

patients, and 1.4% for blacks ($P = .0002$). There was a longer operating time ($P < .001$) and total length of stay ($P < .001$), more postoperative pneumonias ($P = .0049$), unplanned intubations ($P < .001$), ventilator dependence ($P < .001$), cardiac arrests ($P < .001$), bleeding requiring transfusions ($P = .0024$), and returns to the operating room ($P = .0021$) among black patients. Multivariate logistic regression identified black race as an independent risk factor for 30-day mortality (relative risk, 1.9; $P = .0007$). Black patients also had more in-hospital deaths than white patients (73.7% vs 43.1%, $P = .001$). The rate of postdischarge strokes did not differ between the groups: 36.4% of all strokes occurred after discharge at a mean of 8.3 days and 54.3% of deaths occurred after discharge at a mean of 11 days.

Conclusions: Black race is identified as an independent risk factor for 30-day mortality after CEA. A significant proportion of strokes and deaths occur after discharge in both racial groups evaluated.

Progression of Asymptomatic Carotid Stenosis Despite Optimal Medical Therapy

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Introduction and objectives: Despite level 1 evidence in support of carotid endarterectomy (CEA) vs medical therapy in selected asymptomatic patients, an alternative posture is that optimal medical therapy (OMT) has not been adequately studied and that such OMT has reduced stroke risk to levels wherein CEA is no longer justified. The goal of this study was to determine the natural history of patients with asymptomatic moderate (50%-69%) carotid stenosis (AMCS) in a contemporary cohort as a function of their associated medical therapy.

Methods: Patients with AMCS determined by duplex ultrasound (DUS) imaging from 2005 to 2006 were identified in our hospital database. Patients were included in the cohort if they had at least one additional DUS during the 6-year follow-up interval. Patient characteristics, including medication history and lipid levels, were collected. Patients were considered to have OMT if they were on aspirin and a statin with a low-density lipoprotein (LDL) level < 100 mg/dL. Study end points included progression of carotid disease by DUS (70%-100%), development of ipsilateral neurologic symptoms (stroke/transient ischemic attack), and death.

Results: There were 906 carotids in 801 patients in the study cohort. The average age was 72.5 years, 77.3% had hypertension, 59.7% had coronary artery disease (CAD), and 84% were on a statin. The LDL cholesterol level was always normal (< 100) in 56.4%, and 29.4% had OMT. The 5-year actuarial outcomes are detailed in the Table. Ipsilateral symptoms developed in 97 patients during follow-up (58% of these were strokes). Multivariate predictors of disease progression were chronic kidney disease (hazard ratio [HR], 2.14; confidence interval [CI], 1.22-3.76; $P = .0008$), and statin use (HR, 1.59; CI, 1.0-2.53; $P = .0049$). The multivariate models of symptom development and survival showed that statin use was protective for both (symptoms: HR, .046; CI, .026-0.79; $P = .0005$; survival: HR, .050; CI, .034-0.73; $P = .00004$).

Conclusions: OMT failed to prevent disease progression or development of ipsilateral symptoms in patients with AMCS.

Table. Five-year outcomes

Variable	Cohort, % (n = 906)	OMT, %		P
		Yes (n = 266)	No (n = 640)	
Survival	75.4	75.4	75.4	.86
Freedom from disease progression	61.5	60.6	61.7	.37
Freedom from symptoms	87	85	87.9	.17
Freedom from ipsilateral CEA/CAS	71.7	67.5	73.6	.10

Outcomes of Endovascular Interventions for Salvage of Renal Transplant Allografts

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Introduction and objectives: As renal transplantation has been performed with increased frequency, interventions to preserve graft function and integrity have been steadily increasing. This study examines the outcomes of endovascular therapy based on indication for renal allograft salvage.

Methods: A prospective transplant registry was queried for all patients undergoing endovascular interventions for transplant allograft salvage from 2002 to 2011. Demographics, perioperative data, and transplant function outcomes were extracted and analyzed.

Results: Among 34 renal transplant recipients who underwent endovascular interventions for graft salvage, the mean age was 48.2 years (18-74 years), and 62% were men. The indications for intervention included worsening serum creatinine (n = 15), renovascular hypertension (n = 11), and structural abnormalities identified on noninvasive imaging (n = 8). Transluminal angioplasty, with or without stenting, was done in 26 patients: 14 (41.2%) with significant transplant stenosis, 11 (32.4%) with peripheral arterial disease (PAD) in proximal iliac vessels, and one with iliac dissection. Five arteriovenous fistulae and two pseudoaneurysms required embolization. One patient had deep venous thrombosis causing obstruction of allograft outflow requiring lysis. There were no periprocedural deaths, and 30-day morbidity was 17.6%. Of patients with worsening renal function, 67% had improvement or stabilization of their renal function. Interestingly, only 36% of patients with renovascular hypertension showed improvement. Mean follow-up was 4.2 years. There were no significant differences in transplant allograft survival over the duration of follow-up based on indication for endovascular intervention (Fig; log-rank test, $P = .03$).

Conclusions: Endovascular salvage of renal allograft transplants can be safely done for various indications, although patients with renovascular hypertension were less likely to improve. Despite differences in symptomatic outcome, the indication for initial intervention does not significantly influence the long-term transplant graft survival.

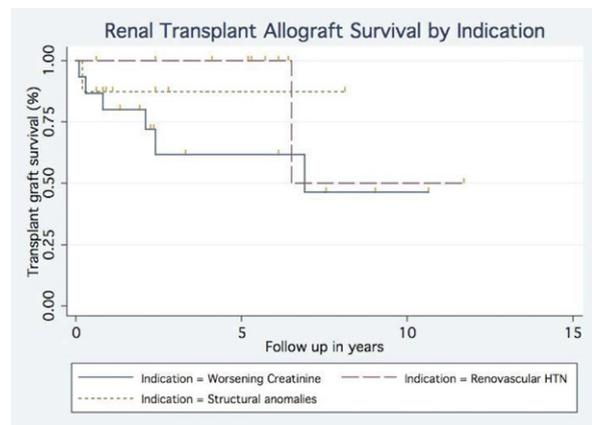


Fig.

Clinical Effectiveness of Secondary Interventions for Restenosis Following Renal Artery Angioplasty and Stenting: Does it Help, Hurt or Even Make a Difference?

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Introduction and objectives: Secondary interventions for restenosis after renal artery angioplasty and stenting are commonly performed, despite limited data on their effectiveness. This study was designed to evaluate whether successful outcomes are achieved in patients after endovascular treatment of recurrent renal artery stenosis (RAS).

Methods: We conducted a retrospective review of all patients who underwent renal artery angioplasty or stenting, or both, for renovascular hypertension between 2001 and 2011 at Dartmouth-Hitchcock Medical Center. We compared the clinical effectiveness of secondary vs primary interventions. Nonparametric models were used to identify factors associated with successful outcomes, as measured by changes in blood pressure, estimated glomerular filtration rate (eGFR), and number of antihypertensive medications.

Results: Thirty-nine patients (54 renal arteries) underwent secondary interventions for recurrent RAS, and 180 patients (180 arteries) underwent primary intervention. There were no significant differences between patients undergoing primary vs secondary interventions with respect to preoperative medication usage (including antihypertensive, antiplatelet or statin medications), comorbid conditions, or blood pressure. Primary and secondary interventions were both completed using a similar proportion of bare-metal stents (90%), with no difference in procedural complications or technical success. At a mean follow-up of 23 months (range, 1-128 months), similar improvements in renal function were found between patients undergoing primary and secondary interventions (Fig). There were no differences in number of antihypertensive medications, overall blood pressure management, or overall survival.