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there have been mixed reports regarding the benefit of carotid endarterectomy (CEA) as it relates to preserving cognitive function. In this work, diffusion magnetic resonance imaging (dMRI) and neurocognitive testing are used to provide insight into structural and functional brain changes that occur in subjects with significant carotid artery stenosis, as well as changes that occur in response to CEA.

Methods: The study design was a prospective, non-randomized, controlled study that enrolled patients with asymptomatic carotid stenosis. Thirteen subjects had severe ECAD (>70% stenosis in at least one carotid artery) and were scheduled to undergo surgery. Thirteen had ECAD with <70% stenosis, therefore not requiring surgery. All subjects underwent neurocognitive testing using the Montreal Cognitive Assessment test (MoCA) and high angular resolution, multi-shell dMRI of the brain at baseline and at 4 to 6 months follow-up. Changes in MoCA scores as well as in fractional anisotropy (FA) along the hippocampus were compared at baseline and follow-up.

Results: At baseline, FA was significantly lower along the ipsilateral hippocampus in subjects with severe ECAD compared with subjects without severe ECAD. MoCA scores were lower in these individuals, but this did not reach statistical significance. At follow-up, MoCA scores increased significantly in subjects who underwent CEA and remained statistically equal in control subjects that did not have CEA. FA remained unchanged in the CEA group and decreased in the control group.

Conclusions: This study suggests that CEA improves cognition and preserves hippocampal white matter structure compared with control subjects not undergoing CEA.

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Angiotensin-converting Enzyme Inhibitors and Angiotensin Receptor Blockers are Associated With Improved Amputation Free Survival in Chronic Limb-threatening Ischemia

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Objective: In the Heart Outcomes Prevention Evaluation (HOPE) study, investigators found that ramipril was associated with improved survival as well as decreased myocardial infarction (MI) and stroke rates in patients with peripheral arterial disease. Nonetheless, their effect on chronic limb-threatening ischemia (CLTI)-specific outcomes is unclear. We aim to assess the effect of angiotensin-converting enzyme inhibitors/angiotensin receptor blockers (ACEIs/ARBs) on amputation-free survival in patients with CLTI undergoing peripheral vascular intervention (PVI) in a Medicare-linked database.

Methods: Patients undergoing PVI in the VQI-VISION database were included. Primary outcome included amputation-free survival. Kaplan-Meier survival and multivariable Cox regression analyses were used to assess 1-year outcomes.

Results: A total of 34,284 patients were included, 46.3% of whom were discharged on ACEIs/ARBs. Patients discharged on ACEIs/ARBs were more likely to be smokers, diabetics, and hypertensive. They were also more likely to present with rest pain. The overall survival for patients on ACEIs/ARBs vs those who are not was 79.1% vs 69.4% ($P < .001$). Freedom from amputation was 87.8% for patients on ACEIs/ARBs vs 84.2% for those who were not ($P < .001$). Amputation-free survival was 70.5% vs 59.5% for ACEIs/ARBs vs no ACEIs/ARBs ($P < .001$). After adjusting for confounders, ACEIs/ARBs use was associated with lower 1-year mortality (hazard ratio [HR], 0.77; 95% confidence interval [CI], 0.7-0.8; $P < .001$) (Fig 1), major amputation (HR, 0.89; 95% CI, 0.8-0.9; $P < .001$), and amputation or death (HR, 0.79; 95% CI, 0.76-0.8; $P < .001$) (Fig 2). There was no difference between the two groups in the risk of target lesion revascularization (HR, 1.03; 95% CI, 0.99-1.1; $P = .184$).

Conclusions: ACEIs/ARBs were independently associated with lower amputation, improved survival, and amputation-free survival at 1 year in patients with CLTI undergoing PVI. The fact that more than one-half the patients were not discharged on these medications presents an area for potential quality improvement.

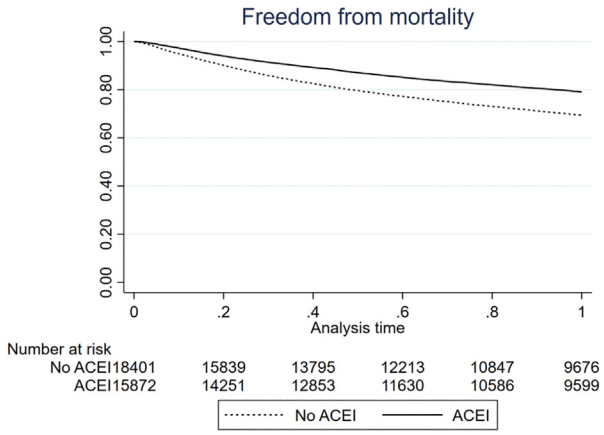


Fig 1. Freedom from all-cause mortality.

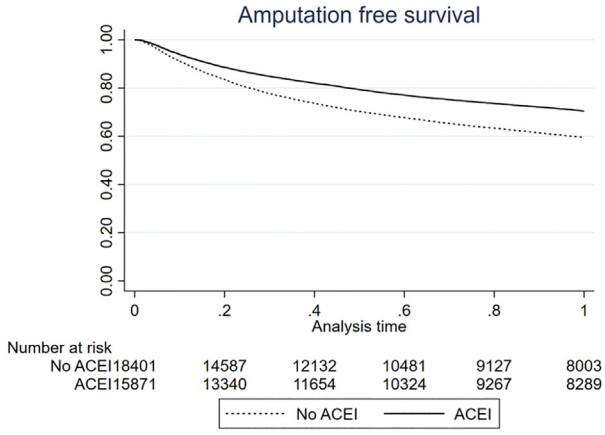


Fig 2. Amputation-free survival.

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Surveillance and Risk Factors for Early Restenosis Following Transcarotid Artery Revascularization

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Objective: Restenosis after transcarotid artery revascularization (TCAR) is a known complication. When identified in the early postoperative period, it may be related to technique. We evaluated our TCAR experience to identify potentially modifiable factors impacting restenosis.

Methods: This is a single institution retrospective review of patients undergoing TCAR from November 2017 to July 2022. Restenosis was defined as >50% stenosis on duplex ultrasound (DUS) or computed