

**Poster 67****TEMPORARY PARTIAL AORTIC OCCLUSION FOR THE TREATMENT OF VASOSPASM FOLLOWING ANEURYSMAL SUBARACHNOID HEMORRHAGE**

Cherylee W. J. Chang, Kristine O'Phelan, Deborah M. Green, Tracy Stern, Lyle Oshita

<sup>1</sup>The Queen's Medical Center, Honolulu, HI, United States, <sup>2</sup>University of Hawaii, John A. Burns School of Medicine, Honolulu, HI, United States

**Introduction:**

A tri-lumen catheter with supra- and infra-renal aortic balloons improves cerebral perfusion by diverting blood from the lower half of the body. This device may improve symptomatic vasospasm refractory to hypertensive, hypervolemic, hemodilutional therapy (HHT) and intra-arterial vasodilators following aneurysmal SAH.

**Methods:**

A registry was established of patients age 18 to 85 years treated with the NeuroFlo™ catheter. After obtaining IRB-approved informed consent, seven patients who failed to neurologically improve with HHT and intra-arterial vasodilator therapy underwent intra-aortic placement of the NeuroFlo™ device. The infra-renal, then supra-renal balloons were inflated to attempt to achieve a 70% stenosis and inter-balloon gradient of 10 to 20 mm Hg for a total of 45 minutes. NIHSS, and modified Rankin Scales (mRS) were recorded.

**Results:**

Six women and one man ages 38 to 72 (mean 45) years were treated endovascularly in 2 patients and surgically in 5. Symptoms from vasospasm failed to improve with HHT and intra-arterial papaverine, verapamil or nicardipine. NIHSS prior to NeuroFlo™ use ranged from 10 to 32 (mean 19). NIHSS decreased 3-13 points (mean 6.7) in 6 patients and worsened by one point in one patient. Clinically significant improvement was immediately noted in 3 patients whose NIHSS improved by 8 or more. By discharge, NIHSS ranged from 0 to 23. Discharge mRS was 0 to 2 in all patients who achieved an inter-balloon gradient of  $\geq 14$  mm Hg. In patients with gradients of 4-9 mm Hg, mRS was 4 to 5 except in one patient (mRS 0) who improved with repeat angioplasty following NeuroFlo™.

**Conclusions:**

Symptomatic vasospasm refractory to HHT may improve with a novel strategy of cerebral collateral recruitment by temporary partial aortic balloon occlusion. A higher inter-balloon gradient may be essential to improve cerebral perfusion.

**References: None****Financial Support: None**