experimental and theoretical asp-F (obtained by the product of the tip's section area by the vacuum pressure) correlated with tip's distensibility (r=0.9050; P<0.01), evidencing that ADAPT performance is highly influenced by catheter tip shape-adaptability to the clot and that the effective ID (eff-ID) may differ from the labeled-ID specified by manufacturers. Eff-ID showed the highest correlation with experimental asp-F (r=0.9944; P<0.01), confirming that eff-ID rather than labeled-ID should be considered to better estimate the device efficiency.

Conclusions Catheter tip distensibility can induce a significant impact on ADAPT performance when retrieving a stiff clot larger than the device ID. Our findings might contribute to optimizing thrombectomy strategies.

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EP51* BURDEN OF *TOUGH TO RETRIEVE* CLOTS IN ACUTE ISCHEMIC STROKE: CLINICAL AND ECONOMIC IMPACT OF INCREASING RETRIEVAL ATTEMPTS IN MECHANICAL THROMBECTOMY

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Introduction Emerging data show an association between increased mechanical thrombectomy (MT) passes and poor outcomes in ischemic stroke. Clots that require ≥3 passes are more often tough, fibrin-rich thrombi than those retrieved within two passes.

Aims To assess the clinical and economic burden of number of MT passes, we evaluated the odds of achieving successful reperfusion and functional independence in first pass, or 2–3 passes, compared to ≥4 passes.

Methods A retrospective observational study was conducted on 857 cases treated with MT from the Irish National Thrombectomy database. Outcomes were 90-day functional independence (mRS 0–2) and successful reperfusion (mTICI 2b-3) stratified by number of passes (1; 2–3; and ≥4) with multivariable regression to adjust for confounding variables. A decision-tree economic model was informed by 90-day mRS: independent (0–2), dependent (3–5), or dead, with literature-derived annual healthcare costs by mRS.

Results The odds of achieving successful reperfusion were significantly higher for 1 vs. ≥4 passes (OR 7.19, p<0.001); and for 2–3 vs. ≥4 passes (OR 3.19, p<0.001). The odds of functional independence were significantly higher for 1 vs. ≥4 passes (OR 2.51, p<0.001); and trended higher for 2–3 vs. ≥4 passes (OR 1.49, p=0.199). Patients treated with 1 pass had the lowest annual healthcare costs ($20,910); 2–3 passes ($21,999) ≥4 passes ($25,904).

Conclusion Odds of achieving good outcomes decline with MT passes, while care costs increase. Thrombectomy devices that improve interaction with tough clots for rapid and complete retrieval in fewer passes may improve clinical and economic outcomes.

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EP52* INITIAL EXPERIENCE WITH THE TREVO NXT STENT RETRIEVER

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Background We report our initial experience with a new stent retriever for mechanical thrombectomy of large- and medium vessel occlusions.

Methods We pooled data of four high-volume European stroke centers over the time period from October 2020 to February 2021. Patients were included in our study if the Trevo NXT stent retriever was used as first-line device. Primary endpoints were first-pass near-complete or complete reperfusion, defined as mTICI score of ≥2c. Secondary endpoints were final reperfusion, National Institutes of Health Stroke Scale (NIHSS) at 24 hours and discharge, device malfunctions, complications during the procedure and subjective ratings of the interventionalists regarding device functionality.

Results Eighty patients (39 women, mean age 74±14 years) were eligible for our study. Median NIHSS at admission was 15 (IQR, 8–19) and median Alberta Stroke Program Early CT Score at baseline 9 (IQR, 8–10). In 74 (93%) patients a primary combined approach was used as first-line technique. First-pass near-complete reperfusion was achieved in 43 (54%) and first-pass complete reperfusion in 34 (43%) patients. Final near-complete reperfusion was achieved in 66 (83%) patients after a median of 1.5 (1–3) passes, while final successful reperfusion was observed in 96% of our cases. We observed no device malfunctions. Median NIHSS at discharge was 2 (IQR, 0–5) and 3 patients (4%) suffered a symptomatic intracranial hemorrhage.