

P-007 POOR COLLATERALS ON PRE-TREATMENT CT ANGIOGRAPHY PREDICTS POOR OUTCOME AFTER SUCCESSFUL RECANALIZATION IN PATIENTS WITH ANTERIOR CIRCULATION EMERGENT LARGE VESSEL OCCLUSION

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Background and purpose The best imaging selection technique for endovascular treatment (EVT) remains a topic of debate. Collateral scores (CS) on pre-treatment CT angiography (CTA) have been associated with favorable outcome. We hypothesized that low CS on pre-treatment CTA may predict a poor outcome after EVT in successfully recanalized patients with emergent large vessel occlusions (ELVO).

Methods A retrospective chart review was performed for the University of Tennessee Health Sciences Center Acute Ischemic Stroke Database evaluating AIS patients presenting with CTA confirmed anterior circulation ELVO in a tertiary stroke center during a 3 year period. Only patients with successful recanalization (TICI 2 b or 3) after EVT were included in the analysis. A blinded neuroradiologist calculated the CTA CS and final infarct volume (FIV). Poor outcome after EVT was defined as symptomatic intracranial hemorrhage (SICH), cerebral edema requiring hypertonic treatment for ≥ 48 hours, hemicraniectomy, higher FIV, and poor clinical outcome of modified ranking scale (mRS)-score 3–6 at 3 months.

Results 58 AIS patients with anterior circulation ELVO (mean age 63 ± 13 years, 48% male, median admission NIHSS-score: 17 points, IQR 14–21) had successful recanalization after EVT. Systemic thrombolysis was administered in 38 patients (65.5%). A total of 31 patients (53%) achieved favorable outcome (FO). There was no significant difference in rates of hemicraniectomy ($p = 1.000$) and SICH ($p = 0.667$) after EVT when compared to patients with low and good CS. Patients with low CS tended to have higher rates of cerebral edema requiring hypertonic treatment (30% vs 13%, $p = 0.340$) after EVT. Patients with low CS had greater FIV (111 ± 71 vs 41 ± 66 cm³, $p = 0.007$) and higher rates of poor clinical outcome (82% vs 39%, $p = 0.017$) in comparison to patients with high CS. A low CS was independently associated with poor clinical outcome ($p = 0.048$) in multiple logistic regression models adjusting for demographics, vascular risk factors, pretreatment SBP, admission NIHSS, intravenous thrombolysis, and onset to revascularization time.

Conclusion Low CS on pre-treatment CTA was correlated with significantly worse outcome despite successful recanalization as evident by higher FIV and higher rates of poor clinical outcome. Poor CS should be considered an important variable in futures trials comparing the medical versus interventional management of patients with ELVO.

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P-008 EVALUATING RACIAL/ETHNIC DISPARITY IN ENDOVASCULAR THROMBECTOMY OUTCOME FOR ACUTE STROKE PATIENTS: 4,763 PATIENTS USING PREMIER DATA 2011 TO 2015

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Introduction Prediction of outcome following endovascular thrombectomy in acute stroke is mostly related with the extent of ischemic injury and time treatment window. We were interested in understanding race/ethnicity-related differences in outcome of acute stroke patients who received endovascular thrombectomy with respect to variance in admission demographics and comorbidities during the acute hospitalization phase using the Premier database. Previous studies reported that black patients had significantly lower rates of overall endovascular thrombectomy utilization in the U.S. However, race/ethnicity related outcome in endovascular thrombectomy has not been reported previously.

Methods We utilized the Premier data (2011 to 2015) including 4,763 adults (age ≤ 18) with acute stroke who received endovascular thrombectomy using ICD-9 procedure and chronic/acute comorbidity using ICD-9 diagnostic code for as well as demographic profiles based on administration data. We analyzed outcomes using the patients' ethnicity as independent variables to evaluate racial disparity in endovascular thrombectomy. We identified variables for (1) comorbidities; hypertension, diabetes mellitus, hyperlipidemia, coronary artery disease, congestive heart failure, atrial fibrillation/flutter COPD, tobacco/alcohol dependence and morbid obesity, (2) Socio-economic status; age, sex and races/ethnicities were categorized as binary variables as white versus non-white and black versus non-black and hispanic versus non-hispanic. Chi-square analysis used for binary independent factor race variables. Race variables categorized as (1) white, (2) black, and (3) others. The Bonferroni correction was applied to compare means among groups. We compared in-hospital outcome including mortality, post-operative stroke and functional outcome using discharge disposition; home versus transferred to other hospital or not adjusting acute and chronic comorbidity using multiple logistic regression (SAS 9.4).

Results The mean age for endovascular thrombectomy patients with acute stroke was 66.8 years (SD ± 15.4 years) with 58% > 65 years old; 51.2% females; 70.7% whites, 12.1% blacks, 0.2% hispanics and 17% others. Black and hispanic races received relatively low rate of endovascular thrombectomy utilization compared to white ($p = 0.001$). As comorbidities, 76.1% had HTN, 33.2% DM, 50.3% HLD, 28% CAD, 20.7% CHF, A fibrillation or flutter 44.9%, 2% COPD, 12.2% chronic renal failure, 10.5% acute renal failure, 18% tobacco dependence, 1.5% alcohol dependence, 4.2% morbid obesity, 2.3% Pneumonia, 5.0% Sepsis and 5.2% MI. As an outcome makers, in-patient mortality 16.7% (white 16.8%, black 14.9%, hispanic 0% and others 17.6%), discharge to home 28.7% (white 28%, black 31.4%, hispanic 22.2% and others 30%) versus disposition to any facility 71.3% (white 72%, black 69.6%, hispanic 77.8% and others 70%), and post thrombectomy stroke was 6.3% (white 6.5%, black 5.4%, hispanic 0% and others 6.3%). Since number of hispanics is very small, we divided the cohort into three racial groups: