Response to Letter by Pelz and Lownie Regarding Article, “Intracranial Hemorrhage Is Much More Common After Carotid Stenting Than After Endarterectomy: Evidence From the National Inpatient Sample”

Response:

We thank Drs Pelz and Lownie for their thoughtful comments regarding our recent publication in Stroke.1 We share their concern that carotid artery stenting may be associated with an excess risk of intracranial hemorrhage (ICH). The Carotid Revascularization Endarterectomy Versus Stenting Trial (CREST) investigators have reported, among 2500 study participants who underwent carotid revascularization, nearly equivalent safety and efficacy of carotid artery stenting and carotid endarterectomy. However, even well-designed prospective randomized studies such as CREST face sample size limitations. In the case of rare events such as ICH, a much larger data set is required than what is traditionally afforded by prospective studies to identify significant differences in the incidence of these events. The National Inpatient Sample is such a data resource, because it permits assessment of near-population scale data to assess outcomes and complication rates in hospitals across the United States.

We are encouraged by the preliminary findings of Drs Pelz and Lownie regarding the use of the modified carotid artery stenting approach, termed primary carotid stenting. Primary carotid stenting may offer advantages over traditional carotid artery stenting techniques because it minimizes outward radial stretching forces through avoidance of balloon angioplasty. Because it is widely speculated that ICH is a result of cerebral hyperperfusion due to baroreceptor trauma from these outward stretching forces, primary carotid stenting has the potential to significantly reduce the rate of ICH. Data from the National Inpatient Sample suggest that the rate of ICH after carotid stenting varies with clinical presentation and ranges from 0.5% among asymptomatic presentations that accounts for 90% of all cases to 4% for symptomatic presentations, representing 10% of all cases. Because there is such a disparity between clinical presentations, future studies of the efficacy and safety of carotid artery stenting and derivatives such as primary carotid stenting must account for this observation to accurately determine the incidence of ICH.

We hope our findings promote further dialogue and research of carotid revascularization therapies and methods to minimize complications such as ICH.

Disclosures

None.

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