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Direct mechanical thrombectomy with or without bridging thrombolysis in patients with acute ischemic stroke: a systematic review and meta-analysis of randomized trials

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outcomes. However, without complete ingestion of the clot, much of it remains outside of the catheter and can be a source of distal emboli. Super Large Bore Aspiration (SLBA) has shown high rates of complete clot ingestion. We report the initial clinical feasibility, safety, and efficacy of this novel SLBA-insert combination- Super Large-bore Ingestion of Clot (SLIC technique) for stroke. SLIC entails a triaxial assembly of an 8 Fr 0.106' Base Camp catheter, 0.088' catheter extender (HiPoint) and an insert catheter (Tenzing 8), that completely consumes the inner diameter of the 0.088' SLBA catheter. The HiPoint catheter is delivered over the Tenzing 8 to the face of the embolus, which is withdrawn, while aspirating through the Base Camp and HiPoint catheters as a single assembly.

Materials and Methods Retrospective review of three comprehensive stroke center databases between February 2021 and January 2022 and identification of patients treated using the SLIC technique. Data collection and analysis was performed under an Institutional Review Board approved protocol. Patient selection for endovascular treatment was based on advanced imaging with non-contrast head CT, CT angiography and/or CT perfusion. Patients included in this series were found to have a large cerebral vessel occlusion with viable ischemic penumbra (6–24 hours) in the vascular territory supplied by the occluded target artery. Clinical and procedural data of the group of patients undergoing SLIC thrombectomy were extracted.

Results Thirty-three patients with large vessel occlusion were treated with SLIC. Mean patient age was 70 years (range 30–91 years) and 17 patients were male (51.5%). The median presenting NIHSS was 21 (range 1–34) and median ASPECTS score was 8 (range 5–10). Successful delivery of the 0.088' catheter to the site of the occlusion was achieved in all cases. Successful revascularization defined as mTICI≥2B was seen in 100% using a single pass in most of the cases (82%). Final mTICI≥2C was achieved in 94.1% of patients, with 73.5% mTICI3 recanalization. The rate of first-pass effect in achieving excellent reperfusion defined as mTICI≥2C was seen in 70.5% of cases. There were no adverse events or post-procedural symptomatic intracranial hemorrhages.

Conclusion Our initial experience with the SLIC technique resulted in achieving first-pass effect (mTICI≥2C) in 70.5%. Navigation of the SLBA catheter extender over the Tenzing insert was successful and safe in this early experience.

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O-068 DIRECT MECHANICAL THROMBECTOMY WITH OR WITHOUT BRIDGING THROMBOLYSIS IN PATIENTS WITH ACUTE ISCHEMIC STROKE: A SYSTEMATIC REVIEW AND META-ANALYSIS OF RANDOMIZED TRIALS

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Introduction/Purpose Current published guidelines and meta-analyses comparing direct mechanical thrombectomy (MT) alone versus MT with bridging intravenous thrombolysis suggested that MT alone is non-inferior to MT with bridging thrombolysis in achieving favorable functional outcome. Because of this controversy, we aimed to systematically update the evidence and meta-analyze data from randomized trials comparing MT alone versus MT with bridging thrombolysis.

Materials and Methods We searched three databases, MEDLINE (through Ovid), EMBASE, and the Cochrane Library from inception to December 14, 2021, to identify randomized trials comparing clinical outcomes, including favorable functional outcome and mortality at 90 days, successful reperfusion, defined as modified TICI score ≥2b, and symptomatic intracranial hemorrhage (sICH), between those who underwent MT alone and those who underwent MT with bridging thrombolysis. We pooled and reported the incidence of these outcomes and calculated the measures of association by risk ratio (RR). We assessed the certainty of the evidence using the Grading of Recommendations, Assessment, Development and Evaluations (GRADE) approach, and the risk of bias of all included studies using the Cochrane risk-of-bias tool (RoB).

Results Out of 11,109 citations, we identified 51 eligible studies, and included six studies: two post-hoc analyses of randomized trials, and four randomized trials. The total number of patients included was 2,305. The age (years) of the subjects was 69.97 ± 12.28 (mean ± SD). All studies used intravenous alteplase (0.6 – 0.9 mg/kg bolus) for thrombolysis. When comparing MT alone versus MT with bridging, we found no statistically significant difference in favorable functional independence (RR, 1.07; 95% CI, 0.94, 1.21), mortality at 90 days (RR, 0.83; 95% CI, 0.66, 1.06), successful reperfusion (RR, 1.04; 95% CI, 1.00, 1.07), or sICH (RR, 1.17; 95% CI, 0.84, 1.64). Risk of bias was high across all identified studies.

