several challenges remain, such as device compression, incomplete occlusion, and thromboembolic complications. Changes in intra-aneurysmal flow after the use of the WEB are not well understood and may be important in the performance of the device for aneurysm occlusion. The aim of this study was to characterize the degree of immediate aneurysm occlusion using color-coded quantitative digital subtraction angiography (DSA) after treatment with the WEB.

Materials and Methods

We retrospectively reviewed records of 34 patients treated with the WEB between March 2019 and February 2020. Eight patients were excluded from analysis for the use of a concurrent stent or intra-luminal flow-diverter. Measurements of contrast transit times on DSA were calculated with syngo iFlow (Siemens Healthineers AG). Regions of interest were selected within the parent vessel immediately proximal to the aneurysm and within the aneurysm dome before and after treatment with WEB (figure 1). The ratio of aneurysm contrast transit time to parent vessel contrast transit time was obtained before WEB placement and immediately after WEB placement. Transit time ratios were also compared with pre- and post-Pipeline (PED) cases matched for aneurysm size.

Results

Out of 26 aneurysms, 24 aneurysms demonstrated an increase in contrast transit time after WEB placement (2.06 s, p<0.05), as measured by iFlow analysis. The ratio of aneurysm-to-parent vessel contrast transit time increased significantly after treatment with WEB (1.02 vs. 1.61; p<0.01). Similarly, the ratio of contrast transit time increased after PED deployment (1.07 vs. 1.51; p<0.01), however the ratio increased significantly more after WEB when compared to PED (67% vs 40%; p<0.05). Average aneurysm size was similar between WEB cases (n=26) and PED cases (n=26) (128.2 mm³ vs 165.1 mm³, p=0.52). The average number of PED devices used per case was 2.2.

Conclusions

High rates of immediate aneurysm contrast stagnation can be achieved with use of the WEB. As a flow-diverting device, the WEB offers a greater degree of immediate aneurysm occlusion than the PED. iFlow analysis provides a quantitative measure of post-treatment effect and could represent a predictive tool for successful long-term occlusion.

Disclosures


E-241 A PROSPECTIVE, MULTICENTER STUDY ASSESSING THE EMBOLIZATION OF INTRACRANIAL ANEURYSMS USING WAVE™ EXTRA SOFT COILS, A PART OF THE PENUMBRA SMART COIL™ SYSTEM: STUDY PROTOCOL FOR SURF

C Schirmer, 1 I Kaminsky, 1 M Chaudry, 1 D Zaidat, 1 A Alshkehleh, 1 P Ramakrishnan, 1 M Taq, 1 Gesinger, Wilkes-Barre, PA; 2Radiology Imaging Associates, Englewood, CO; 2Prisma Health, Greenville, SC; 2Mercy Health – St. Vincent, Toledo, OH; 2SSM Health, St. Louis, MO; 3Riverside Regional Medical Center, Newport News, VA; 4Los Robles, Thousand Oaks, CA

Introduction/Purpose

Initial clinical evidence has shown that coiling with the SMART COIL® System (Penumbra, Inc.) is a safe and durable treatment option for intracranial aneurysms.1–3 The WAVE™ Extra Soft Coil (WAVE) is part of the SMART COIL System and is specifically designed as a fill and finish coil. The primary objective of the SURF study, a post-market registry, is to assess the utility of WAVE as a fill and finish coil to support adequate occlusion at one year follow-up. A secondary objective is to compare the ability of digital subtraction angiography (DSA) and magnetic resonance angiography (MRA) to detect incomplete occlusion in the coiled aneurysms.

Materials and Methods

SURF is a post-market, prospective, multicenter, single-arm, observational study that will enroll approximately 800 consecutive patients at up to 50 centers in North America. Patients age ≥ 18 years, having embolization of intracranial aneurysms, with WAVE as the final finishing coil and Penumbra SMART COIL System accounting for at least 75% of total number of coils implanted, will be
Racial Disparities in Acute Stroke Thrombectomy Management and Outcomes in the United States: Evidence from the NVQI-QOD Registry

Introduction

Endovascular mechanical thrombectomy is the standard of care treatment for acute ischemic stroke secondary to large vessel occlusions, but racial disparities in stroke interventional management and outcomes are not well studied. Moreover, a robust analysis of multiple relevant variables, with consideration of possible confounders, has not been previously conducted. We aimed to evaluate real-world evidence for racial differences in stroke thrombectomy management, short- and long-term outcomes using the Neurovascular Quality Initiative-Quality Outcomes Database (NVQI-QOD) registry.

Methods

Data from the NVQI-QOD registry database were analyzed and compared for racial differences with respect to technical and functional outcomes of stroke thrombectomy in 3281 patients from 23 US centers (17 states) between Jan 2015 to March 2020. Race was classified into 4 groups: 1) Caucasian (n=2484), 2) African American (n=563), 3) Hispanic (n=109), and 4) Asian (n=105). Analysis of variances (ANOVA), Chi-square tests, Mann Whitney U tests, and multivariate regression models were used to assess racial disparities for 10 outcome variables: final thrombolysis in cerebral infarction (TICI) grade (n=3182), 24 hour NIH stroke score (NIHSS) (n=2850), post-procedure length of stay (n=3257), ICU days (n=2787), in-hospital mortality (n=3259), discharge status (n=3281), discharge NIHSS (n=2426), discharge modified Rankin score (mRS) (n=996), 90 day re-admission rate (n=416), and 90 day mRS (n=1184). Regression models controlled for demographics, comorbidities, intravenous tPA thrombolysis, and pre-stroke functional measures.

Results

ANOVA and Chi-square tests revealed significant differences between racial groups means including post-procedure length of stay (p<0.001), ICU days (p<0.001), and in-hospital mortality (p<0.001). There were no significant differences between racial group means for discharge mRS without mortality (African American: 26.7% favorable outcome, Caucasian: 26.8%, Hispanic: 27.8%, Asian: 23%; p=0.90) or for 90 day mRS without mortality (African American: 56.5% favorable outcome, Caucasian: 51.3%, Hispanic: 37.5%, Asian: 44.4%; p=0.54). Additional analyses revealed significant differences between African Americans and Caucasians for post-procedure length of stay (mean 10.9 versus 7.9; p<0.001), 24 hour NIHSS (mean 11.2 versus 10.3; p=0.037), ICU days (mean 4.4 versus 3.1; p<0.001), and in-hospital mortality (14.6% versus 24.5%; p<0.001). Differences between Hispanics and Caucasians were seen for post-procedure length of stay (mean 10.1 versus 7.9; p=0.010), 24-hour NIHSS (mean 12.1 versus 10.3; p=0.046), and ICU days (mean 4.3 versus 3.1; p=0.011). Differences between Asians and Caucasians were seen for post-procedure length of stay (mean 10.2 versus 7.9; p=0.004) and ICU days (4.6 versus 3.1; p<0.001). Multivariate regression models, with Caucasian set as the reference group, showed higher post-procedure length of stays for African Americans (p<0.001) and Asians (p=0.026), and higher ICU days for African Americans (p<0.001) and Asians (p=0.003).

Conclusion

Evidence from the NVQI-QOD registry suggests that there are several racial disparities in stroke thrombectomy management and outcomes, with minorities exhibiting increased post-procedural NIHSS, length of stay, and ICU days. Although African Americans were noted to suffer less in-hospital mortality compared to Caucasians, this did not translate into increased odds of a favorable clinical outcome at 90 days.

Disclosures