Response to Letter Regarding Article, “Non-ST-Segment–Elevation Myocardial Infarction in Patients Undergoing Carotid Endarterectomy or Carotid Artery Stent Placement”

We agree with Filis et al1 that in total, further investigation of the incidence and management of perioperative myocardial infarction (MI) after carotid endarterectomy (CEA) or carotid artery stent (CAS) is needed. However, it is important to avoid conflation of asymptomatic perioperative MI with isolated perioperative cardiac marker elevation in this context. Although the former represents either type I or type II MI according to the third universal definition of MI,2 the latter may instead be a function of pre-existing disease processes such as chronic kidney disease or congestive heart failure. Such comorbidities are frequently present in patients who undergo carotid stenosis interventions: our study found chronic kidney disease and congestive heart failure in 20% and 30% of our study cohort, respectively.3 Observational studies have found an association of postoperative cardiac enzyme elevation and subsequent mortality among noncardiovascular surgical patients4,5; however, it is unclear whether such events are MI that can be effectively prevented or treated, versus exacerbation of pre-existing disease processes. Further investigation is needed into the natural history of post-CEA/CAS asymptomatic MI, compared with post-CEA/CAS cardiac enzyme elevation, and identification of therapeutic interventions for each entity. In the meantime, we agree with Devereaux et al4 that all patients should undergo serial serum troponin screening after CEA or CAS, in addition to preoperative and postoperative 12-lead ECG assessment. Continuous telemetry monitoring is also advisable during the immediate postoperative period for identification of unstable post-MI arrhythmias and hemodynamic instability.

Secondarily, we agree in part with the criticisms of Filis et al regarding our study methodology. Although our analysis is not a prospective, randomized trial, the roles of publication and patient selection biases are likely negligible: the Nationwide Inpatient Sample is the largest all-payer inpatient database in the United States and is annually compiled without regard to subsequent analyses of its prospectively collected data. Nationwide Inpatient Sample methodology encompasses a wide variation of community hospitals over a large geographic population: during the years sampled in our analysis, the number of states contributing information increased from 37 to 44, with between 7.8 and 8 million annual sample hospital discharges during this time. Furthermore, results from prospective trial data are sometimes restricted in generalizability because of the patient selection and trial protocol that may be difficult to apply in real-world medical management. Studies such as ours serve an important function in understanding the translation of randomized controlled trial results into contemporary clinical practice and barriers faced in such implementation.

Disclosures

None.

Amir Khan, MD
UCSF Fresno, Community Regional Medical Center
Fresno, CA

Malik M. Adil, MD
University of Minnesota
Minneapolis

Adnan I. Qureshi, MD
Zeenat Qureshi Medical Center, CentraCare Health
St. Cloud, MN

Response to Letter Regarding Article, "Non-ST-Segment−Elevation Myocardial Infarction in Patients Undergoing Carotid Endarterectomy or Carotid Artery Stent Placement"
Amir Khan, Malik M. Adil and Adnan I. Qureshi

Stroke. 2014;45:e171; originally published online July 10, 2014;
doi: 10.1161/STROKEAHA.114.004929

The online version of this article, along with updated information and services, is located on the World Wide Web at:
http://stroke.ahajournals.org/content/45/8/e171

Permissions: Requests for permissions to reproduce figures, tables, or portions of articles originally published in Stroke can be obtained via RightsLink, a service of the Copyright Clearance Center, not the Editorial Office. Once the online version of the published article for which permission is being requested is located, click Request Permissions in the middle column of the Web page under Services. Further information about this process is available in the Permissions and Rights Question and Answer document.

Reprints: Information about reprints can be found online at:
http://www.lww.com/reprints

Subscriptions: Information about subscribing to Stroke is online at:
http://stroke.ahajournals.org//subscriptions/