SAFETY AND EFFICACY OF TRACSTAR LDP—A PROSPECTIVE, MULTICENTER STUDY ASSESSING THE DURABILITY OF INTRACRANIAL ANEURYSMS

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Introduction Increased procedure time during endovascular treatment of cerebral aneurysms is associated with increased anesthesia related complications and radiation exposure. Elimination of the need for intermediate catheters during aneurysm treatment may decrease procedure time and increase cost-effectiveness. A novel device -the TracStar Large Distal Platform (LDP) -may offer more distal final positioning when compared to commonly used guide catheters, thus decreasing the need for guide catheter use. We investigate the safety and efficacy of the TracStar LDP when used during endovascular aneurysm treatment.

Methods We perform a multicenter retrospective review of endovascular cerebral aneurysm embolizations during which the TracStar LDP was utilized. Aneurysm location, procedural information, and complications were recorded as detailed in the operative note. Vascular tortuosity was assessed via pre-procedural CTA. Distal-most position achieved with TracStar was determined by review of intra-procedural imaging.

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 size 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.

Abstracts

Racial disparities in acute stroke thrombectomy management and outcomes in the United States: Evidence from the NVQI-QOD registry

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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 group 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 stay 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.