limited by local vessel structures and may lack neurovascular feeder vessels. Limited feedback devalues assessment of particulation and downstream migration of devices/materials. NAU's Bioengineering Devices Lab has developed an in vitro blood flow and stroke model, which replicates the conditions of the neurovascular system. In prior workings, the in vitro model has quantified material particulation via filtration to capture particles and microscopy to analyze captured particles. Now, the process is a non-invasive method that has been developed in this study to allow researchers to quantify and characterize particles in real-time.

Materials and Methods These improvements are made possible through the utilization of digital imaging processing and total internal reflection fluorescence microscopy (TIRFM). A CMOS camera captures fluorescent particles in movement through the in vitro system through an in-line cuvette. A developed algorithm is advancing to process images and characterize particles (figure 1). During the procedure, PPODA-QT is injected into the in-vitro model's aneurysm bubble and particulate downstream migration data is collected in real-time. The system integrates LabView (National Instruments, TX) to view and collect images. The pump delivers pulsatile flow with pressure profile that can be tuned to physiological conditions. The study then concentrates on the particulate downstream migration through the modified in-line cuvette section.

Results Long and short term testing is performed on the material to determine the potential material efficiency within the vascular system. Analysis of real-time data will quantify particle size and count. Results are then compared to (<USP 788> - table 1) regulations.

Abstract E-099 Table 1 (<USP 788>) Specifications for injectable liquids and particulate size

Particulate Size	Required Specs
> 100 µm	0 particles
25 µm to 100 µm	< 300 particles
10 µm to 25 µm	< 3000 particles

Conclusion The study results will help predict device performance within the neurovascular system to affirm the safety of the polymer biomaterial, PPODA-QT, in practical usage. Utilizing state of the art equipment and procedures, new innovative research can be conducted.

Disclosures I. Smith: None.

E-100 TRANS-CAROTID THROMBECTOMY AFTER FAILED TRANS-FEMORAL ACCESS: A CASE SERIES

[1]M Aly*, [1]R Abdalla, [2]M Hurley, [1]A Shaibani, [1]S Ansari. [1]*Intervention Radiology, Northwestern University, chicago, IL*; [2]*Intervention Radiology, Northwestern University, Chicago, IL*

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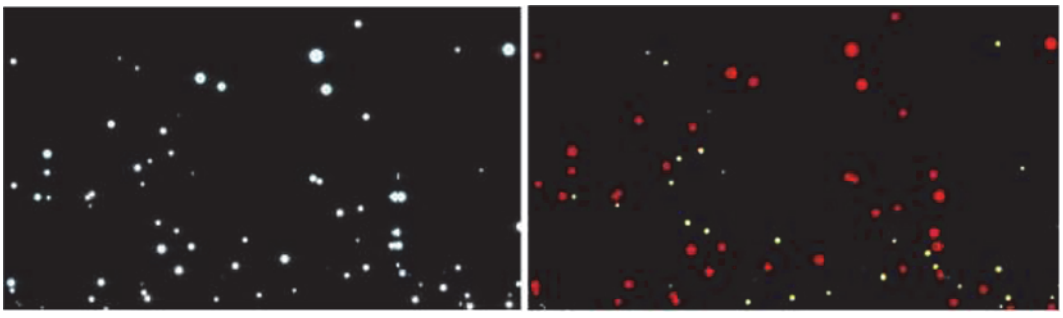
Purpose Rapid recanalization is vital for mechanical thrombectomy (MT) of large vessel occlusion stroke. Trans-femoral and trans-radial approaches for internal carotid catheterization are routinely used in MT. Due to difficult/impossible and time-consuming attempts to access severe type 2/3 aortic arch anatomy and tortuous cervical vasculature, a trans-carotid access is sometimes required. We describe a care series of trans-carotid stroke thrombectomy to assess its technical and clinical efficacy. Additionally, we quantitatively study the overall angular tortuosity from the aortic arch to the carotid bifurcation required for trans-carotid access, comparing against successful trans-femoral access age-matched controls.

