Readmissions After Carotid Artery Revascularization in the Medicare Population

A Word of Caution*

Barry T. Katzen, MD

In this issue of the Journal, Al-Damluji et al. (1) present their findings culled from a detailed evaluation of the Centers for Medicare and Medicaid Services database. Through their study, the authors have done an outstanding job in highlighting a subject of increasing importance in clinical care, namely, readmission rates following the performance of fairly common procedures of revascularization of the carotid artery in the Medicare population. Readmissions are increasingly being monitored as a benchmark of both the quality of and the costs to the health care system. As such, identifying diseases and procedures that are associated with significant readmission rates allows physicians and administrators to focus attention on identifying variables and creating opportunities for improvement in the management of these patients.

The authors’ first observation was a nearly 10% rate of 30-day readmissions in patients undergoing carotid revascularization. This number might seem surprisingly high and points to the value of database mining for this type of information. This important observation presents a strong clinical target to be measured and on which to improve outcomes. In particular, the authors identify that the causes of readmission were diverse and related to multiple comorbidities, the great majority being unrelated to neurological events or injuries. In fact, the top 10 causes of readmission accounted for only 50% of the readmissions, challenging practitioners who focus on only 1 area to take a close look at readmission rates in their own institutions.

The increased readmission rate across virtually all categories of patients, both symptomatic and asymptomatic, including all age groups and sex differences, is an interesting observation but may be contributed to by a number of mitigating factors. This study was based on data from a fee-for-service database that includes an estimated 70% of the Medicare population; this criterion may have resulted in selection biases in terms of patient selection and delivery of service. By Medicare criteria, carotid artery stenting (CAS) is principally performed in symptomatic patients at “high risk for carotid endarterectomy (CEA)” or in asymptomatic patients enrolled in US Food and Drug Administration-approved high-risk clinical trials or registries (90% of the CAS patients in the database). While propensity score matching methodologies are statistically designed to create similar groups, the authors mention that limitations of the study included variabilities in coding, planned readmissions that could not be differentiated from unplanned readmissions, and, importantly, the lack of randomization, which can add confounds to the data analysis, as well as the lack of any correlation with the outcomes of clinical procedures during the index hospitalization. As the authors state, “The patients in our cohort were not randomized to the carotid revascularization...
strategies, and as a result, residual confounds may be present in our observed association despite the use of propensity score matching.” In this regard, in the matched cohort of patients—32,119 patients in each group—of course represent almost all of the CAS patients and a much smaller percentage of the CEA patients.

As a result, the reader should be wary of drawing the conclusion that CAS is “higher risk” than is CEA because of the earlier mentioned issues; despite propensity scoring, there still may have been significant variations between the two groups. Importantly, post-procedural stroke rates in the 30-day period were low in both groups. CEA and CAS are both performed to reduce the risks for stroke and death related to extracranial atherosclerosis, and it is these factors that remain most important in comparing procedure alternatives.

The authors should be congratulated for this extensive analysis, which successfully points out an important opportunity for the medical community to further study the prevalence of readmission rates in carotid revascularization.

REPRINT REQUESTS AND CORRESPONDENCE: Dr. Barry T. Katzen, Miami Cardiac and Vascular Institute, 8900 North Kendall Drive, Miami, Florida 33176-2118. E-mail: barryk@baptisthealth.net.

REFERENCE


KEY WORDS carotid artery stenting, carotid endarterectomy, carotid revascularization, readmission