

Abstracts

Abstract O-010 Table 3 Proportions of documented LVO among patients arriving within 5 hrs of LKW

Characteristic	N	Anterior LVO No. (%)	P-value univariate	Adjusted OR(95% CI)	P-value multivariate
Age, years					
Age<80	7,627	698 (9.2)	Reference		
Age≥80	3,848	414 (10.8)	<0.01	0.85 (0.74-0.99)	0.03
Gender					
Male	5,546	478 (8.6)	Reference		
Female	5,929	634 (10.7)	<0.01	1.07 (0.94-1.22)	0.31
Race/ethnicity					
White, Non-Hispanic	9,289	924 (9.9)	Reference		
Black/African American	2,186	188 (8.6)	0.055	0.70 (0.58-0.84)	<0.01
Residential Zip Code, Median Income					
>\$50,000	3,651	306 (8.4)	Reference		
<\$50,000	7,824	806 (10.3)	<0.01	1.06 (0.92-1.23)	0.43
Residential Zip Code Population Density					
Urban	2,506	262 (10.5)	Reference		
Non-Urban	8,969	850 (9.5)	0.14	1.00 (0.85-1.18)	0.95
Presenting Hospital Stroke Certification					
Comprehensive/Thrombectomy-Capable	6,770	906 (13.4)	Reference		
Primary	4,705	206 (4.4)	<0.01	0.32 (0.27-0.38)	<0.01
Baseline Ambulation					
Independent	9,504	976 (10.3)	Reference		
with Assistance	589	38 (6.5)	<0.01	0.42 (0.30-0.57)	<0.01
Stroke Severity					
NIHSS≤5	6,971	181 (2.6)	Reference		
NIHSS>5	4,504	931 (20.7)	<0.01	6.81 (5.89-7.88)	<0.01

Abstract O-010 Table 4 MT rates among early arrival patients with a LVO

Characteristic	N	MT-treated No. (%)	P-value univariate	Adjusted OR(95% CI)	P-value multivariate
Age, years					
Age<80	698	476 (68.2)	Reference		
Age≥80	414	250 (60.4)	<0.01	0.71 (0.53-0.95)	0.02
Gender					
Male	478	318 (66.5)	Reference		
Female	634	408 (64.4)	0.45		
Race/ethnicity					
White, Non-Hispanic	924	602 (65.2)	Reference		

Black/African American	188	124 (66.0)	0.83		
Residential Zip Code, Median Income					
>\$50,000	306	204 (66.7)	Reference		
<\$50,000	806	522 (64.8)	0.55		
Residential Zip Code Population Density					
Urban	262	158 (60.3)	Reference		
Non-Urban	850	568 (66.8)	0.05	1.47 (1.07-2.02)	0.02
Presenting Hospital Stroke Certification					
Comprehensive/Thrombectomy-Capable	906	594 (65.6)	Reference		
Primary	206	132 (64.1)	0.69		
Baseline Ambulation					
Independent	976	666 (68.2)	Reference		
with Assistance	38	22 (57.9)	0.18	0.56 (0.28-1.11)	0.09
Stroke Severity					
NIHSS≤5	181	70 (38.7)	Reference		
NIHSS>5	931	656 (70.5)	<0.01	4.81 (3.41-6.83)	<0.01

Conclusions Black stroke patients underwent MT less frequently than Whites, likely in part due to longer times from LKW to hospital arrival and a lower rate of documented aLVO. Further studies are needed to assess whether extending the MT time window and more aggressive LVO screening protocols mitigate this disparity.

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O-011 OUTCOMES OF MECHANICAL THROMBECTOMY IN STROKE PATIENTS PRESENTING WITH LOW ASPECTS IN THE EARLY AND LATE WINDOW-INSIGHT FROM STAR

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Introduction Limited data is available about the outcomes of mechanical thrombectomy (MT) in stroke patients presenting with a large core infarct. We aim to investigate the safety and efficacy of MT in patients with large vessel occlusion and Alberta Stroke Program Early CT Score (ASPECTS) of 2-5.

Methods Data from Stroke Thrombectomy and Aneurysm Registry (STAR), which combined the prospectively maintained databases of 28 thrombectomy-capable stroke centers in the US, Europe, and Asia, was interrogated. We identified thrombectomy patients presenting with an occlusion in the Internal carotid artery (ICA) or M1 segment of the middle cerebral artery (MCA). Multivariable regression analysis was performed to assess factors associated with favorable 90-day outcome (modified Rankin scale 0-3), including interaction terms between ASPECTS 2-5 and receiving MT in the extended window (≥ 6 hours from symptom-onset).

