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#### O-024 COMPARISON BETWEEN OUTCOMES OF ANTERIOR AND POSTERIOR CEREBRAL CIRCULATION ANEURYSMS IN THE SMART REGISTRY COHORT

E Almallouhi\*, M Sattur, M Anadani, S Al kasab, A Spiotta. *Medical University of South Carolina, Charleston, SC*

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**Background** Endovascular treatment of cerebral aneurysms in the posterior circulation poses a challenge because of the higher rate of wide-necked aneurysms and presentation with rupture. In this study, we compare the baseline characteristics and outcomes of patients with posterior circulation aneurysms treated with novel second-generation coils in the SMART registry.

**Methods** SMART is a phase 4, multicenter, prospective, registry that enrolled patients with anterior and posterior circulation cerebral aneurysms (both ruptured and unruptured) who underwent endovascular treatment using Penumbra SMART™ Coils. Collected data included baseline clinical and angiographic characteristics at presentation. Primary and secondary end points were immediate angiographic occlusion, periprocedural complications, recanalization and retreatment rates and mortality at 1-year follow up. We compared the above variables between anterior and posterior circulation aneurysms.

**Results** Of a total of 906 patients treated in the SMART registry, 173 (19.1%) had posterior circulation aneurysms. In comparison to patients with anterior circulation aneurysms, patients with aneurysms in the posterior circulation were older (mean age 61.7 vs. 59.3 years, P 0.017) and more likely to present with rupture (38.7% vs. 30.3%, P 0.032). Posterior circulation aneurysms were more likely to be wide-necked (defined as an aneurysm with a dome-to-neck ratio less than 2.0 and/or a neck length of 4 mm or more). No significant difference was found in the rate of successful

embolization at initial procedure (Raymond Class I), serious device-related adverse effects within 24 hours, one-year recanalization and one-year retreatment between both groups (table 1).

**Abstract O-024 Table 1** Comparison between anterior and posterior circulation aneurysms

Baseline characteristics	Posterior circulation aneurysm patients (N=173)	Anterior circulation aneurysm patients (N=733)	P-value
Age, Mean SD	61.7 11.6	59.3 12.8	0.017
Female, % (n/N)	78.6% (136/173)	73.9% (542/733)	0.203
Ruptured aneurysm, % (n/N)	38.7% (67/173)	30.3% (222/733)	0.032
Aneurysm Size % (n/N)			0.285
Small (<11mm)	86.1% (149/173)	89.5% (656/733)	
Large (11 to 25 mm)	13.3% (23/173)	10.4% (76/733)	
Giant (>25mm)	0.6% (1/173)	0.1% (1/733)	
Wide-Neck% (n/N)	72.2% (117/162)	59.9% (439/733)	0.002
Stent-Assisted Coiling % (n/N)	38.2% (66/173)	36.2% (265/733)	0.624
Balloon-Assisted Coiling % (n/N)	16.8% (29/173)	20.6% (151/733)	0.255
Raymond Occlusion, Class I			
Immediate Post-Procedure% (n/N)	37.6% (65/172)	41.1% (298/729)	0.457
One-Year Follow-Up % (n/N)	55.1% (43/78)	64.4% (250/388)	0.121
Recanalization at One-Year Follow-Up % (n/N)	12.8% (10/78)	14% (54/385)	0.205
Retreatment through One-Year Follow-Up	6.2% (5/81)	7% (28/399)	0.190
Device-Related SAE within 24 Hours of Procedure % (n/N)	1.7% (3/173)	3% (22/733)	0.360
Length of Hospital Stay, Median [IQR]	2 [1–14]	1 [1–10]	0.053

**Conclusions** Despite being associated with higher rates of rupture and wide-necked geometry, patients with posterior circulation aneurysms experienced immediate and one-year angiographic occlusion rates that were not significantly different from anterior circulation aneurysms. Device-related periprocedural complications were also not significantly higher than the latter.

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#### O-025 SOUND MEASUREMENT IN PATIENT-SPECIFIC 3D PRINTED BENCH MODELS FOR VENOUS PULSATILE TINNITUS

M Amans\*, K Valluru, H Haraldsson, E Kao, J Leach, A Wright, M Ballweber, K Meisel, D Saloner. *Radiology, UCSF, San Francisco, CA*

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**Introduction** Pulsatile tinnitus (PT) can be caused by aberrant blood flow in large cerebral veins near the cochlea. In our previous works we evaluated flow patterns in patient's