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### WEB COLOMBIAN MULTICENTER EXPERIENCE (WEB. COM): CLINICAL AND RADIOLOGICAL MID- LONG TERM RESULTS IN THE TREATMENT OF INTRACRANIAL ANEURYSMS USING INTRASACULAR FLOW DISRUPTERS

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**Introduction** Woven EndoBridge (WEB) is a novel device for the treatment of ruptured and unruptured bifurcation aneurysms. To our knowledge none experience in Latin America has been reported. Here, we present a multi-center experience including mid and long-term follow data of patients treated with WEB.

**Materials and Methods** Consecutive patients treated with WEB were selected from March 2016 to February 2020 in six different centers in our country. We retrospectively evaluated clinical records, anatomical and angiographic variables. Additionally, WEB technical aspects, Procedure time and the presence of adverse events procedure-related were registered. Immediately angiographic results and mid, long term- follow up were analyzed and described below.

**Results** 73 patients (mean age: 52.8) with 75 IA were treated with WEB. History of SAH in 16/75(21%). A total of 84 devices attempted and finally implanted 75 (1.1 device per aneurysm) of these, eight devices were exchanged due to sizing failures, one case of WEB miss-opening was discharged. 59/75 (78.6%) were located in anterior circulation (MCA: 32, ACA: 19, ICA: 8). Sixteen cases in posterior circulation (Basilar tip: 13, SCA: 2, VBJ: 1). An additional strategy was observed in five cases (6.6%): high porosity stent in four and balloon assisted web in one case. WEB SL was used in 82.6% and WEB SLS configuration in 13/75. Radiological follow up available 6–12 months in 49/73 (67%) with adequate occlusion rate according to WOS in 86.6%. None thromboembolic complications. Two patients with severe hemorrhages procedure-related (one case of ICA rupture due to DAC advancement, and one wire- perforation of tip- basilar aneurysm). Overall morbid-mortality of 2.6%.

**Conclusion** In this multicenter experience the treatment of IA using WEB was feasible, safe and effective. Overall morbid-mortality (2.6%) aligned with previous publications. Special care regarding sizing methodology and proper training to reach an accurate and fast learning curve should be considered. This technology constitutes a good and valuable tool to treat bifurcation IA's but also is on the way to be applied in different scenarios than WNBA in highly selected patients.

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### CLINICAL AND ANGIOGRAPHIC RESULTS WITH THE NEW GENERATION SURPASS FLOW DIVERTER, EVOLVE: A SINGLE CENTER REAL WORLD EXPERIENCE

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**Objectiv** To share the angiographic and clinical outcome in 35 consecutive patients treated with new generation Surpass Evolve Flow Diverter in our institution by a single operator team.

**Methods** Thirty-five consecutive patients (70% women, average age 58 years), with anterior or posterior circulation aneurysms treated with Surpass Evolve FD in a single centre. Technical, clinical and angiographic results were analyzed.

**Results** Thirty-six Surpass Evolve were successfully implanted in all subjects to treat 35 patients using an XT 27 ( 0.027') microcatheter supported by a Cathayst 5, 0.58 F distal access system and a proximal 0.88 F long sheath. No deployment failure in our series was observed. No intraprocedural morbidity or mortality was seen. No increase in the mRS until March 2020. Clinical and angiographic follow-ups are ongoing and will be completed and presented at the annual meeting.

**Conclusions** Our preliminary experience demonstrates good performance of the Surpass Evolve with no intraprocedural mortality and morbidity and no increase in mRS until the time of submission of this paper. The follow-ups are still in process and full results will be presented at the meeting. The technology is a more user-friendly technology due to the device characteristics with far easier advancement, the accuracy of placement and adjustment features.

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### COMPARING EFFICACY OF PLATELET INHIBITION IN PATIENT TREATED WITH CLOPIDOGREL VERSUS PRASUGREL UNDERGOING CEREBRAL ANEURYSM STENT-ASSISTED EMBOLIZATION WITH FLOW DIVERSION

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Clopidogrel and Prasugrel are both platelet inhibitors that act on the P2Y12 adenosine diphosphate receptor. Clopidogrel utilizes a multi-step inhibition process while Prasugrel inhibits platelet functioning in a single step. In part due to these differences in mechanisms of action, an estimated 30% of patients treated with Clopidogrel are non-responders as compared to Prasugrel that has a very low rate of non-response. Inadequate platelet inhibition is associated with delay of care, often requiring operative rescheduling, and increased incidence of ischemic events. In our study, we compare a cohort of patients undergoing cerebral aneurysm embolization

with flow diversion in matched controls who were treated with Clopidogrel. We compare P2Y12 reaction unit (PRU) levels at sets of time point pre, peri and post-operatively, to measure response to Prasugrel versus Clopidogrel. We also evaluate if sub-optimal responses to Prasugrel or Clopidogrel resulted in delay of patient care. Early findings suggest that treatment with Prasugrel results in faster time to therapeutic PRU levels and more consistent PRU levels as compared to Clopidogrel resulting in less delay of care and operative rescheduling.

