There was no difference between clot HU density on NCCT among these 3 groups (48.8 ± 8.5 , 50.1 ± 7.2 , and 51.0 ± 8.4 , $P=0.56$). In the stent retriever first group, there was no difference in perviousness or HU density of clot in patients with TICI 2c/3, TICI 2b or TICI 0–2a after first pass (perviousness 21.6 ± 17.0 , 22.4 ± 18.04 and 22.6 ± 22.9 , $P=0.97$; HU on NCCT 48.7 ± 9.1 , 49.7 ± 6.5 and 46.7 ± 9.0 , $P=0.47$). In multivariate analysis using a model that included use of intravenous tPA, balloon guide catheter use, onset to groin puncture and age, perviousness of more than 10 was the only independent factor predictive of successful recanalization (defined as TICI 2b–3) after first pass in the aspiration first group with odds ratio of 3.4 (95% CI 1.0–12.0). We did not find any significant predictors of successful reperfusion (TICI 2b–3) after first pass in the stent retriever first group.

Conclusions Clot perviousness values are associated with first pass angiographic success in patients treated with the aspiration first approach for thrombectomy. Additional research is needed to determine if clot perviousness may be used to identify patients who are more likely to have successful recanalization with aspiration when deciding between aspiration versus stent retriever first approaches.

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E-058

SAFETY AND OUTCOMES OF INTRA-ARTERIAL TISSUE PLASMINOGEN ACTIVATOR AS AN ADJUNCTIVE TECHNIQUE FOR DISTAL EMBOLIZATION – INSIGHTS FROM STAR

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Introduction Early studies have shown that using intra-arterial thrombolysis is effective in achieving recanalization in patients with acute ischemic stroke. However, the using intraarterial thrombolysis was associated with a high rate of symptomatic hemorrhagic transformation (sICH). In current practice time, intra-arterial thrombolysis using tissue plasminogen activator (IA-tPA) can be used as an adjunctive technique in the setting of persistent distal occlusion during mechanical thrombectomy (MT).

Methods We used data from the Stroke Thrombectomy and Aneurysm Registry (STAR), which included the prospectively maintained databases from 28 thrombectomy-capable stroke centers in the US, Europe, and Asia. We included only consecutive patients who received MT using second generation thrombectomy devices. Then, we identified patients who received 5–10 mg of IA-tPA injected directly to the target vessel because of persistent distal occlusion during MT. We collected the baseline characteristics, procedural metrics, rate of sICH, and long-term functional outcomes. We estimated a Generalized Linear Model (GLM) with logit link to assess predictors of sICH, successful recanalization (Thrombolysis in Cerebral Infarction score ≥ 2 b), and favorable 90-day functional outcomes (modified Rankin scale 0–2 at 90-day).

Results A total of 154 patients received IA-tPA out of 1608 thrombectomy patients who were included in this analysis. Median age was 68 (IQR 57–76) years; 79 (51.3%) were females; 97 (63%) were white. There was no difference in stroke severity measured by the National Institute of Health stroke scale (NIHSS) (17 vs. 15, $P=0.079$) or Alberta Stroke Program Early CT (ASPECT) score (9 vs. 9, $P=0.16$) between patients in the IA-tPA group compared to the non-IA-tPA group, respectively. In addition, no difference was noted in the prevalence of stroke risk factors (hypertension, diabetes, atrial fibrillation, prior stroke) between both groups. IA-tPA group had less patients who have received IV-tPA (33.8% vs. 54.9%, $P<0.001$) and longer onset-to-groin time (281 vs. 249 min, $P=0.003$) (table 1). Patients in the IA-tPA group achieved similar rates of successful recanalization (73.4% vs. 74.6%, $P=0.736$) and favorable functional outcomes (40.9% vs. 40.8%, $P=0.976$). On multivariate analysis, using IA-tPA was not independently associated with sICH (RR 0.761, 95% CI 0.323–1.798, $P=0.535$), successful recanalization (OR 0.888, 95% CI 0.589–1.339, $P=0.572$), or favorable functional outcomes (OR 1.065, 95% CI 0.72–1.575, $P=0.752$).

Abstract E-058 Table 1

	IA-tPA group (N=154)	non-IA-tPA group (n=1454)	P-value†
Age, median (IQR)	68 (57-76)	70 (59-78)	0.09
Females, n (%)	79 (51.3%)	733 (50.4%)	0.834
White, n (%)	97 (63%)	918 (63.1%)	0.971
HTN, n (%)	115 (74.7%)	1016 (69.9%)	0.215
DM, n (%)	52 (33.8%)	395 (27.2%)	0.082
Afib, n (%)	43 (27.9%)	468 (32.2%)	0.28
Prior stroke, n (%)	10 (6.5%)	132 (9.1%)	0.282
Admission NIHSS, median (IQR)	17 (10-22)	15 (10-20)	0.079
ASPECT score, median (IQR)	9 (7-10)	9 (7-10)	0.16
Posterior circulation, n (%)	11 (7.1%)	121 (8.3%)	0.612
IV-tPA, n (%)	52 (33.8%)	798 (54.9%)	<0.001
Onset to groin, median (IQR)	281 (194-472)	249 (162-370)	0.003
mTICI≥2b, n (%)	113 (73.4%)	1085 (74.6%)	0.736
Length of stay in days, median (IQR)	8 (5-14)	7 (4-13)	0.83
Procedure time, median (IQR)	48 (24-87)	49 (25-90)	0.766
sICH, n (%)	8 (5.2%)	94 (6.5%)	0.539
90-day mRS, median (IQR)	3 (1-6)	3 (1-5)	0.752
Good 90 day outcomes, n (%)	63 (40.9%)	593 (40.8%)	0.976

†Calculated using chi-square test for categorical variables and Wilcoxon test for the continuous variables (because of the non-normal distribution).

Abbreviations: Afib: atrial fibrillation, ASPECT: Alberta Stroke Program Early CT, DM: Diabetes, HLD: hyperlipidemia, HTN: hypertension, IV-tPA: intravenous tissue plasminogen activator, mRS: modified Rankin scale, mTICI: modified Thrombolysis in Cerebral Infarction, NIHSS: National Institute of Health stroke scale, sICH: symptomatic intracerebral hematoma.

Conclusion The use of IA-tPA as an adjunctive treatment to mechanical thrombectomy due to persistent distal occlusion did not result in a higher rate of successful recanalization, 90-day functional independence, or sICH.

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E-059

VERSATILE CEREBROVASCULAR PLATFORM FOR EVALUATION AND DEVELOPMENT OF THROMBECTOMY TECHNOLOGIES

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Introduction Cerebrovascular test beds for large vessel occlusion (LVO) stroke are widely used to evaluate and develop