A DELPHI CONSENSUS STATEMENT ON THE DEFINITION OF A TOUGH CLOT

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Introduction Research into challenging clots in mechanical thrombectomy has substantially increased in recent years, particularly imaging, intra-procedural, and clot properties. However, integrating them to identify a challenging occlusion is not well established.

Aim of Study Explore the opinions of neuro-interventional experts and clot researchers to define these tough clots.

Methods A modified DELPHI technique was used before and live during CLOT SUMMIT 7.0. Panelists answered three iterative question rounds in which they indicated their certainty level from 1 (very uncertain) to 4 (very certain) on the association of 30 specific clot features as indicators for difficult-to-recanalize target occlusions. The features were grouped into 5 domains: histological, imaging, biomechanical, procedural, and clinical factors. Consensus was defined as greater than 50% agreement. Certainty levels of 3.0 or greater were regarded as high certainty.

Results After a total of 3 DELPHI rounds, consensus was reached on 16 of 30 questions, where 8 were of high certainty (27%). They were combined to produce a holistic definition of a challenging clot: A clot that could be white colored or calcified, that is stiff, hard, sticky or adherent, with possible calcification visible on imaging, and during thrombectomy is difficult to pass and resistant to pulling.

Conclusion A live DELPHI consensus from experts in thrombectomy and clot research suggest the features of a challenging/tough clot, which may narrow focus for future development of specialized tools for a priori identification of tough clots.

Disclosure of Interest MM and PB are employees of Cerenovus leading to complete occlusion of the right M1 segment. The test article (NevaNet) was compared to gold standard stent-retriever thrombectomy with the Solitaire device (Medtronic, Irvine CA). Block randomization and 10 replicate experiments for each device were performed. Number of passes for complete recanalization were measured and all effluent was separately collected from the MCA and ACA territories for emboli analysis.

Results FPE was achieved in all cases with the Neva Net and only 60% with the control device (p=0.03). Median number of clot fragments with a diameter of 1 mm or more was 4-fold higher with the control device versus the Neva Net (p=0.037). More clot fragments with diameters between 0.2 and 1 mm were found in the control group versus the Neva Net (p=0.048).

Conclusion Stent-retrievers with embolic filters reduce the amount of thromboemboli and show increased first pass complete recanalization.

Disclosure of Interest VA,ME: Nothing to disclose
RN; Vesalio
MG: No relevant disclosures

NEXT GENERATION STENT-RETRIEVER WITH INCORPORATED EMBOLIC FILTER

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Introduction First pass effect (FPE) and final full reperfusion are strongly related to good clinical outcome. Stent-retriever thrombectomy produces numerous emboli reducing the rates of FPE.

Aim of Study Stent-retrievers with built in distal emboli filters (Neva Net, Vesalio) improve FPE and reduce distal emboli.

Methods Simulated use mechanical thrombectomy of a validated middle cerebral artery occlusion was conducted in a model system composed of a human vascular replica of the entire circle of Willis. The replica was perfused with blood mimicking fluid at physiologically correct pressure and flows. A friable bovine clot was introduced into the right ICA
Conclusion Combined use of BGC and aspiration catheter during thrombectomy may be effective in patients with anterior LVO.

Disclosure of Interest nothing to disclose

Abstracts

P145/93 IMPACT OF COLLATERALS STATUS ON OUTCOMES OF MECHANICAL THROMBECTOMY – IN VITRO STUDY

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Introduction The presence or lack of an extensive cerebral collateral net is becoming more widely considered as an independent prognostic factor in stroke patients.

Aim of Study We aimed to assess whether the extent of collaterals had modifying effects on first-pass recanalization (FPR) and distal emboli measures (DEM) in mechanical thrombectomy (MT).

Methods Two in-vitro neurovascular models were created: good collaterals model (GCM) and poor-collaterals model (PCM). Two models were identical up to the M2 segment of middle cerebral artery (MCA). The GCM included anastomoses of the M2-MCA branches with anterior cerebral arteries and vertebrobasilar circulation. In the PCM these anastomoses were missing. Synthetic uniform clots (stiffness=95.77 ±5.80 kPa) were embozied to the M1-MCA. In all cases MT was performed using Solumbra technique. The primary outcome measure was FPR. The secondary outcomes assessed DEM.