Methods We retrospectively studied 8 patients that underwent MT for anterior circulation acute ischemic stroke between Jan 2015 to June 2019 requiring trans-carotid access. Using age-matched controls (>80 years of age), we compared demographics, presentations, complications, technical and clinical efficacy. All 8 cases of carotid access and 8 age-matched controls were also qualitatively and quantitatively analyzed for aortic arch anatomy type and number of cervical vascular tortuosity segments >90 degrees. Using CTA 3D reconstructions, angular path changes were summated along the segmented vessel from the aortic arch to the carotid bifurcation and analyzed as a sum of angular tortuosity from the horizontal baseline of the aortic arch. Chi-square was used for categorical variables univariate analysis while Mann-Whitney U and student t-tests were used for continuous variables univariate analysis as appropriate based on the distribution normality.

Results Both trans-carotid and control groups matched in age (89.8 and 89.6 years respectively), and both groups were comparable regarding their NIHSS (16 vs 20, p=0.26), side of occlusion (right, 62.5% vs 37.5%, p=0.32), and risk factors of hypertension, DM, hyperlipidemia, smoking, CHF, or AF (p=0.52, 1, 0.13, 1, 0.32, 0.36 respectively). However, the transcarotid group presented with a higher incidence of previous stroke/TIA (62.5% vs 12.5%, p=0.04). The mean number of more than 90-degree tortuous segments was higher and was trending to be significant in transcarotid cohort (1.2 +- 0.8 vs 0.3 +- 0.75, p=0.55). The sum of angle tortuosity (371 +- 165 vs 214 +- 86, p=0.14), and the presence of type 3 aortic arch (62.5% vs 25%, p=0.13) were higher in



Abstract E-099 Figure 1 An image of non-fluorescing particles. The images are captured and then processed to accumulate particle characteristics numerically and visually through color-coding

the trans-carotid group, but not statistically significant. There was no difference between groups regarding the 90-days mRS outcome (3.88 vs 3.87, p=0.95). Two patients in transcarotid group suffered an iatrogenic cervical ICA dissection and a small pseudoaneurysm 1 × 5 mm without incident. Two patients also developed neck hematomas that were managed with conservative manual compression.

Conclusion A trans-carotid approach is a relatively safe alternative to transfemoral approach in MT, and may be considered in patients with a type 3 aortic arch, cervical vasculature with >1 tortuous segment (>90 degrees), and/or an angular tortuosity summing >360 degrees from the aortic arch to the carotid bifurcation. These patients were more likely to be older and have a history of previous stroke/TIA.

Disclosures M. Aly: None. **R. Abdalla:** None. **M. Hurley:** None. **A. Shaibani:** None. **S. Ansari:** None.

E-101 LOW DOSE EPTIFIBATIDE IN THE MANAGEMENT OF TANDEM OCCLUSION

[1]A Jost*, [2]C Roels, [3]M Brown, [4]R Janjua, [3]D Heck. *[1]School of Medicine, Wake Forest University, Winston Salem, NC; [2]Pharmacy, Forsyth Medical Center, Winston Salem, NC; [3]Radiology, Forsyth Medical Center, Winston Salem, NC; [4]Neurosurgery, Forsyth Medical Center, Winston Salem, NC*

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Introduction Tandem intracranial/extracranial occlusion presents a challenge due to the coincident risks of symptomatic intracranial hemorrhage (SICH) and carotid re-occlusion. Various anti-thrombotic regimens have been reported with mixed results for SICH, but infrequent analysis of cervical carotid patency. We present a single center, retrospective analysis of tandem occlusion patients treated with low dose eptifibatide, with emphasis on rates of hemorrhage and rigorous reporting of cervical carotid artery patency. The work is unique due to the completeness of vessel imaging follow-up.

