Abstracts

E-155 IMPACT OF PRE-TREATMENT CEREBRAL MICROBLEEDS ON HEMORRHAGIC TRANSFORMATION FOLLOWING SUCCESSFUL RECANALIZATION BY ENDOVASCULAR TREATMENT IN PATIENT WITH ACUTE ISCHEMIC DUE TO LARGE ARTERY OCCLUSION

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Background and Purpose We analyzed the association between pretreatment cerebral microbleeds (CMBs) and hemorrhagic transformation (HT) after successful recanalization by endovascular treatment (EVT) in patients with acute ischemic stroke due to large vessel occlusion (LVO).

Methods A total of 116 acute ischemic stroke patients successfully recanalized by EVT for emergent LVO were enrolled in this prospective cohort study. CMBs and hemorrhagic transformation on T2*-MRI using a validated scale were rated by an experienced neuroradiologist. The primary outcome was hemorrhagic transformation after EVT. We investigated association of CMB presence and burden with HT. The secondary outcome was defined as poor functional outcome with modified Rankin Scale scores at 3 months of 3 to 6.

Results Among 116 patients (mean age 66.2±14.0, male 78%), 18 (15.7%) had CMBs and 52 (45.2%) had HT. There was statistically significant association between the presence of CMB and HT after EVT in patients with successful recanalization (77.8% versus 3.1%, P=0.003). The presence or number of CMBs was not associated with poor functional outcomes.

Conclusions These results indicate that the presence of CMBs were related to HT after EVT. However, there is no impact of pretreatment of CMBs on poor functional outcome in patients with successful recanalization by EVT.

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E-156 RESCUE STENTING WITH SELF-EXPANDABLE AND BALLOON-MOUNTED STENTS FOR ACUTE LARGE VESSEL STROKE AFTER FAILED MECHANICAL THROMBECTOMY PRESUMABLE DUE TO UNDERLYING INTRACRANIAL ATHEROSCLEROSIS: SYSTEMATIC REVIEW

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Introduction Underlying intracranial atherosclerosis (ICAS) has been reported as one of the main causes of failure to revascularization after mechanical thrombectomy (MT) in acute large vessel ischemic stroke. Rescue therapy with permanent stenting has some favorable evidence from retrospective databases and prospective cohorts. Self-expandable (SES) and balloon-mouted stents (BMS) had been used as rescue therapy in this setting.

Objective To assess the benefit and safety at 90 days of acute rescue intracranial stenting in patients who failed mechanical thrombectomy, presumable due to underlying intracranial atherosclerosis with a subgroup analysis based on the type of stent used.

Methods A systematic review in accordance with PRISMA guidelines was conducted. Searches were conducted using the PubMed/Medline, Scopus, Embase, and Cochrane databases up to March 12, 2022, including randomized clinical trials (RCT) and observational studies describing 90 days outcomes in large vessel stroke who underwent MT with refactory occlusion presumable due to underlying ICAS, type of stent used was clearly described on the publication. Our primary outcome was functional independence, defined as modified Rankin Scale score (mRS): 0–2. Safety outcomes were 90 days mortality, symptomatic intracranial hemorrhage (sICH) and all ICH.

We performed a meta-analysis using the random effect model, Freeman-Tukey double arcsine transformation was used to stabilize the proportion variances. Heterogeneity was evaluated using the I^2 and considered high if over 70%.

Results Seventeen studies (n=974) were included for systematic review. Fifteen studies included patients who received any stent (n=527), and eight studies did not use any stent (n=447). Thirteen studies used SES (n=465); two studies used BMS (n=62). Pooled estimate proportion of functional independence at 90 days among patients who received any stent was achieved in 50.1% (95% IC:41.1–59.1, I2:73.3%) and 25.0% (95%IC: 9.0–46.0, I2: 94.5%) in patients with no stent. Same outcome was present in 51.1% (95% IC:41.4–60.5, I2:73.3%) and 44.2% (95% IC:18.6–73.2, I2:55%) in patients with SES and BMS, respectively. Mortality at 90 days was 16.1% (95%IC:10.7–23.5, I2:63.1%) among patients who received any stent and 30.0% (95%IC:16.0–45.0, I2:89.3%) with no stent. Symptomatic intracranial hemorrhage (sICH) was 7.9% (95%IC: 5.6–11.1, I2:0%) among patients who received any stent, and 7.0% (95%IC:2.0–13.0, I2:72.7%) with no stent. All ICH was present in 11.1% (95%IC:6.6–18.2, I2: 0%) and 18% (95% IC: 12.0–24.0) respectively.

Conclusion Our study shows decent functional independence in patients with acute large vessel stroke who received any rescue stenting after failed mechanical thrombectomy presumable due to underlying intracranial atherosclerosis. The subgroup of patients who received SES presented the higher estimated pooled proportion of functional independence. Mortality, symptomatic intracranial hemorrhage, and all ICH were comparable in all groups. The study is limited by high heterogeneity, and unavailability of studies that directly compared to best medical treatment or a specific type of stent. Rescue stenting should be directly compared with the best medical treatment for failed MT in a randomized trial.

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Introduction/Purpose To evaluate the feasibility and safety of basilar artery stenting in patients with symptomatic basilar artery or intradural vertebral artery stenosis in the setting of acute stroke intervention.

Material and Methods Review of our neurointerventional database and identification of all patients who underwent emergent intracranial stenting of the basilar artery or intradural vertebral artery, either as the first line treatment for emergent stroke intervention or as rescue treatment after mechanical thrombectomy between July 2017 and November 2021. Patient characteristics and outcomes, procedural and imaging follow up information was collected.

Results A total of 14 patients (9 males) with mean age of 67 years (range 44 to 89 years) were identified. Median mRS at baseline was 0 (range 0 to 3). Patients’ NIHSS at presentation ranged from 1–24 with mean NIHSS of 7. Seven patients underwent mechanical thrombectomy using a combination of stent-retriever and aspiration immediately prior to stent placement. Passes performed ranged from 1 to 4 with TICI 2c and 3 achieved in 5 cases, TICI 2b in 1 case and TICI 2a in another case. Two patients received intra-arterial tPA. Vessel stenosis in all cases ranged from 50 to 99%. After the stenting procedure TICI 3 was seen in 12 cases, TICI 2b and 2a in one case each. Neuroform EZ and Onyx Resolute were the most used stents. Eight patients were initiated on intravenous antiplatelet medication (either integrilin or cangrelor) after stent placement. One patient was loaded with aspirin post stenting procedure and 5 patients were already on dual antiplatelet medication prior to presentation. Three procedure related complications were seen with 2 subarachnoid hemorrhages due to vessel injury and one in-stent thrombosis withing 24 hours. Two of these patients unfortunately passed away. Another patient expired due to poor neurological status (NIHSS 24 at presentation). One more patient expired after discharge due to a cardiac arrest. At 3 months, follow up was available for 7 patients (50%). Four patients had died, 1 patient was lost to follow up and 2 patients did not yet reach the time point for clinical/imaging follow-up. For the 7 patients available, mRS at 3-months was 0–2 in all cases. Follow up imaging was available between 3 and 18 months (either CT angiogram or conventional angiogram) and showed patent stents in 6 cases. One patient showed complete occlusion of the stent without associated symptoms.

Conclusion Emergent intracranial stenting for symptomatic stenoses in the posterior circulation is feasible and safe when compared to the natural history of the disease.

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