Abstract E-086 Table 1 Comparison of outcomes between COVID-19-positive unvaccinated vs. fully vaccinated patients presenting with stroke. *Adjusted for hypertension, atrial fibrillation, PVD, admission NIHSS, ASPECTS, tandem occlusion, and thrombectomy

	Unvaccinated	Vaccinated	Effect Variable	Unadjusted Value (95% CI)	Unadjusted p-value	Adjusted Value (95% CI)*	Adjusted p-value*
Primary Outcome							
mRS at discharge, median (IQR)	4 (2–5)	3 (1–4)	Common Odds Ratio	0.508 (0.301–0.859)	**0.011**	0.490 (0.211–1.139)	0.098
Secondary Outcomes							
mRS 0–1 at discharge, n (%)	32/134 (23.9)	24/64 (37.5)	Odds Ratio	1.913 (1.005-3.639)	**0.048**	1.733 (0.583–5.149)	0.322
mRS 0–2 at discharge, n (%)	41/134 (30.6)	29/64 (45.3)	Odds Ratio	1.879 (1.017–3.473)	**0.044**	2.278 (0.757–6.858)	0.143
NIHSS at 24 hours, median (IQR)	6 (1–19)	3 (1–8)	Beta	-4.062 (-7.072– -1.053)	**0.008**	-1.919 (-4.362–0.524)	0.122
NIHSS at discharge, median (IQR)	6 (1–21)	2 (0–6)	Beta	-6.882 (-11.363– -2.401)	**0.003**	-3.589 (-8.490–1.312)	0.149
Mortality at discharge, n (%)	27/134 (20.2)	5/64 (7.8)	Odds Ratio	0.336 (0.123–0.918)	**0.033**	0.556 (0.069–4.479)	0.581
mRS at 3 months, median (IQR)	6 (3–6)	6 (1–6)	Common Odds Ratio	0.872 (0.251–3.035)	0.830	0.882 (0.110–7.085)	0.906
mRS 0–1 at 3 months, n (%)	10/55 (18.2)	3/11 (27.3)	Odds Ratio	1.688 (0.379–7.513)	0.492	2.365 (0.167–33.495)	0.524
mRS 0–2 at 3 months, n (%)	12/55 (21.8)	4/11 (36.4)	Odds Ratio	2.048 (0.512–8.181)	0.311	3.177 (0.246–40.962)	0.376
Mortality at 3 months, n (%)	28/55 (50.9)	6/11 (54.6)	Odds Ratio	1.157 (0.316–4.243)	0.826	3.646 (0.184–72.275)	0.396
NIHSS at 3 months, median (IQR)	42 (5–42)	42 (0–42)	Beta	-1.756 (-15.762–12.251)	0.802	4.187 (-17.203–25.576)	0.690
Decompressive craniectomy, n (%)	6/136 (4.4)	0/62 (0)	—	—	0.180	—	—
Length of hospital stay, median (IQR) days	6 (3–14)	5 (3–10)	Beta	-3.761 (-6.577– -0.944)	**0.009**	-4.364 (-8.895–0.168)	0.059

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E-087 PEDIATRIC INFECTIOUS ANEURYSMS: A POOLED ANALYSIS OF PRESENTATION, MANAGEMENT AND OUTCOMES

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Introduction Infectious intracranial aneurysms (IIAs) are a rare complication of infective endocarditis as well as systemic and intracranial infections. Outcome and management of IIAs in the pediatric population remain under-investigated, with insufficient management guidelines. In this work, we perform a systematic review and pooled analysis of published series of IIAs in the pediatric population with respect to presentation, management strategy, technical success, and outcomes.

Methods A systematic review of IIAs in pediatric populations was performed in accordance with the PRISMA guidelines. Publications in MEDLINE, SCOPUS, or Web of Science that included references to 'Infectious Aneurysms' or 'Mycotic aneurysms' were reviewed and screened for the presence of pediatric patients. Individual data were curated from the original literature and analyzed using univariate and multivariate analysis.