Materials and Methods N=58 patients were administered a low dose perioperative eptifibatide regimen (135 mcg/kg bolus, 1 mcg/kg/min infusion) during intracranial thrombectomy and extracranial carotid angioplasty ± stent placement. A prospective database was reviewed retrospectively for patient characteristics, clinical and imaging outcomes. Determination of SICH was per the SITS-MOST definition. Management of the intracranial occlusion by direct aspiration (ADAPT) or combination therapy (CAPTIVE) was per physician choice, as was management of the extracranial lesion with stenting or angioplasty alone. Patients were converted to dual oral anti-platelet therapy with aspirin and clopidogrel or ticagrelor if the 24 hour ultrasound and CT demonstrated carotid patency and no significant hemorrhage.

Results The average age and NIHSS were 64 and 16, respectively, with tPA use in 43% of cases. ASPECTS scores were 8–10 in N=47 (81%) and 5–7 in N=11 (19%). N=38 patients had stenting acutely, while N=20 had angioplasty alone, 6 of whom had delayed endarterectomy or stenting within the first week. All patients had brain imaging within 24–36 hours. Any evidence of intracranial hemorrhage was present in n=18 (29%), mostly petechial or small subarachnoid hemorrhage, with only one case of SICH (2%). Technical success (TICI 2B or 3) was achieved in N=56 (96%). 90 day MRS was documented by phone or in person in 57/58 patients (one patient lost to follow up). 90 day MRS of 0–2 was achieved in N=42 (72%), with MRS of 6 in N=5 (9%). All patients had duplex within 36 hours. There were N=4 (7%) acute re-occlusions, all in patients originally treated with stenting. N=49 patients had carotid imaging at 30–60 days (5 deceased, 3 not done, 1 lost to follow up), with an additional N=3 re-occlusions (6%), two of whom had stents and one angioplasty alone. Carotid artery patency at 30–60 days for patients imaged was 86% (42/49). No acute or delayed carotid occlusion was associated with clinical decline, and 5/7 (71%) had 90 day MRS of 0–2.

Conclusion Within this cohort, low dose eptifibatide in the tandem occlusion population seemed to be safe with a low incidence of SICH. Cervical carotid artery re-occlusions did occur with an overall 30–60 day patency of 86%. Re-occlusion was not associated with clinical decline in any patient. In the absence of a control arm, it is unknown whether cervical carotid patency is improved with low dose eptifibatide compared to any other regimen. All conclusions are limited by the small sample size, retrospective nature of the study, and lack of core lab adjudication of outcomes.

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E-102 ECONOMIC AND CLINICAL MODEL FOR DIRECT TRANSFER TO ANGIOSUITE PROTOCOL DEVELOPMENT

[1]M Requena*, [2]V Seguel, [1]M Olivé-Gadea, [1]Á García-Tornel, [1]A Vilaseca, [1]N Rodríguez-Villatoro, [1]M Deck, [1]J Juega, [1]S Boned, [1]M Muchada, [1]C Piñana, [1]J Pagola, [1]D Rodríguez-Luna, [1]D Hernández, [1]M Rubiera, [1]C Molina, [1]A Tomasello, [1]M Ribo. *[1]Stroke Unit, Vall d'Hebron University Hospital, Barcelona, SPAIN; [2]Neurovascular Health Economics and Reimbursement, Medtronic UK, Watford, UK*

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Introduction Direct transfer to angiosuite (DTAS) has consistently shown to be effective and safe shortening in-hospital workflows and encouraging long-term outcome benefits. In order to generalize DTAS an organizational and manpower effort is necessary. We aim to perform a cost-effective analysis of the implementation of a new angiography suite primarily dedicated to DTAS of stroke patients that will allow generalization of this pathway.

Material and Methods 61 patients who underwent endovascular treatment (EVT) following DTAS were matched for baseline variables to 117 patients who underwent conventional