Abstract P-018 Table 2 Comparison of WEB lateral compression thresholds

	Optimal ROC LC Threshold for Complete Occlusion, >17.1%	Optimal ROC LC Threshold for Adequate Occlusion, >15.7%	Empiric Practical LC Thresholds	p-value*
Number of aneurysms meeting threshold (% of total cohort):	113 (58.5%)	126 (65.3%)	157 (81.3%)	<0.0001
Complete Occlusion at First Follow-up,%:†	68.1	63.5	61.1	0.49
Adequate Occlusion at First Follow-up,%:†	93.8	94.4	94.3	0.98
Complete Occlusion at Last Follow-up,%:†	72.6	70.6	70.1	0.9
Adequate Occlusion at Last Follow-up,%:†	93.8	94.4	94.3	0.98
Retreatment,%:†	4.4	4.8	4.5	0.99

*p-value for the difference between LC threshold groups. †For aneurysms meeting the LC threshold. ROC: receiver operating characteristic; LC: lateral compression.

(65.3%,p-value<0.0001, table 2). There was no significant difference in aneurysm occlusion rates at first follow-up among IAs meeting the 3 different LC thresholds (table 2). Similarly, there was no significant difference in aneurysm occlusion rates at last follow-up among IAs meeting the 3 different LC thresholds (table 2). Further, there was no significant difference in retreatment rates among IAs meeting the 3 different LC thresholds (table 2).

Conclusion There was no significant difference between the performance of the ROC-derived and the empiric practical WEB LC thresholds for the prediction of aneurysm occlusion and retreatment in this large cohort of IAs treated with WEB. The more-inclusive empiric practical WEB LC thresholds may be more clinically-useful in determining whether a WEB device has been sized appropriately.

Disclosures J. Delgado Almandoz: 2; C; Microvention/Terumo. **Y. Kayan:** 2; C; Microvention/Terumo. **A. Copelan:** 2; C; Microvention/Terumo. **A. Ertelt:** None. **J. Scholz:** None.

P-019 PREDICTORS OF OCCLUSION, LONG-TERM OUTCOMES, AND SAFETY IN A CARGE COHORT OF 780 ANEURYSMS TREATED WITH THE PIPELINE EMBOLIZATION DEVICE

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10.1136/jnis-2023-SNIS.91

Background Flow diversion introduced a new paradigm shift in neuroendovascular by providing a more physiologic approach for the treatment of IAs. To date, there are many flow diverters on the market, but we report our experience with the pipeline embolization device, the first flow diverter to be approved by the FDA. We aim to assess the efficacy and safety of PED flow diversion for the treatment of a wide range of aneurysms, as well as look at factors affecting occlusion.

Methods This study was a retrospective chart review of a prospectively maintained database for patients treated with flow diversion between January 2011 and December 2019.

Results Our study included 636 patients with 780 aneurysms. Most aneurysms (707) were in the anterior circulation. 85.3% of aneurysms were saccular with the rest being fusiform (7.9%), dissecting (5.9%), and blister (0.9%). Additionally, 738 aneurysms (94.7%) were unruptured while 41 (5.3%) were acutely ruptured. The median largest aneurysmal dimension was 6.5 mm (IQR 4 mm - 10 mm), and 162 aneurysms (20.8%) were larger than 10 mm. Symptomatic complications occurred at a rate of 6% (1.4% delayed aneurysmal rupture, of which, 33% occurred in ruptured cases; 1.5% distal intraparenchymal hemorrhage, of which, 20% occurred in ruptured cases; and 3.1% ischemic complications). The complete occlusion rate was 90.3% at a median follow up of 18.5 months, and 93.8% of patients had a favorable neurological outcome (mRS 0 - 2) at last follow up. On multivariate analysis hypertension (p=0.007) and adjunctive angioplasty (p=0.007) were significantly associated with incomplete aneurysm occlusion. The overall mortality rate was 2.6%, of which, 17% were due to ruptured cases.

Conclusion Our findings are in conjunction with those of previous studies and trials. Our complete occlusion rate was >90% at 24 months follow-up with 94% of patients having favorable functional outcomes (mRS 0 - 2). In addition, our complication rate was low (6%) and occurred mainly in ruptured, non-saccular, and large (>10mm) aneurysms. Thus, Flow diversion is safe and effective for the treatment of IAs. Further research is warranted to accurately delineate factors associated with FD failure and thus improving patient care.

Disclosures R. Abbas: None. **E. Atallah:** None. **K. El Naamani:** None. **S. Tjoumakaris:** 2; C; microvention. **M. Gooch:** 2; C; Medtronic. **P. Jabbour:** 2; C; Medtronic.

P-020 ANTERIOR CIRCULATION SITE-SPECIFIC RESULTS FOR STENT-ASSISTED COILING – CAROTID VS. OTHERS: ONE-YEAR OUTCOMES FROM NEUROFORM ATLAS STENT PIVOTAL TRIAL

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10.1136/jnis-2023-SNIS.92

Background The Neuroform Atlas Stent System is an established treatment modality for unruptured anterior and

posterior circulation intracranial aneurysms. Previous studies demonstrated high rates of successful aneurysm occlusion and a favorable safety profile. Location specific results are needed to guide treatment decision making. However, it is unclear whether there are specific differences in safety and efficacy outcomes between carotid and more distal anterior circulation aneurysms.