Results A total of 2548 publications were screened, of which 76 studies included at least one pediatric patient with IIAs. A total of 150 patients (191 IIAs) were reviewed with median age of 11, and 15% were infants (< 2 years old). The most common predisposing factor was meningitis/CNS infections in infants compared to infective endocarditis in older children (> 2 years old, $p<0.05$). Among reported cases, Staphylococcus Aureus was the most common pathogen (15%); 61% presented with rupture, 18% had multiple aneurysms, and 5% had concurrent infarcts from septic emboli. The MCA (50% of IIAs) was the most common location, while 18% occurred in the posterior circulation. The average size of reported aneurysms was 13.8mm (+/- 7). Medical management (antibiotics and serial imaging) was used as a primary treatment in 71% of cases (68% of ruptured IIAs) and as the only treatment in 41% of IIAs. The antibiotic failure rate (IIA progression, re-hemorrhage, or need for delayed surgery) was 48% of all IIAs (50% of ruptured). There was no difference in failure rate of medical management or mortality between the different pediatric age groups. Open microsurgical management was used in 43% of cases (20% as primary approach and 23% as rescue for medical failure). Endovascular management was used in 18% of cases (9% as primary and 9% as rescue treatment). Investigating the trend in management over time was notable for a significant decrease in the rate of primary medical management from 50-60% before 1990 to 30% after 2010, with an increase in rate of endovascular management from 0% before 1990 to 35% after 2010. This correlated with significant improvement in 1-year survival rate from 56% by 1990 to 88% after 2010. The 1-year mortality rate was highest for medically managed children (25%) compared to endovascular (10%) and open microsurgical treatment (9%).

Conclusions Management of pediatric infectious aneurysms has shifted over the past two decades with an increased preference toward early aneurysm securement via open or endovascular approaches with concurrent improvement in overall survival. Medical management alone (antibiotics) is associated with a relatively high failure rate and the need for delayed surgical or endovascular intervention secondary to aneurysm progression or re-rupture.

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E-088 A NOVEL NEUROPROTECTION DEVICE, ENCOMPASS F2 FOR IMPROVED STROKE PREVENTION IN TRANSCATHETER AORTIC VALVE REPLACEMENT: AN IN VITRO STUDY