Conclusion Our meta-analysis showed that adjunctive therapy with intravenous thrombolysis may not provide added benefit to patients undergoing mechanical thrombectomy in terms of functional outcome, mortality, successful reperfusion, or symptomatic bleeding, which is consistent with previous analyses. Further research is needed to clarify which patient subgroups would benefit from either modality.

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O-069 EFFECT OF INTRAVENOUS THROMBOLYSIS BEFORE ENDOVASCULAR THERAPY ON OUTCOMES IN PATIENTS WITH LARGE CORE INFARCT: INSIGHT FROM THE STAR REGISTRY

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Background The utility of intravenous thrombolysis (IVT) before mechanical thrombectomy (MT) remains a matter of debate. The data regarding the safety and efficacy of IVT prior to MT in patients with large core infarct is scarce.

Objective To compare the functional and safety outcomes between patients with large core infarct due to LVO treated with IVT and MT to those treated with MT alone.

Methods This is a retrospective analysis of the Stroke Thrombectomy Aneurysm Registry (STAR). Large core infarct was defined as Albert Stroke Program Early CT Score (ASPECTS) ≤5. Patients with large core infarct due to anterior circulation large vessel occlusion (internal carotid artery occlusion, M1 segment occlusion, or tandem occlusion) treated with MT were enrolled in this study. Patients were divided into two groups based on pretreatment intravenous thrombolysis (IVT +, IVT-). The association between IVT and favorable outcome (mRS 0–2) or significant intracranial hemorrhage (PH2 or sICH) was assessed using a logistic regression model adjusted for age, sex, admission NIHSS, onset to groin time, and pre-stroke mRS.

Results Of 6151 patients enrolled in the STAR registry during the study period, 398 patients (mean age 67.5 14 years, median NIHSS 19, median onset to groin 321 minutes) met our inclusion criteria and were included in the final analysis. Favorable outcome was achieved in 27.3%, and 17.4% in the IVT+ and IVT- groups (p=0.027), respectively. Significant ICH (sICH or PH2) occurred in 16.9% and 13.1% in the IVT+ and IVT- groups (p-0.26), respectively. In an adjusted logistic regression model, IVT was not associated with favorable outcomes (OR, 1.78; 95% CI 0.91–3.48) or significant hemorrhage (OR, 1.36; 95% CI 0.71–2.59).

Conclusion Patients with large core infarct due to large vessel occlusion treated with intravenous thrombolysis and mechanical thrombectomy had comparable outcomes to those treated with mechanical thrombectomy alone.

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O-070 DIRECT TO CT/ANGIO – A METROPOLITAN SINGLE CENTER EXPERIENCE WITH SUBSTANTIALLY DECREASED TIME TO THROMBECTOMY

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Introduction/Purpose In the setting of ischemic stroke, rapid recanalization is associated with higher likelihood of functional independence. Patients undergoing reperfusion within the first 2.5 hours of symptom onset show a 91% rate of functionally independent outcome.[1] Optimizing outcomes in patients undergoing mechanical thrombectomy requires fast workflow, and several models have been proposed to decrease time. Our study outlines time outcomes in a direct to angio suite model in which the angio suite is directly accessible and contains a room with combined angio/CT, thus bypassing the emergency department. These outcomes are compared to a traditional pathway that does involve evaluation in the emergency room.

Materials and Methods Data on 152 strokes arriving to a single site from years 2017–2022 was collected. A total of 141 of these were intervened upon for an endovascular thrombectomy. Procedural times were recorded, including time of arrival, time from arrival to patient arrival in angio suite ('IR arrival'), time from IR arrival to groin puncture (GP), and time of recanalization to a score of TICI 2B or higher.

Results A total of 152 patients with 141 thrombectomies were routed in a single metropolitan center over the course of 4 years. Those encompassing the traditional pathway took approximately 146 minutes from arrival to TICI 2B recanalization time, while those in direct to angio took 87 minutes ($p<0.0001$). Figure 1 outlines time metric comparison between traditional and direct to angio pathways. Table 1 outlines this breakdown based on transfer status, a well-known impediment to timely recanalization. There was no significant difference in recanalization time for transfer patients in terms of timing, regardless of the pathway taken (traditional vs