Objective(s): Optimal anesthesia for carotid endarterectomy remains controversial. We evaluated and compared short-term outcomes after carotid endarterectomy with general (GA) or regional anesthesia (RA) in both symptomatic and asymptomatic patients.

Methods: The 2011-2015 ASC NSQIP (American College of Surgeons National Surgical Quality Improvement Program) Participant Use Data Files (PUF) with merged Vascular Procedure Targeted PUF for carotid endarterectomy were queried for patients undergoing carotid endarterectomy. Postoperative complications and 30-day outcomes in general or regional anesthesia were compared as appropriate.

Results: A total of 14,447 patients were evaluated: 12,389 (85.7%) with GA and 2,058 (14.3%) with RA. The use of GA was inversely associated with patient’s age (88.0% in patients 22-64 years vs 83.4% in patients >=80 years, P<0.0001 for trend) and for symptomatic patients compared to asymptomatic (OR 1.25; 95% CI 1.13-1.38). There were no differences between GA and RA for in-hospital mortality, 30-day mortality or postoperative complications of transient ischemic attack, stroke, bleeding, acute renal failure or restenosis. However, rates of major cardiovascular events (MI, arrhythmia) were strongly associated with GA compared to RA (1.9% vs 1.3%; P=0.056). Sub-group analysis found no significant difference for symptomatic patients in GA compared to RA (1.81% vs 1.47%, P=.54) but in asymptomatic patients, the relative risk of major cardiovascular events was 1.6 times greater (95% CI .97-2.65) for GA compared to RA (1.9% vs 1.2%, P=.06). Total operative time was also greater for GA (median 115 minutes; Inter-quartile range (IQR) 89-145 vs. median 93 minutes; IQR 76-119; P<0.0001); as were 30-day readmission rates (6.7% vs 5.4%; P=0.02, OR=1.26; 95% CI 1.03-1.55).

Conclusions: Cardiovascular events are a feared, relatively common complication of carotid endarterectomy, especially in elective asymptomatic patients. RA had a strong trend towards reduced rates of major cardiovascular outcomes compared to GA. Further, in RA the rate of adverse cardiovascular events is similar to published rates for carotid artery stenting and requires further investigation. As RA is not inferior to GA at 30-day outcomes, combined with the benefit of shorter operative times, length of hospital stay, and decreased 30-day readmission rates, it should be a strongly considered modality.