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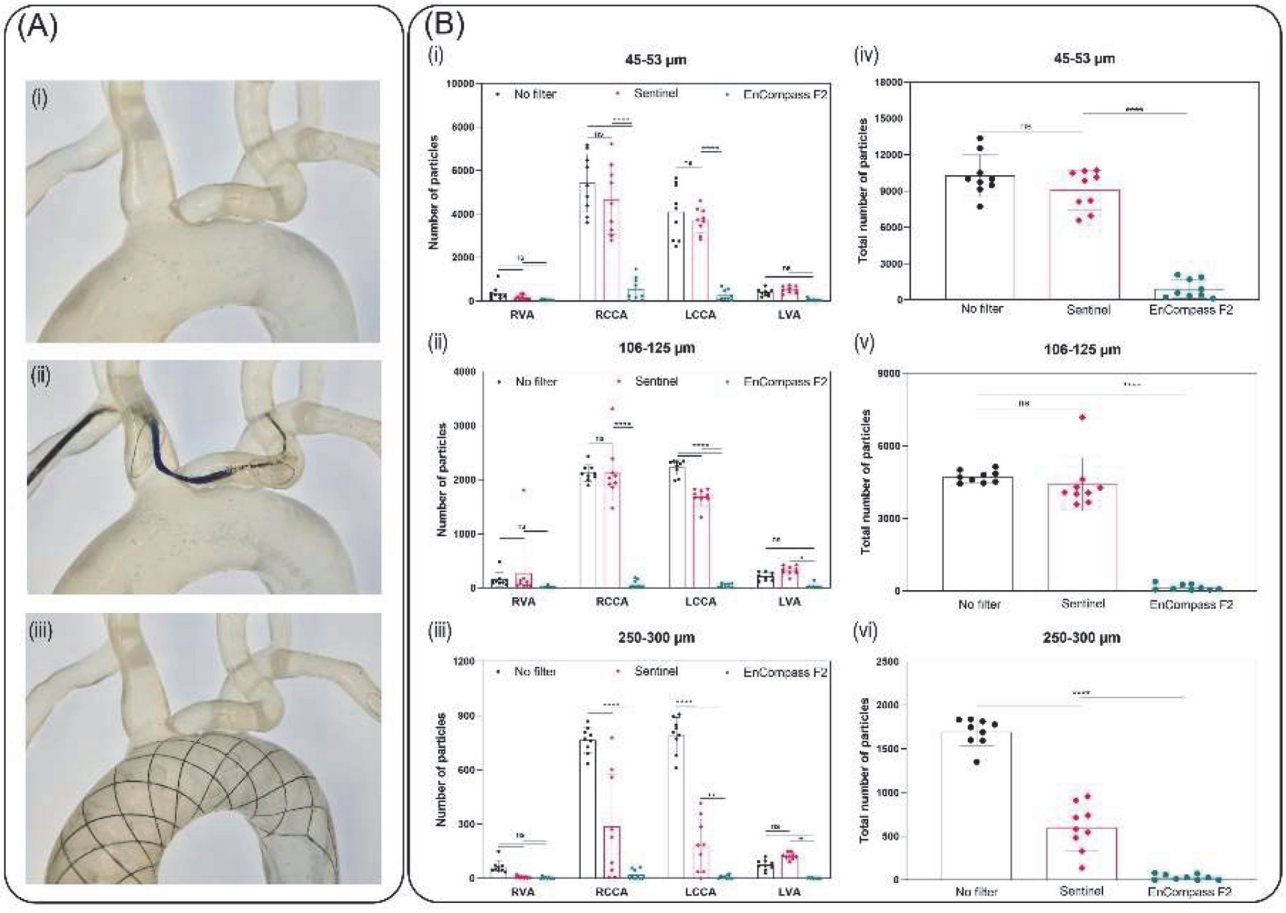
Objective Stroke may occur during transcatheter aortic valve replacement (TAVR) due to debris dislodgement into intracranial arteries. Sentinel Cerebral Protection System is a filter device designed to capture the debris in the brachiocephalic and left common carotid arteries. However, clinical studies have not shown reductions in cerebral infarction with the Sentinel, possibly due to incomplete coverage and large pore size (140 µm). The EnCompass F2, a self-expanding nitinol stent with filter membrane made of electrospun polyurethane and smaller pore size (average 28 µm), provides coverage to all three great vessels of the aortic arch by using a simple unsheath deployment technique. This in vitro study aimed to compare the efficacy of the EnCompass F2 device against the Sentinel device and unprotected controls.

Methods A silicone model of the human aorta with cervical arteries was connected to a peristaltic pump to simulate physiological flow patterns (5L/min). A mixture of polyethylene microspheres with variable sizes (small 45-53 µm, medium 106-125 µm, and large 250-300 µm) was injected into the origin of the ascending aorta without a device, or with cerebral protection using either the Sentinel or Encompass F2 devices. Particles were collected from the right vertebral artery (RVA), right common carotid artery (RCCA), left common carotid artery (LCCA), and left vertebral artery (LVA), and counted using a Multisizer Coulter Counter. The experiment was repeated nine times per group.

Results The EnCompass F2 device demonstrated significantly lower counts of small, medium, and large particles in all four vessels compared to unprotected controls. The Sentinel reduced large particles in three vessels but not in the LVA and did not reduce small or medium-sized particles in any vessels. The protection efficacy (η) of EnCompass F2 and Sentinel was 91.1% and 11.7% for small, 96.8% and 6.5% for medium, and 99.3% and 64.7% for large particles, respectively. The protection effect of EnCompass F2 was significantly better than that of the Sentinel for all particle sizes.

Conclusions In our in vitro model, the EnCompass F2 filter stent demonstrated superior efficacy in providing full cerebral protection with smaller pores compared to the partial



Abstract E-088 Figure 1