

BP <135/85 mm Hg at 6 months was 42% in the renal denervation arm compared with 28% in the standardized treatment only arm; however, this was not significant. In both arms of the study at 6 months, >85% of patients required ≥ 4 antihypertensive agents, with about 30% requiring 7 antihypertensives.

Dr. Azizi concluded by stating that data from the DENER-HTN trial show that renal denervation with the Symplicity catheter results in a significant reduction in systolic daytime ambulatory BP in patients with resistant hypertension.

Perioperative Beta-Blockade Improves CEA Outcomes

Written by Emma Hitt Nichols, PhD

Perioperative beta-blockade for patients with coronary artery disease (CAD) who are undergoing carotid endarterectomy (CEA) appeared to prevent cardiac damage, resulting in a low mortality rate and no stroke events. George Galyfos, MD, Hippocraton Hospital, Athens, Greece, presented data from a study evaluating the role of beta-blockage in asymptomatic cardiac damage in patients with CAD undergoing CEA.

The death rate after undergoing CEA is up to 50%, with most deaths occurring within the first 48 hours. Therefore, CEA is considered to be a procedure of intermediate cardiac risk according to guidelines of the American College of Cardiology and American Heart Association. In 2009, those guidelines and those of the European Society of Cardiology recommended preoperative beta-blockade with dose titration as Class IIa evidence [Bouri S et al. *Heart* 2013]. In addition, a review revealed that in most studies, beta-blockade in patients undergoing vascular surgery resulted in a decrease in cardiovascular events, mortality, heart rate, and blood pressure compared with control; however, there was also an increased risk of bradycardia and mortality [Brooke BS, *J Vasc Surg* 2010]. The purpose of this study was to further evaluate the effect of beta-blockade on the outcomes of patients undergoing CEA.

In the present study, 162 patients with CAD who were expected to undergo CEA were randomly assigned to receive a beta-blocker (n=70) or not (n=92). In addition, patients were categorized into 3 groups (low, medium, or high cardiac risk) according to their Vascular Study Group of New England Cardiac Risk Index score [Bertges et al. *J Vasc Surg* 2010]. On the basis of this index, most patients with low cardiac risk were asymptomatic (64%), whereas a majority of patients at high cardiac risk had a history of transient ischemic attack or amaurosis (83%).

Patients who received beta-blockade before CEA had less cardiac damage compared with patients who did not undergo beta-blockade (odds ratio, 0.25; 95% CI, 0.08 to 0.77; p=0.01). Following the CEA procedure, there were no strokes overall, and no events were observed in patients at high cardiac risk. In addition, 14% of patients experienced asymptomatic cardiac damage within the first 72 hours, but there were no cases of symptomatic cardiac damage. The mortality rate in the study was 0.6%.

Interestingly, troponin levels increased by the first day after CEA for patients at low and intermediate cardiac risk but not for patients at high cardiac risk (Table 1). At Days 3 and 7, the troponin levels decreased in patients at low and intermediate risk but remained the same for patients at high risk. This suggests that patients at high risk receive the greatest benefit from beta-blockade.

Table 1. Troponin Levels After Carotid Endarterectomy

	Cardiac Risk (n=162)		
	Low (n=70)	Intermediate (n=80)	High (n=12)
Preoperatively	0.007	0.008	0.004
Day 1	0.297 (0.018)	0.624 (0.015)	0.026
Day 3	0.102 (<0.05)	0.204 (0.028)	0.023
Day 7	0.016	0.025	0.003

According to Vascular Study Group of New England Cardiac Risk Index score. Parentheses indicate significant p values.

In conclusion, Dr. Galyfos stated that data from this study indicate that perioperative administration of beta-blockers appears to provide a protective effect from cardiac damage in patients with CAD who are undergoing CEA. In addition, he called for more trials with less bias to examine the benefit of beta-blockade in this population.

24-Hour ceABP Is a Better Measurement in Young Patients

Written by Emma Hitt Nichols, PhD

Twenty-four-hour central ambulatory blood pressure (ceABP) was shown to be significantly lower than peripheral ambulatory blood pressure (pABP) in adolescents and young adults. Higher blood pressure (BP) was found to be correlated with left ventricular mass index (LVMI) and common carotid intima-media thickness (cIMT). Angeliki Ntineri, MD, University of Athens, Athens, Greece, presented data from a study of 24-hour ceABP in adolescents and young adults.

pABP is known to be higher than ceABP in young patients (up to 30 mm Hg) because of amplification of the