Oral Abstracts

**O-001** PREDICTORS OF THE FIRST PASS EFFECT WITH NEUROTROMBECTOMY FOR ACUTE ISCHEMIC STROKE

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**Introduction** Achieving complete revascularization after a single attempt with mechanical thrombectomy (First pass effect, FPE) in the setting of an acute ischemic stroke due to large vessel occlusion (LVO) is associated with significantly higher rates of a good clinical outcome. We aim to identify predictors of FPE in a large real-world registry of patients undergoing thrombectomy.

**Methods** Data were analyzed from the STRATIS registry – a prospective, nonrandomized study of patients undergoing neurothrombectomy with the Solitaire device. A total of 984 patients treated at 55 sites were analyzed. Univariate and multivariable logistic regression was used to assess the relationship between patient characteristics (demographics, clinical, occlusion location, collateral grade) and procedural features with FPE. Complete data was only available for 930 patients.

**Results** First pass effect was achieved in 40% (n=372) of patients. Patients in the FPE group were older (69 ± 15 vs 67 ± 15 years, p = 0.02) and had less internal carotid artery (ICA) occlusions (17% vs 28%, p = 0.001). While rates of symptomatic intracranial hemorrhage (0.6% vs 2.2%, p = 0.13) were comparable, rates of mRS 0–2 at 90 days were higher (66% vs 49%, p = 0.001) and mortality at 90 days (12% vs 19%, p = 0.008) were lower in the FPE group compared to the non-FPE group. Multivariable regression analysis identified absence of ICA occlusion (p = 0.01), the use of a balloon guided-catheter (p = 0.001) and better collateral grade (p ≤ 0.001), as independent predictors of FPE.

**Conclusion** Non-ICA site of occlusion, the use of a balloon-guided catheter and better collateral grade are independent predictors of FPE. Further understanding of these factors may influence choice of thrombectomy device and technique.


**O-002** PREDICTORS OF UNFAVORABLE OUTCOMES AND MORTALITY DESPITE SUCCESSFUL RECANALIZATION: AN ANALYSIS OF ARISE II DATA


**Background** A significantly large number of patients with emergent large vessel occlusion (ELVO) fail to achieve favorable outcomes despite successful recanalization. Why some patients do not achieve functional independence despite successful recanalization is an important question. There is a paucity of prospective data on the predictors of unfavorable outcomes despite successful recanalization during mechanical thrombectomy for ELVO.

**Objective** This study was performed to determine the predictors of unfavorable outcomes in patients receiving successful recanalization (modified thrombolysis in cerebral infarct, mTICI grade ≥ 2b) in a prospective multicenter cohort of patients with ELVO.

**Methods** This was a secondary analysis of data collected from ARISE II study (Analysis of Recanalization in Ischemic Stroke With EmboTrap). ARISE II was a prospective, multicenter single arm study on the efficacy of EmboTrap Revascularization Device. Patients who achieved mTICI score of 2b or greater within 3 passes were included in this study. Patients with incomplete follow up were excluded from the study. A univariate and multivariate logistic regression was performed to determine the independent predictors of unfavorable outcomes at 90 days (defined as mRS 3–6). The variables tested as predictors included age, gender, collateral grade, ASPECTs, mode of transfer, National health institute stroke scale (NIHSS) score, use of intravenous tissue plasminogen activator, number of passes, clot location, final mTICI and symptomatic intracranial hemorrhage (sICH). Odds ratio (OR) with 95% confidence interval (CI) were reported.

**Results** One hundred seventy six patients were included in this secondary analysis of ARISE II data. Unfavorable outcomes (mRS=3–6) at 3 months were seen in 52 (29.6%) patients. Females constituted 54.88% of total population. Mean age was 67.15 years. Mean NIHSS score was 15.85 ± 4.71. M1 was the most common site of occlusion with 54.55% followed by M2 (25.0%) and ICA (15.91%). Delay from stroke onset to the deployment of stent retriever was 3.97 ± 1.44 hours. Ninety-five (51.14%) patients required a single pass. On univariate logistic regression analysis age, ASPECTs, collateral grade, time from stroke onset to the deployment of stent retriever, duration of procedure, NIHSS score, and sICH were found to be significant predictors of unfavorable outcomes. On multivariate analysis collateral grade (OR, 0.24, 95% CI 0.06–0.94, p value 0.04), NIHSS score (OR 1.28, 95% CI 1.15–1.43, p value < 0.001), and number of passes (OR, 2.08, 95% CI 1.40–3.10, p value 0.0003) were found to be independent predictors of unfavorable outcomes in patients with successful recanalization.

