSEL OCCLUSIONS IN THE EXCELLENT REGISTRY – INTERIM ANALYSIS

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Introduction EXCELLENT (NCT03685578) is a prospective, single-arm, multicenter, real-world, international registry of mechanical thrombectomy (MT) with EmboTrap as first-line device. There is increasing interest in applying MT to acute distal vessel occlusion (DiVO), with limited data. This interim analysis evaluates the angiographic, clinical and safety outcomes in DiVO.

Aim of the Study To compare MT outcomes in Medium Vessel occlusion (MeVO) vs DiVO.

Methods MeVO was defined as proximal M2 and DiVO as distal M2, M3, P1, P2, and A2 occlusions. Independent core lab adjudicated occlusion location, reperfusion, and intracranial hemorrhage (ICH). 90-day mRS was completed by independent site investigators blinded to procedural data.

Results 64/532(12.0%) patients had MeVO, and 44/532(8.3%) had DiVO (37 M2, 4 P2, 1 A2, 1 P1, 1 M3). Final mTICI2b-3 was 87.1%(54/62) in MeVO vs 84.1%(37/44) in DiVO. First Pass (FP) mTICI2c was 17.5%(11/63) in MeVO vs 6.8%(3/44) in DiVO; while the two groups had nearly identical FP-mTICI3 (20.6% vs 20.5%). 90-day mRS 0–2 or equal to pre-stroke was achieved in 55.4%(31/56) MeVO and in 45.9%(17/37) DiVO patients. All-cause 90-day mortality was 22.4%(13/58) in MeVO and 21.4%(9/42) in DiVO. The rate of any ICH was 50.8%(31/61) in MeVO vs 37.5%(15/40) in DiVO, while subarachnoid hemorrhage was 27.9%(17/61) and 22.5%(9/40) in MeVO and DiVO, respectively.

Conclusions In this interim analysis, patients with DiVO presenting with acute ischemic stroke and undergoing MT had rates of revascularization and clinical and safety outcomes comparable to MeVO. If confirmed in the full dataset, these findings can inform MT case selection.

Disclosure EXCELLENT is sponsored by Cerenovus. Dr. Zaidat serves as a consultant for Neuravi, Stryker, Penumbra, and Medtronic.

EP46*

FIRST PASS EFFECT AND ASSOCIATED CLOT CHARACTERISTICS IN THE EXCELLENT REGISTRY – INTERIM ANALYSIS

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Introduction EXCELLENT (NCT03685578) is a prospective, single-arm, multicenter, real-world international registry of mechanical thrombectomy (MT) for stroke with the EmboTrap device as first line treatment. The study entails thrombus analysis of specimens collected with each MT pass.

Aim of the Study To compare rates of mRS 0–2 at 90 days and clot characteristics in subjects with and without first pass effect (FPE).

Methods FPE was defined as mTICI 2c/3 after one pass and non-FPE as mTICI 2c/3 after >1 pass as adjudicated by an independent core lab. Clot analysis was performed by independent central labs blinded to clinical data. mRS at 90 days was scored by investigators blinded to procedural data.

Results Overall mTICI2c/3 rates were 63.7% (326/512). FPE was achieved in 37.1% (190/512) and non-FPE in 26.6% (136/512) subjects. 90 day mRS 0–2 or equal to pre-stroke was achieved in 47.2% (75/159) with FPE and in 42.1% (51/121) non-FPE patients. All-cause 90-day mortality was 19.1% (34/178) in subjects with FPE and 26.4% (34/129) in subjects with non-FPE. Major thrombus components (mean% $\pm$ SD) were as follows: RBC: FPE 45.88 $\pm$ 20.54, non-FPE 39.08 $\pm$ 18.23, and first pass mTICI<2c/3 40.96 $\pm$ 18.84; Fibrin: FPE 24.72 $\pm$ 13.82, non-FPE 29.09 $\pm$ 15.76 first pass mTICI<2c/3 29.20 $\pm$ 14.58.

Conclusions The high rate of ‘real-world’ FPE observed in EXCELLENT was associated with improved clinical outcomes. Clots retrieved with FPE had higher RBC and lower fibrin content compared to non FPE and to first pass mTICI <2c/3 e. These preliminary findings await confirmation from analysis of the full dataset.

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EP47* INVESTIGATION OF CURRENT AND NOVEL TREATMENT STRATEGIES FOR ICA AND MCA OCCLUSIONS IN AN *IN-VITRO* THROMBECTOMY MODEL

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Introduction Various mechanical thrombectomy devices and techniques including Stentrievors and Aspiration Catheters are used in the treatment of acute ischemic stroke.¹ Balloon Guide Catheters (BGC) are commonly used to achieve flow control. A new generation of ‘Super-bore’ 088” catheters are currently being tested clinically.^{2,3}

Objective/Aim We evaluated the in-vitro revascularization performance of current and novel thrombectomy approaches.

Methods National University of Ireland Galway Research Ethics Committee approved the study. Clot analogues from human blood were used to create ICA (20 mm) and MCA (10 mm) occlusions in an In-vitro thrombectomy model. Thrombectomy setups tested were; ADAPT: Millipede 088, SOFIA, SOFIA+BGC and Combination; Millipede 088+Solitaire, SOFIA+BGC+Solitaire, SOFIA+Solitaire. 10 replicates of each test were performed. Endpoints were First Pass Effect

(FPE), Second and Third-pass success and procedural-related distal emboli from 50–1000 μ m.

Results The Millipede 088 catheter achieved the highest rate of FPE in both ICA (60%) and MCA (100%) occlusions and had the lowest number of procedural-related emboli compared to all other device setups, followed by the Millipede 088 +Solitaire technique. Of the currently used techniques, the use of a Solitaire in combination with a SOFIA lead to a higher rate of FPE in ICA occlusions (40% vs 20%, SOFIA +BGC+Solitaire vs SOFIA+BGC), but a lower rate of FPE in MCA occlusions (50% vs 60%, SOFIA+BGC+Solitaire vs SOFIA+BGC).

Conclusions The novel 0.088” aspiration catheter achieves the best FPE rates in both ICA and MCA occlusions. In terms of existing techniques, ADAPT is more effective in the MCA, while the stentrievors provide a benefit in the ICA.

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EP48* SAFETY AND EFFECTIVENESS OF MECHANICAL THROMBECTOMY FOR PRIMARY ISOLATED DISTAL VESSEL OCCLUSIONS: A MONOCENTRIC RETROSPECTIVE COMPARATIVE STUDY

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Background Distal vessel occlusions represent about 25–40% of acute ischemic stroke (AIS), either as primary occlusion or secondary occlusion complicating mechanical thrombectomy (MT) for large vessel occlusion.

Objective Our aim was to evaluate safety and effectiveness of MT associated with the best medical treatment (BMT) in the