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### E-225 MANAGEMENT, COMPLICATIONS AND NEUROLOGICAL OUTCOMES OF ANEURYSMAL SUBARACHNOID HAEMORRHAGE IN ELDERLY PATIENTS

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**Objective** To study the management of aneurysmal subarachnoid haemorrhage and compare neurological outcomes in different elderly age groups.

**Design** Retrospective cohort study

**Methods** Patients with aneurysmal subarachnoid haemorrhage (aSAH) admitted to Royal Victoria Hospital Belfast between 2015 to 2019 were separated into different age groups, all patients above age of 70 were enrolled to this study. Study population was further divided into 3 sub-groups, age 70 – 74, age 75 – 79 and age >80. Patient characteristics and clinical courses were compared, including underlying co-morbidities, WFNS grade of aSAH, intervention received, complications and long-term neurological outcomes in follow up clinics.

**Results** A total of 54 patients were included, with 29 in group I (age 70 – 74), 20 in group II (age 75 – 79) and 5 in group III (age >80). Despite patients in group III presented with only WFNS grade 1 & 2 aSAH, mortality increased exponentially with age, from 10.3% to 15% to 40% across 3 sub-groups. There was also a linear increase in average length of stay from 21 days to 24 days. 23 patients (79.3%) developed complications in group I and 15 patients (75%) in group II. 3 patients (60%) in group III developed complications and the other 2 patients within same sub-group did not survive. Most common complications were hydrocephalus and hospital acquired infections, 44.4% of patients developed each condition respectively.

**Conclusion** Our study suggests patients with age >80 had less favourable neurological outcomes despite having good grade aSAH at presentation and received similar intervention, when compared to other age groups. Average length of stay in hospital also increased with age. Similar complication rates were noticed in all age groups. Comparing our data with other neurosurgical units in the United Kingdom and Ireland will provide further information in managing elderly aSAH patients and facilitate risk stratification when considering those patients for intervention.

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### E-226 FLOW DIVERSION IN ANTERIOR COMMUNICATING ARTERY ANEURYSMS

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**Introduction** Anterior communicating artery (ACOM) aneurysms are the most common location encountered in clinical practice, but can be often be challenging to treat. Flow diversion has emerged as an alternative modality for treatment in patients with ACOM aneurysms, although published reports are presently limited.

**Materials and Methods** We retrospectively evaluated all patients treated at our center from May 2017-February 2020 who underwent flow diversion for an ACOM aneurysm. We defined ACOM aneurysms as any aneurysm involving the ACOM itself, or at the junction of the anterior cerebral artery with the ACOM (A1/A2); both ruptured and unruptured aneurysms were included. We collected baseline clinical and demographic data and angiographic data from both pre- and post-treatment imaging when available; the primary measure was complete occlusion of the aneurysm on follow-up angiogram, defined as no residual filling of either neck or dome of the aneurysm. Parent vessel stenosis and peri-procedural complications were collected as secondary outcomes.

Patients underwent flow diversion with a Pipeline stent under general anesthesia; the procedure was performed under transfemoral access with a 8Fr 45 cm sheath using the Cook shuttle (Cook Medical) as the guide catheter, with the Phenom Plus (ev3) as the intermediate and the Phenom 027 microcatheter (ev3) for distal access. The Navien (Medtronic) intermediate catheter was used in lieu of the Phenom Plus in a minority of cases. A single flow diverting stent was placed in the dominant ACA spanning from the A2 segment extending into the A1 segment in a majority of cases; one case utilized two stents for an H-pipe technique.

**Results** 19 patients underwent a total of 20 flow diversion procedures for ACOM aneurysm within the study period; median age was 57 and 12 (63%) were male. 12 patients presented with subarachnoid hemorrhage, 3 presented with headache and 4 were found incidentally on workup for an unrelated condition. The median aneurysm size was 4.5 mm, with a range from 2–15 mm. Most patients had significant anterior cerebral artery asymmetry (17; 89%); a minority of patients exhibited co-dominance. There was one peri-operative access site complication requiring surgical intervention; no cases of intraoperative thrombosis, intracerebral hemorrhage, or stroke were observed. 13 patients underwent follow-up angiogram, of which 8 patients exhibited complete elimination of the aneurysm and 12/13 with protection of the dome. One patient underwent re-treatment with a second flow-diversion procedure.

**Conclusion** In our experience, flow diversion of ACOM aneurysms is safe and effective, either as a primary treatment modality in an unruptured aneurysm or as a complement to initial coil protection of a ruptured aneurysm. It is best suited for aneurysms asymmetrically located at or near the A1-A2 junction. Further followup and additional studies are needed to confirm these results.

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