

JVS ABSTRACTS

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Predictors of mortality in nonagenarians undergoing abdominal aortic aneurysm repair: analysis of the National Surgical Quality Improvement Program dataset

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Background The present study used the American College of Surgeons National Surgical Quality Improvement Program dataset to identify the predictors of 30-day mortality for nonagenarians undergoing endovascular aortic aneurysm repair (EVAR) or open surgical repair (OSR).

Methods Patients aged >90 years who had undergone abdominal aortic aneurysm repair from 2005 to 2017 were identified using procedure codes. Those with operative times <15 minutes were excluded. The demographics, preoperative comorbidities, and postoperative complications of those who had died by 30 days were compared with those of the patients alive at 30 days.

Results A total of 1356 nonagenarians met the criteria: 1229 (90.6%) had undergone EVAR and 127 (9.4%) had undergone OSR. The overall 30-day mortality was 10.4%. The patients who had died within 30 days were significantly more likely to have undergone OSR than EVAR (40.9% vs 7.2%; $P < .001$). They also had a greater incidence of dependent functional status (22.0% for those who had died vs 8.1% for those alive at 30 days; $P < .001$), American Society of Anesthesiology (ASA) classification of ≥ 4 (81.2% vs 18.8%; $P < .001$), perioperative blood transfusion (59.6% vs 20.3%; $P < .001$), postoperative pneumonia (12.1% vs 2.9%; $P = .001$), mechanical ventilation >48 hours (22.7% vs 2.6%; $P < .001$), and acute renal failure (12.1% vs 0.5%; $P < .001$). The EVAR group had a 30-day mortality rate of 2.6% in 1008 elective cases and 28.6% in 221 emergent cases. The OSR group had a 30-day mortality rate of 19.1% in 47 elective cases and 53.7% in 80 emergent cases. In the EVAR cohort, the 30-day mortality group had had a significantly greater incidence of dependent functional status (17% for those who had died vs 8% for those alive at 30 days; $P = .004$), ASA classification of ≥ 4 (76.4% vs 40.3%; $P < .001$), perioperative blood

transfusion (57% vs 19%; $P < .001$), emergency surgery (71% vs 14%; $P < .001$), and longer operative times (150 vs 128 minutes; $P = .001$).

Conclusions Nonagenarians had an incrementally increased, but acceptable, risk of 30-day mortality with EVAR in elective and emergent cases compared with that reported for octogenarians and cohorts of patients not selected for age. We found greater mortality for patients with dependent status, a higher ASA classification, emergent repair, and OSR. These preoperative risk factors could help identify the best surgical candidates. Given these results, consideration for EVAR or OSR might be reasonable for highly selected patients, especially for elective patients with a larger abdominal aortic aneurysm diameter for whom the risk of rupture is higher.

Treatment of carotid stenosis in asymptomatic, non-octogenarian, standard risk patients with stenting versus endarterectomy trials

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Objective Asymptomatic carotid stenosis is the most frequent indication for carotid endarterectomy (CEA) in the United States. Published trials and guidelines support CEA indications in selected patients with longer projected survival and when periprocedural complications are low. Transfemoral carotid artery stenting with embolic protection (CAS) is a newer treatment option. The objective of this study was to compare outcomes in asymptomatic, nonoctogenarian patients treated with CAS vs CEA.

Methods Patient-level data was analyzed from 2544 subjects with $\geq 70\%$ asymptomatic carotid stenosis who were randomized to CAS or CEA in addition to standard medical therapy. One trial enrolled 1091 (548 CAS, 543 CEA) and another enrolled 1453 (1089 CAS, 364 CEA) asymptomatic patients less than 80 years old (upper age eligibility). Independent neurologic assessment and routine cardiac enzyme screening were performed. The prespecified, primary composite endpoint was any stroke, myocardial infarction, or