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PVSS3.

Society for Vascular Surgery (SVS) Vascular Registry® Evaluation of Age-Stratified Comparative Effectiveness of Carotid Endarterectomy (CEA) and Carotid Artery Stenting (CAS)


Objectives: Recent randomized controlled trials have shown that age significantly affects the outcome of carotid revascularization. The purpose of this study is to utilize data from the SVS Vascular Registry® (VR) to report the influence of age on the comparative effectiveness of CEA and CAS.

Methods: VR collects provider-reported patient-data using a web-based database. Patients were stratified based on age and symptomatology. The primary endpoint was the composite of death, stroke and myocardial infarction (MI) at 30-days.

Results: As of 12/7/10, there were 1347-CEA and 861-CAS <65 years and 4169-CEA and 2536 CAS ≥65 years. In both age groups, CAS was more likely to have radiation or restenosis for disease etiology, be symptomatic, and have higher cardiac comorbidities. In ≥65 years, CAS had higher rates of mortality (1.97% vs 0.91%, p<0.01), stroke (4.89% vs 2.52%, p<0.01) and the combined death/stroke/MI (7.14% vs 4.27%, p<0.01). In <65 years, the primary endpoint (5.23% CAS vs 3.56% CEA, p=0.065) approached statistical significance. Further analyses showed that CAS in ≥65 years was associated with higher primary outcome rate in both symptomatic (9.52% vs 5.27%, p<0.01) and asymptomatic (5.27% vs 3.31%, p<0.01) subgroups. For <65 years, CAS had higher combined death/stroke/MI (4.44% vs 2.10%, p<0.031) in asymptomatics but no difference in symptomatics (6.00% vs 5.47%, p=0.79). After risk adjustment (Table 1), CAS. ≥65 years were more likely to reach the primary endpoint.

Conclusions: Compared to CEA, CAS resulted in inferior 30-day outcomes in asymptomatic patients <65 years.

PVSS4.

Decision Analysis of Optimal Access for Mesenteric Interventions

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Objectives: The objectives of this study were to define variables that predict failure of femoral access for mesenteric arterial intervention. We evaluated the relationship between anatomical and mural characteristics of the mesenteric vessels to determine the optimal access site for successful percutaneous intervention.

Methods: A prospective database identified all patients who underwent an endovascular mesenteric intervention from 2005-2010. Patient demographics, lesion characteristics and operative details were analyzed. All angiograms were reviewed for mesenteric vessel angulation, tortuosity, lesion severity, and calcium score to determine the necessary access site for intervention. All patients had an initial attempt made through femoral access (F), followed by brachial access (B) if technical success was not achieved.

Results: 142 mesenteric arteries in 125 patients were reviewed. Of these, 83 vessels underwent endovascular treatment (50 Celiac, 33 SMA). The majority of these patients were female (n=57). 22 lesions were treated for aneurysm (15 celiac, 7 SMA) and 61 for CMI (12 CTO). 58 lesions were treated with F, while 24 required B. Mean angulation of the mesenteric arteries requiring F access was 48 degrees +/- 15 and 40 +/- 18 for brachial (P=0.03). Calcium at the origin did not impact access site (22% F- severe calcium score; 14% B; P=.5). Presence of CTO predicted brachial route (24% B vs 3.4% F, P=.008). Complication rates (arterial repair, hematoma) were higher in the B group (16% B vs 4% F, P=.05).

Conclusions: Severe angulation and CTO are associated with technical failure for mesenteric intervention via transfemoral route. This is the first study to define factors where brachial access is the optimal approach for a successful endovascular intervention.

![Table 1](image-url)
PVSS5.

Changes in Kidney Volume After Renal Artery Stenting: Does Stenting Preserve Renal Mass?
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Objectives: Renal artery stenting (RAS) improves blood pressure (BP) control and renal function in some patients, but others derive no clear benefit. Proponents of RAS contend that RAS will preserve renal mass even if there is no improvement in BP or renal function. Currently there are limited data to support that notion. The purpose of this study was to assess the longitudinal changes in renal volume after RAS.

Methods: The study cohort consisted of 35 patients with longitudinal imaging available for renal volume quantification. Renal volume was estimated as kidney length x width x depth/2 based on preoperative CTA or MRA. For each patient, the clinical response of BP and renal function to RAS was categorized according to modified AHA guidelines. Changes in renal volume were assessed using paired nonparametric analyses.

Results: The median age of the cohort was 60 years (interquartile range [IQR], 60-74 years). A favorable BP response was observed in 10 of 35 patients (29%). At a median interval between imaging studies of 18 months (IQR, 10-31 months), ipsilateral renal volume was significantly increased from baseline (147 vs. 135 cm^3; P = 0.025). This represents a 4% relative increase in ipsilateral kidney volume from baseline. A significant negative correlation between preoperative renal volume and the relative change in renal volume postoperatively (r = -0.42; P = -0.0055) suggests that smaller kidneys experienced the greatest gains in renal volume after stenting. It is noteworthy that the 25 patients with no change in BP or renal function—clinical failures using traditional definitions—experienced a 12% relative increase in ipsilateral renal volume after RAS.

Conclusions: These data lend credence to the belief that RAS preserves renal mass. This benefit of RAS even extends to those patients who would be considered treatment failures by traditional definitions. It remains unknown whether the changes in renal mass induced by RAS will translate into more stable renal function over the long-term.

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PVSS6.

Door To Treatment Time - Identifying Opportunities for Process Improvement: Results from an Institution Based Protocol Caring for Patients with Ruptured Aortic Aneurysms
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Objectives: Time is of essence while caring for patients with ruptured aortic aneurysms (RAAA). Multiple factors which are beyond the control of treating physician play a role in provision of timely care to these critically ill patients. We examined time line of various events and its impact on the process improvement since the inception of a protocol for patients with ruptured aortic aneurysms.

Methods: A protocol was instituted in August 2009 which included a dedicated team with easy accessibility to referring hospitals to streamline the care pathway for patients with RAAA. A prospective data base was established to record the door to treatment time for patients. Besides patient demographics, mode of transfer, various timelines including time spent at the referring facility to diagnosis, transfer time, wait time at the receiving hospital and overall time were analyzed. A comparative analysis using two-sample Wilcoxon test was then made between patients who were treated prior to group 1 (January 2008-August 2009) and after group 2 (August 2009-November 2010) implementation of protocol.