clot length is correlated with a greater number of passes and longer time to revascularization.

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O-007 RECANALIZATION AND OUTCOME COMPARISONS IN ACUTE ISCHEMIC STROKE PATIENTS TREATED WITH MECHANICAL THROMBECTOMY SELECTED BY CT/MR PERFUSION IMAGING VERSUS CT ANGIOGRAPHY

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Purpose Several randomized controlled trials, have demonstrated improved percentages of independent clinical outcomes with computed tomography (CT)/magnetic resonance (MR) perfusion selection in acute ischemic stroke (AIS), albeit with more stringent patient exclusion. Conversely, preprocedure CT angiography (CTA) is gaining increasing credence among neurointerventionalists for documenting emergent large vessel occlusion and as a surrogate for tissue selection via collateral imaging. In this study, we compared the level and times to recanalization as well as clinical outcomes in patients selected for endovascular thrombectomy based on their perfusion versus single phase CTA imaging selection.

Materials and methods We performed a prospective IRB approved multicenter study of consecutive AIS patients presenting <6 hours from symptom onset that underwent mechanical thrombectomy. Patients were selected after CTA/MRA confirmed ICA/MCA M1-M2 occlusion and either CTP/MRP (favorable mismatch ratio/core infarct volumes) or CT/CTA (ASPECTS >6 and pial collaterals >2/3 MCA) imaging selection. Patient demographics, baseline NIHSS score, THRIVE score, symptom onset to groin puncture times, and the type of thrombectomy devices utilized for recanalization were studied. Modified Rankin Scale score of 0–2 at 90 days defined good functional outcome. Recanalization was delineated by the neurointerventionalist at the end of the thrombectomy according to modified TICI classification. Ordinal recanalization scores of 0, 1, 2, 3, and 4 were assigned to TICI classification of 0, 1, 2a, 2b, and 3, respectively for further evaluation of recanalization reperfusion level. TICI scores of 2 b and 3 defined successful recanalization Chi-square, student t test, Mann-Whitney U, and Kruskal-Wallis tests were utilized for statistical analysis as appropriate.

Results Seventy patients (37 F/33 M, mean age±SD of 64.43 ± 15.08 years) were recruited into the study. Based on preprocedure imaging, consecutive patients were selected for endovascular thrombectomy either by CTA (n = 35) or perfusion studies (n = 35). Both groups were comparable in terms of demographics, NIHSS score, THRIVE score, and thrombectomy devices utilized for recanalization. Symptom onset to groin puncture time was significantly lower in the CTA group (mean = 138.50 min in CTA VS. 224.25 min in perfusion groups, P = 0.012). Recanalization scores were not significantly associated with the type of thrombectomy devices (P = 0.782). Although recanalization scores were significantly higher in patients selected by CTA compared with perfusion imaging (P = 0.020), successful recanalization (TICI 2 b/3) was not significantly different (P = 0.155). There was a non-statistically significant trend for good functional outcome in CTA group (P = 0.07). Good functional outcome was associated significantly with successful recanalization (P < 0.005).

Conclusions Mechanical thrombectomy patients selected by CTA or perfusion imaging demonstrated no difference in successful recanalization rate, but higher level of recanalization/reperfusion and a trend of improved outcomes with CTA selection that may be attributed to improved treatment times.

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O-008 FUNCTIONAL AS OPPOSED TO ANATOMICAL CHARACTERIZATION OF THE MIDDLE CEREBRAL ARTERY "M2" DIVISIONS CAN EXPAND THE CATEGORY OF LARGE VESSEL OCCLUSIONS AMENABLE FOR STROKE INTERVENTIONS.

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Background M2 occlusions have typically been excluded from endovascular stroke trials. However variations in the size of the MCA branches and the area of brain they supply runs the risk of excluding a dominant trunk supplying a large part of the brain and hence resulting in a significant ischemic injury. Perfusion imaging allows a more functional depiction of the vascular territory and maybe more relevant for endovascular selection.

Objective To determine the rate of M2 occlusions amongst all hospital discharges for acute ischemic stroke (AIS) and to functionally classify occlusion severity based on baseline perfusion imaging and final infarct volume. To secondarily extrapolate this rate to the national inpatient sample (NIS) database for estimating the annual burden of M2 occlusions that may benefit from endovascular therapy.

Methodology All hospital discharges for AIS (ICD-9 codes 433.xx, 434.xx 435.xx) over a 3 year period from a large rural hospital system were screened for an M2 occlusion based on admission imaging. These were classified into the superior or inferior trunk based on anatomy and dominant or non-dominant division based on size. The occlusion severity was graded on time-to-peak (TTP) perfusion imaging as a proportion of the entire MCA. Infarct volume on follow up imaging represented the final ischemic injury. The results were extrapolated to the NIS-database.

Results Out of 2757 AIS hospital discharges 118 (4.3%) patients were identified with an M2 occlusion. 71 (60.2%) of these patients presented within 6 hours and 47 (39.8%) after 6 hours of last seen normal (LSN). Baseline perfusion (TTP) and follow-up imaging was available for 75 patients. The superior trunk (ST) was involved in 36 (48%) and the inferior trunk (IT) in 39 (52%) patients. In 27 (75%) patients with ST involvement, it was the dominant division versus 36 (92.3%) patients with IT occlusion had it as the dominant division (p = 0.037). Overall a dominant division was occluded in 63 (84%) patients and a non-dominant in 12 (16%) patients. In 47 (74.6%) patients with a dominant branch occlusion (ST or IT) the TTP abnormality was >1/3rd of the MCA distribution versus 5 (41.7%) patients with a non-dominant branch occlusion that had >1/3rd MCA involvement (p = 0.02). Patients with a dominant branch occlusion