**Abstract O-002 Table 1** Multivariable logistic regression model of 90-day mRS failure

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Estimate</th>
<th>95% Lower</th>
<th>95% Lower Limit</th>
<th>P-value</th>
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<tbody>
<tr>
<td>Collateral Grade</td>
<td>0.24</td>
<td>0.06</td>
<td>0.94</td>
<td>0.0404</td>
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<tr>
<td>NIH Stroke Score (per point)</td>
<td>1.29</td>
<td>1.12</td>
<td>1.49</td>
<td>0.0003</td>
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<tr>
<td>Num. of Passes (per pass)</td>
<td>1.90</td>
<td>1.10</td>
<td>3.28</td>
<td>0.0224</td>
</tr>
</tbody>
</table>
Abstracts

Conclusion Collateral grade, NIHSS score at presentation, and number of passes are independent predictors of unfavorable outcomes at 90 days.

Disclosures A. Siddiqui: 1; C; Co-investigator NIH/NINDS 1R01NS091075. 2; C; Canon Medical System US, Boston Scientific, Amnis Therapeutics, Cerebrotech Medical Systems, Silk Road, Corindus Inc., Blockade Medical, Guidepoint Global Consulting, Imperative Care, Integra LifeSciences Corp, Medronic, MicroVention, Q’Apel Medical Inc, Rapid Medical, Rebound Therapeutics Corp., Serenity Medical Inc, Silk Road Medical, StimMed, Stryker, Three Rivers Medical, VarSol, W. L. Gore & Associates. M. Waqas: None. T. Anderson: 2; C; Neuravi, Ablynx, Amnis Therapeutics, Medtronic, Rapid Medical, Stryker. J. Saver: 1; C; Medtronic-Abbott, Neuravi. H. Mattle: None. H. Bozorgchami: None. R. Chapot: None. A. Narata: None. A. Yoo: 1; C; Penumbra, Neuravi, Cerenovus. M. Ribo: None. O. Zaidat: 2; C; Stryker, Medtronic, Neuravi, Penumbra.

PREDICTORS OF SUCCESSFUL REvascularization IN THE ARISE II STUDY

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O-003

Introduction Swift and complete revascularization in large vessel occlusion (LVO) stroke is associated with better functional outcomes. First pass effect (FPE), achievement of TICI 2C/3 revascularization on the first pass, is a new metric of technical success of endovascular thrombectomy (EVT). We aim to identify predictors of FPE and TICI 3 revascularization in the ARISE II study.

Methods Anterior circulation LVO [A1-A11 involvement, ICA, and middle cerebral artery (MCA-M1)] strokes from the ARISE II study were used for this analysis. Core-lab adjudicated TICI scores after the first pass of EmboTrap were collected. FPE and modified FPE (mFPE) were defined as first pass achievement of TICI 2C/3 and TICI ≥2B, respectively. Demographic, clinical and radiographic parameters were analyzed. Multivariable logistic regression was performed to identify predictors.

Results A total of 161 A1-A11 thrombectomy subjects underwent thrombectomy in the ARISE II study. Mean age was 67 ±13 years and 43% (n=69) were male. Mean NIHSS and median ASPECTS were 16 ±5 and 10, respectively. While FPE was achieved in 37% (n=59), mFPE was seen 43% (n=69) patients. Multivariable logistic regression was performed using age, sex, use of IV-tPA, BMI, NIHSS, vascular risk factors, ASPECTS, collateral status (ASITN), occlusion location and use of balloon-guided catheter as variables. While absence of ICA occlusion (p=0.07, OR-8.6, 0.8–90) can predict FPE, there were no independent predictors of mFPE. Independent predictors of TICI 3 after 3 passes include use of balloon guide catheter (p=0.01, OR-0.033, 0.003–0.535) and higher ASITN score (p=0.04, OR-10.2, 1–100).