Results Sixty MTs were performed (thirty experiments per study arm). The overall rate of FPR was 32%. FPR was higher in GCM (57%) than in PCM (7%; *p<0.001). Maximum embolus size (1.51±1.31 mm vs. 0.58±0.46 mm; *p=0.001), mean embolus size (MES) (0.95±1.1 vs. 0.35 ±0.28; *p<0.01), total area of emboli (2.49±3.45 vs. 0.41 ±0.64; *p<0.01), and total count of emboli >1 mm (0.97 ±1.03 vs. 0.27±0.69; *p<0.01) in the new territory as well as MES (0.78±0.88 vs. 0.39±0.56; *p<0.05) and area of emboli >1 mm (2.03±8.43 vs. 1.86±3.33; *p<0.01) in a previously affected territory were also lower in GCM than in PCM.

Conclusion The degree of collateral circulation may modify MT outcomes. Good collaterals might facilitate the achievement of FPR and prevent distal embolization.

Disclosure of Interest Magda Jablonska has nothing to disclose.
Jiahui Li has nothing to disclose.
Riccardo Tiberi has nothing to disclose.
Alejandro Tomasello reports receiving consulting fees from Anaconda Biomed, Balt, Medtronic, MicroVention, Cerus, Merlin Medical, and Stryker.
Marc Ribo is a consultant for Medtronic, Ceravenus, Vesaio.

P146/118 NEVA ONE REGISTRY INTERIM ANALYSIS: RECANALIZATION OUTCOMES FROM A LARGE, REAL-WORLD PATIENT COHORT

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Introduction The NeVa stent retriever has proven its safety and performance for treating large vessel occlusion (LVO) in acute ischemic stroke (AIS) across multiple clinical studies including the most recently published CLEAR Trial. This trial was conducted under rigorous scrutiny, with independent boards adjudicating outcomes. Real-world data is helpful in assessing the reproducibility of patient outcomes.

Aim of Study NeVa ONE is a multicenter, international, prospective registry designed to assess outcomes in a real-world cohort of patients.

Methods AIS LVO patients treated with NeVa either as first-line or as a rescue device are included. This interim analysis reports performance results of 175 subjects from 15 centers in 7 countries treated with NeVa used as first-line device. Study endpoints are successful (TICI2b-3) and/or complete (TICI 2c-3) recanalization at first pass (mFPE/FPE), up to three passes, and at procedure end. Secondary endpoints include neurological deterioration at 24 hours and device/procedure-related adverse events.

Results Mean patient age was 71±14 years. Most frequently reported conditions in medical history included: Hypertension (39%); Dyslipidemia (19%); Diabetes (14%) and Atrial Fibrillation (14%). Median admission-NIHSS was 16 (IQR:12–20). IV-PA was administered in 43.1% of subjects. Occlusion sites were missing. Synthetic uniform clots (stiffness=95.77 ±5.80 kPa) were embozied to the M1-MCA. In all cases MT was performed using Solumbra technique. The primary outcome measure was FPR. The secondary outcomes assessed DEM.

Conclusion NeVa ONE Registry represents real-world data obtained from LVO AIS subjects treated with NeVa.

Disclosure of Interest Nothing to disclose

P147/148 TRANSRADIAL ACCESS FOR MECHANICAL THROMBECTOMY: TECHNICAL OUTCOMES AT OUR INSTITUTION

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Introduction Transradial access (TRA) is becoming more widely considered as an independent prognostic factor in stroke patients.

Aim of Study We aimed to assess whether the extent of collaterals had modifying effects on first-pass recanalization (FPR) and distal emboli measures (DEM) in mechanical thrombectomy (MT).

Methods Two in-vitro neurovascular models were created: good collaterals model (GCM) and poor-collaterals model (PCM). Two models were identical up to the M2 segment of middle cerebral artery (MCA). The GCM included anastomoses of the M2-MCA branches with anterior cerebral arteries and vertebrobasilar circulation. In the PCM these anastomoses were missing. Synthetic uniform clots (stiffness=95.77 ±5.80 kPa) were embozied to the M1-MCA. In all cases MT was performed using Solumbra technique. The primary outcome measure was FPR. The secondary outcomes assessed DEM.

Results Sixty MTs were performed (thirty experiments per study arm). The overall rate of FPR was 32%. FPR was higher in GCM (57%) than in PCM (7%; *p<0.001). Maximum embolus size (1.51±1.31 mm vs. 0.58±0.46 mm; *p=0.001), mean embolus size (MES) (0.95±1.1 vs. 0.35 ±0.28; *p<0.01), total area of emboli (2.49±3.45 vs. 0.41 ±0.64; *p<0.01), and total count of emboli >1 mm (0.97 ±1.03 vs. 0.27±0.69; *p<0.01) in the new territory as well as MES (0.78±0.88 vs. 0.39±0.56; *p<0.05) and area of emboli >1 mm (2.03±8.43 vs. 1.86±3.33; *p<0.01) in a previously affected territory were also lower in GCM than in PCM.

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