Letter by Giri Regarding Article, “Comparative Effectiveness of Carotid Revascularization Therapies: Evidence From a National Hospital Discharge Database”

To the Editor:

After reading the article by McDonald et al., I have several concerns about the analysis and the authors’ interpretations of the results. First, a national registry encompassing carotid revascularization procedures at 141 institutions has demonstrated the folly in using large observational data to compare outcomes of carotid artery stenting (CAS) versus carotid endarterectomy. The referral patterns for these 2 procedures are so fundamentally different, with CAS being performed in cohorts with much higher comorbidities, that even well-performed propensity-matched analyses fail to balance groups for confounders. Despite the authors claims that their propensity match successfully balanced groups, the present analysis has the serious weakness of being derived from an administrative database that does not contain rich enough preprocedure clinical data to verify true balance. The authors could attempt to address this by specifying ≥1 falsification end points to serve as negative controls for their primary hypothesis.

In addition, rates of documented in-hospital adverse events after carotid revascularization are directly related to the rigor of neurological assessment performed on patients postprocedure. Because of reimbursement requirements, patients receiving carotid stents are often enrolled in postmarketing and investigational device exemption (IDE) trials that require independent neurological assessment and independent neurological event adjudication postprocedure. This is much more rarely the case with carotid endarterectomy. The authors should specify the proportions of independent neurological assessment/adjudication in each arm or at least the proportions of patients enrolled in postmarketing/IDE studies, and this covariate must be included in the propensity model. If this information is unavailable, the results as presented are irrevocably flawed.

The authors note no difference in acute myocardial infarction rates in patients treated with carotid endarterectomy versus CAS. This is in stark contrast to, not only randomized data on competing risks/benefits of endovascular versus open surgical procedures throughout the vasculature. Rather than recognizing that this difficult-to-believe finding is likely because of compromised internal validity secondary to the treatment-selection and ascertainment biases mentioned above, the authors propose that this finding is reflective of expected outcomes in the real-world. Finally, the authors posit that the frequency of embolic protection device usage with CAS in domestic practice differs from that seen in Carotid Revascularization Endarterectomy Versus Stenting Trial (CREST). This is incorrect, as 95% of CAS procedures domestically are performed with embolic protection device, a nearly identical proportion as seen in CREST.

Disclosures

None.

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