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Letter by Galyfos et al Regarding Article, “Periprocedural Myocardial Infarction After Carotid Endarterectomy and Stenting: Systematic Review and Meta-Analysis”

To the Editor:

We have read with great interest the meta-analysis by Boulanger et al,1 where the authors conclude that the periprocedural risk for myocardial infarction (MI) after carotid endarterectomy (CEA) and carotid angioplasty with stenting do not show any significant difference. Furthermore, the authors conducted a subgroup analysis, and they identified specific risk factors that were associated with increased MI incidence during the first 30 postoperative days. However, there are some points that have to be commented and further discussed.

Considering the definition of MI applied in all the included trials, the data reveal that 81% of all carotid angioplasty with stenting studies and 44% of all CEA studies did not report or use any explicit definition, whereas only a small proportion of studies complied with the latest and most up-to-date definition of MI (Third Universal Definition of MI).2 Therefore, as the statistical analysis (F) clearly implies, the heterogeneity was high for someone to ignore and to allow safe conclusions to be drawn. Additionally, the authors comment in their article that although the definition has changed over time and MI was less likely to be diagnosed in the past, the risk for MI has remained unchanged. However, one should underline that improvements in medical treatment and preoperative recommendations as well as periprocedural management of patients scheduled for carotid intervention probably have kept this risk low during the last decade. Nevertheless, we have showed in previous studies that postprocedural myocardial ischemia occurs after CEA irrespective from cardiac risk.3 In addition to the effect of specific factors, such as the type of anesthesia or patient’s sex, on postoperative MI, it is still a matter under debate.4

Considering the diagnostic and prognostic role of biomarkers related to MI, authors reveal that cases with increased biomarkers, but without symptoms or electrocardiographic changes, were excluded from this analysis. Indeed, the latest MI definition requires the presence of at least 2 out of 3 main diagnostic requirements.5 However, the high incidence of increase in cardiac biomarkers after CEA is a parameter that should not be ignored. Cardiac troponin is the most specific and sensitive serum marker of myocardial ischemia or infarction to date,2 and as it has been shown before, this myocardial ischemia early after CEA has been strongly associated with late cardiac mortality.5 Quality of life could be strongly affected not only by an early postoperative cerebrovascular event, but also by a severe early or late cardiac complication and its associated morbidity and mortality. Hence, the contributors of the latest definition of MI underline the strong association of periprocedural asymptomatic myocardial ischemia with early and late mortality after noncardiac surgery.

In conclusion, carotid interventions seem to have a significant hemodynamic effect on patients, leading to some degree of myocardial ischemia periproactively, and this observation has not been fully clarified yet. Future randomized trials should be designed based on strict diagnostic criteria and taking into account early as well as late effects of symptomatic and asymptomatic myocardial ischemia to produce safer conclusions concerning its true impact.

Disclosures

None.

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