Methods The ATLAS IDE trial was a prospective, single arm, independently adjudicated, multicenter study that evaluated the safety and efficacy of the Neuroform Atlas Stent System. We compare differences in efficacy and safety outcomes of proximal internal carotid artery (ICA) versus distal and bifurcation anterior circulation aneurysms. Primary effectiveness endpoint: complete aneurysm occlusion without clinically significant stenosis or retreatment. Primary safety endpoint: rate of major ipsilateral stroke (increase in NIHSS score ≥4) or neurological death.

Results Of the 202 anterior circulation participants enrolled, 182 patients composed the modified intention to treat cohort and were included in the analysis. Proximal subgroup included 70 (38.5%) aneurysms located at the internal carotid artery (ICA) and 112 (61.5%) at the distal anterior circulation (including ICA terminus/bifurcation). Patients from proximal aneurysm subgroup were more likely to be younger (57.4 vs. 62.1, p=.03), female (85.7% vs. 65.2%, p=.006), and to have larger parent vessel diameters (p<.0001). At one-year follow-up, there were no significant differences in the primary efficacy endpoint (85.5% vs. 83.9%, p=0.78), complete aneurysm occlusion rates (88.7% vs. 87.9%, p=0.78), recanalization rates (6.5% vs. 5.4%, p=0.76), and incidence of retreatment (2.9% vs. 4.5%, p=.55) between proximal ICA aneurysms and distal aneurysms, respectively. While it appeared that the distal group had a higher complication rate, the result was not statistically significant (6.3% vs. 1.4%, p=0.14).

Conclusion Based on these findings of the ATLAS IDE trial, the Neuroform Atlas Stent System is a safe and efficacious treatment modality for unruptured anterior circulation intracranial aneurysms in both proximal and distal, bifurcation aneurysms. Additional, studies are needed to assess complication rates in larger populations. This may have important implications for the selection of treatment modalities for intracranial aneurysms.

Disclosures R. Hanel*: 1; C; NIH, Interline Endowment, Microvention, Stryker, NX. 2; C; Medtronic, Balt, Stryker, Q'Apel Medical, Inc, Codman Neuro (J&J), Cerenovus, Microvention, Imperative Care, Inc, Phenox, Inc, Rapid Medical. 4; C; InNeuroCo, Cerebrotech, eLum, Endostream, Three Rivers Medical, Inc, Scientia, RisT, Blink TBI, Corindus. **G. M. Cortez*:** None. **B. T. Jankowitz:** 2; C; Stryker, Medtronic. **E. Sauvageau:** 3; C; Stryker. **A. Aghaebrahim:** None. **E. Lin:** None. **A. P. Jadhav:** None. **B. Gross:** 2; C; Medtronic, Microvention. **A. Khaldi:** None. **R. G. Gupta:** 2; C; Cerenovus. **D. Frei:** 2; C; Stryker, Siemens, Penumbra, Philips, Genetech, Viz. AI. **D. Loy:** None. **L. Lyn Price:** 5; C; Stryker Neurovascular. **S. W. Hetts:** 2; C; Microvention Terumo. 6; C; Stryker. **O. O. Zaidat:** None.

P-021 MULTI-CENTER CASE SERIES OF 33 PATIENTS WITH RUPTURED INTERNAL CAROTID ARTERY BLISTER PSEUDOANEURYSMS TREATED WITH PHOSPHORYLCHOLINE SURFACE-MODIFIED FLOW DIVERTER

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10.1136/jnis-2023-SNIS.93

Objective Ruptured blister, dissecting, and iatrogenic pseudoaneurysms are rare pathologies that pose significant challenges from a treatment standpoint. Endovascular treatment via flow diversion represents an increasingly popular option; however, drawbacks include the requirement for dual antiplatelet therapy and the potential for thromboembolic complications, particularly acutely in the ruptured setting. The Pipeline Flex Embolization device with Shield technology (PED-Shield) offers a reduced material thrombogenicity via coating with phosphorylcholine, which may aid in the treatment of ruptured internal carotid artery pseudoaneurysms.

Methods The authors conducted a multi-institution, retrospective case series to determine the safety and efficacy of PED-Shield in the treatment of ruptured blister, dissecting, and iatrogenic pseudoaneurysms of the internal carotid artery. Clinical, radiographic, treatment, and outcomes data were collected.

Results Thirty-three patients were included in the final analysis. Seventeen underwent placement of a single device and 16 underwent placement of two devices. Adjunctive coiling was conducted in two cases. Four patients were maintained on aspirin alone and all others were treated with long-term dual antiplatelet therapy. No thromboembolic complications occurred. Among patients with 3-month follow-up, 93.8% had an modified Rankin Scale score of 0-2. Overall complete occlusion at follow-up was observed in 82.6% of patients. Among patients treated with multiple telescoping devices, complete occlusion was observed in 90.9% of cases, while those treated with a single device demonstrated complete occlusion in 72.7% of cases. Extremely early complete occlusion (observed in less than one month post-operatively) was observed in five patients. Of the five patients, four underwent