Results Among MT patients who presented with ICA or M1 occlusion, 2132 had ASPECTS ≥ 6 and 213 patients had ASPECTS 2-5. Patients in the low ASPECTS group were younger (70 vs. 72 years old, $P=0.003$) and more likely to present with an ICA occlusion (47.9% vs. 28.8%, $P<0.001$) compared to patients with ASPECTS ≥ 6 . At 90 days, mRS 0-3 was observed in 36.6% of the patients who presented with ASPECTS 2-5 (42% in patients who had successful recanalization and 10.8% in patients who had failed recanalization, $P=0.001$) (figure 1). Lower ASPECTS and presenting in the extended window were both associated with worse 90-day outcomes after controlling for potential confounders, without significant interaction between these two factors.

Conclusion More than one in three patients presenting with ASPECTS (2-5) may achieve favorable 90-day functional outcome following MT. Favorable outcome was 4 times higher in low ASPECTS patients who had successful recanalization. The effect of low ASPECTS on 90-day outcome did not differ in patients presenting in the early versus extended MT window.

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O-012

EVIDENCE OF ARTERIAL COLLAPSE IN A HUMAN BRAIN MODEL AND IN-VIVO WITH ASPIRATION THROMBECTOMY

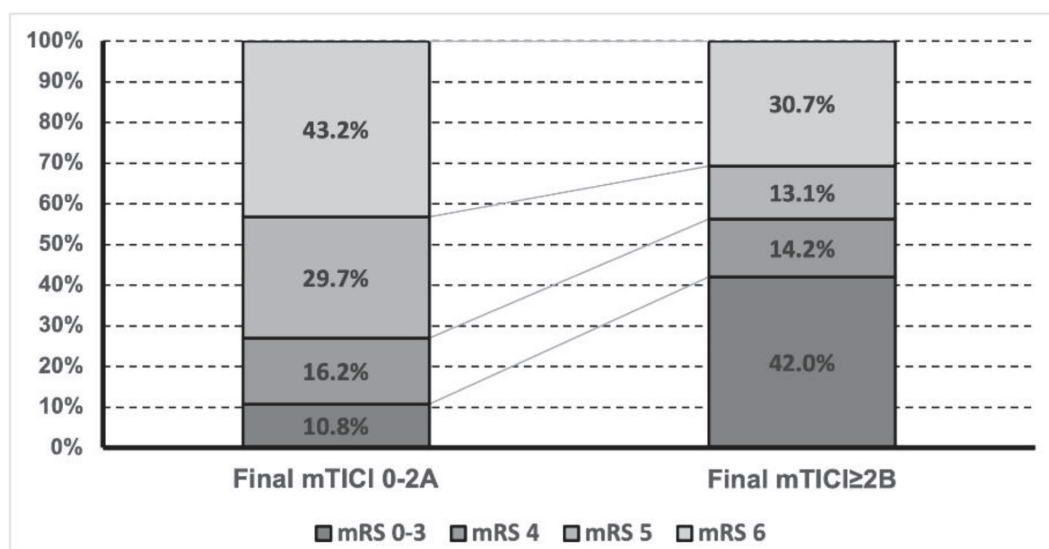
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Introduction New generation aspiration catheters have larger bore size and are equipped with stronger aspiration pumps to provide higher aspiration force. We analyzed the mechanical response of cerebral arteries under aspiration thrombectomy in preclinical models and characterized the features affecting the likelihood and severity of arterial collapse.

Materials and Methods Fresh whole human brains (n=9) were harvested and connected to a saline flow system with physiologically representative pressure and flow rates. Aspiration thrombectomy (n=168, 54 in M1, 52 in M2, and 62 in BA) was carried out with commercially available suction catheters (56 using ACE64, 55 using ACE68, and 57 using Sofia 6F) connected to a pump (Gomco 405, -650 mmHg), under different blood perfusion pressures (85, 58, and 0 mmHg). Arterial wall responses were recorded via direct transluminal observation. A total of 168 tests over nine brains were carried out with the arterial wall response graded and analyzed. Then, aspiration thrombectomy was performed with a Sofia 5F catheter connected to pump (Gomco 405, -650 mmHg) in vivo in the abdominal aorta of adult new Zealand white rabbit (n=3) and size of the arterial lumen continuously evaluated by intravascular optical coherence tomography (OCT).

Results Arterial collapse was observed in both experimental models. In the brain model, arterial walls collapsed in 88% of



Abstract O-011 Figure 1