Conclusion A lower dose of ticagrelor (45 mg twice daily) appears to be a safe and effective in this small cohort of patients who are resistant to clopidogrel per P2Y12 testing and who have increased risk of ischemic or hemorrhagic strokes due to neurovascular pathologies and implants. Further randomized studies are required to confirm these findings.


E-059 THE PROGNOSTIC SIGNIFICANCE OF AGE IN THE ADOLESCENT AND YOUNG ADULT POPULATION WITH STROKE STATUS POST MECHANICAL THROMBECTOMY

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Background Younger age has been shown to predict better functional outcomes status post mechanical thrombectomy (MT) in the setting of stroke. The significance of this in the adolescent and young adult (AYA) population however is not defined. Correspondingly the goal of this study was to determine the prognostic significance of age in this specific demographic following MT.

Methods A prospectively maintained international multi-institutional database STAR (Stroke Thrombectomy and Aneurysm Registry) was reviewed for all patients aged between 12–18 years old (adolescent) and 19–25 years old (young adult). Parameters were compared using chi-squared and t-test analyses, and associations were interrogated using regression analyses.

Results A total of 41 patients with a mean age of 19.7 ± 3.3 years satisfied all criteria with 16 (39%) adolescents and 25 (61%) young adults. There were more males than females (59% vs 41%), with a majority of White patients (67%) and mean Modified Rankin Scale (MRS) score of 0.1 ± 0.4 prior to stroke. Strokes were most common in the anterior circulation (88%), with the middle cerebral artery distribution the most common vessel (59%). Mean times to groin and then to reperfusion were 327 ± 229 minutes and 52 ± 42 minutes with an average number of 2.2 ± 1.2 attempts needed. There were only 3 (7%) cases of re-occlusion. Mean MRS score at last follow-up was 1.8 ± 1.5. Between adolescent and young adult subgroups, mean MRS score at last follow-up was statistically lower in the adolescent versus young adult subgroup (1.1 ± 1.4 vs 2.2 ± 1.4, P=0.03). Regression analysis indicated significant independent association between age and last follow-up MRS score within the AYA demographic (OR 1.43, P=0.02).

Conclusion MT for stroke treatment in the AYA demographic is both safe and effective. Even within this relatively young demographic, age remains significantly associated with functional outcome. The implication that stroke outcomes status post MT is dependent on age in those between 12–25 years needs greater validation in order to develop effective age-specific protocols for long-term care.

Disclosures V. Lu: None. M. Silva: None. J. Burks: None. E. Luther: None. A. Abdelsalam: None. R. Starke: None. S. Collaborators: None.

E-060 ANALYSIS OF REPORTED ADVERSE EVENTS OF FLOW-DIVERTER STENTS FOR INTRACRANIAL ANEURYSMS USING THE FDA MAUDE DATABASE

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Introduction/Purpose Flow-diverter stents have recently emerged as a safe and effective alternative to surgical clipping for large and wide-neck intracranial aneurysms. However, after its approval for use in the United States in 2011, post-market surveillance of adverse events is limited. This study aims to address this critical knowledge gap by characterizing reported adverse events and device problems in patients treated with flow-diverter stents.

Materials and Methods Using post-market surveillance data from the FDA Manufacturer and User Facility Device Experience (MAUDE), patient and device related (PR;DR) reports from January 2012-December 2021 were extracted, compiled, and analyzed with R-Studio version 2021.09.2. PR and DR reports with insufficient information were excluded.

Results During the study period, a total of 5537 medical device reports were extracted. After removing reports with insufficient information and no adverse events or device problems, 2203 PR and 4017 DR events were recorded. The most frequently reported PR adverse event categories were cerebrovascular (60%), death (11%), and neurological (8%). The most frequent PR adverse event reports were death (11%), thrombosis/thrombus (9%) cerebral infarction (8%), stroke/cerebrovascular accident (6%), decreased therapeutic response (6%), intracranial hemorrhage (5%), aneurysm (4%), occlusion (4%), headache (4%), neurological deficit/dysfunction (3%). The most frequent DR reports were activation/positioning/separation problems (52%), break (9%), device operates differently than expected (4%), difficult to open or close (4%), material deformation (3%), migration or expulsion of device (3%), detachment of device or device component (2%). Yearly PR reports increased from 114 in 2012 to 292 in 2021. Yearly DR reports increased from 270 in 2012 to 641 in 2021.

Conclusions Post-market surveillance is an important guide to patient counselling and identify adverse events and device problems that were not identified in initial trials. Although there are inherent limitations to the MAUDE database, our...
results highlight some important PR and DR complications that can help optimize patient counseling and management.

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E-061 MOYAMOYA SYNDROME PATIENTS HAVE LOW VITAMIN D
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Introduction Moyamoya syndrome is a cerebrovascular condition that leads to stroke. While the etiology is unknown, blood vessel dysfunction and chronic inflammation are important contributors. Vitamin D plays a key role in endothelial cell function and is a known regulator of the immune system. What is not known is the vitamin D status of moyamoya syndrome patients.

Materials and Methods We evaluated 18 adult male and female moyamoya syndrome patients in our prospectively enrolling Moyamoya and Stroke Tissue Evaluation and Repository (MASTER). Demographic and comorbidity data were collected, along with blood samples. Plasma was isolated for vitamin D analysis via ELISA assay. All patients were assigned a Suzuki score of pathological severity based on angiography. Correlation analysis between vitamin D levels and Suzuki score were performed using Prism GraphPad software.

Results The median age of our moyamoya patient population was 46 years and 60% were female, which is in line with our previously reported retrospective studies. Approximately 56% of the patients had bilateral pathology and 74% had a Suzuki score of 5–6 (most severe). Interestingly, 80% of the patients were either deficient (less than 20 µg/L) or at sub-optimal (less than 30 µg/L) levels of vitamin D. Data also indicate 75% of the patients with low levels of vitamin D had a Suzuki score of 5–6. Continued analysis of systemic inflammation (e.g., CRP, ESR, etc.) is anticipated to indicate increased inflammation and autoimmune disease, as in our previous retrospective studies.

Conclusion Our data indicate a large proportion of moyamoya syndrome patients are deficient in vitamin D, which we hypothesize contributes to pathological severity. Future studies incorporating vitamin D supplementation may act as a novel intervention for this patient population that currently has few treatment options.

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E-062 COMPARISON OF FRED AND PED IN THE TREATMENT OF INTRACEREBRAL ANEURYSMS
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Objectives Compare the outcomes of pipeline embolization device (PED; Medtronic Inc, Dublin, Ireland) and Flow-Redirection Endoluminal device (FRED; MicroVention, Aliso Viejo, California) in the treatment of intracranial aneurysms.

Methods This is a single-center retrospective review of aneurysms treated with PED and FRED devices. Patients treated with PED or FRED were included. Cases requiring multiple or adjunctive devices were excluded. Primary outcome was complete aneurysm occlusion at 6 months. Secondary outcomes included good functional outcome, need for retreatment, any complication.

Results The study cohort comprised 150 patients including 35 aneurysms treated with FRED, and 115 treated with PED. Mean neck diameter was significantly higher in the FRED cohort (2.3 mm vs 1.9 mm, p=0.043). Aneurysm characteristics including location and size were comparable between the two cohorts. 6-month complete occlusion rate was significantly higher in the PED cohort (74.7% vs. 51.5%; OR=0.36 [0.156–0.83], p=0.017) but lost significance after inverse probability weights (IPW). Patients in the PED cohort were associated with higher rates of periprocedural complications, and the rate of in-stent stenosis was approximately double in