Commentary on ‘Stroke/Death Rates Following Carotid Artery Stenting and Carotid Endarterectomy in Contemporary Administrative Dataset Registries: A Systematic Review’

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A MATTER OF CONCERN

The aim of the study by Paraskevas et al.\textsuperscript{1} was to compare stroke/death rates after CAS/CEA in contemporary dataset registries, to determine whether they fall within the AHA thresholds and if they had declined over time.

The authors reviewed 21 registries published between January 2008 and February 2015. Datasets were specifically searched for outcome according to whether patients were termed “high risk” or “average risk” for CEA according to the criteria published in the SAPPHIRE trial.\textsuperscript{2}

AVERAGE MEDICAL RISK

Among 21 registries in asymptomatic “average risk” patients, CAS was associated with a higher stroke/death rates than CEA in 16 (76%), while in five registries CAS was associated with similar rates. Furthermore, in nine registries (43%), CAS exceeded the 3% threshold limit recommended by the AHA/ASA for asymptomatic patients.\textsuperscript{3}

The same trend in favour of CEA was observed in 16 out of 18 (88%) registries for “average risk” symptomatic patients with a risk greater than 10% for CAS in five registries.

In neither of these two groups was there any evidence of decline over time in procedural risk after CAS.

HIGH MEDICAL RISK

Among three dataset registries reporting outcomes after CAS/CEA in high risk symptomatic patients, two reported higher stroke/death rates after CAS than CEA. The same trend was observed in high risk symptomatic patients.

The AHA/ASA decision to broaden CAS indications, based on CREST data,\textsuperscript{4} had suggested that contemporary CAS outcomes fall within accepted thresholds. The review by Paraskevas et al.\textsuperscript{1} shows that this is not the case. By stratifying patients according to symptoms and medical risk status, it allows for useful comparisons between CAS and CEA. The authors demonstrate that following CAS compared with CEA, there is an increased risk of stroke or death in symptomatic and asymptomatic patients with average as well as high medical risk. This is particularly true among symptomatic medically high risk patients with a 9.3% peri-procedural stroke/death rate following CAS versus 2.5% following CEA.\textsuperscript{5}

Furthermore, evidence suggests that the risk of stroke after a TIA is front loaded with the highest risk period being the first 14 days after onset of symptoms.\textsuperscript{6} The largest study to compare outcomes during the acute period after the onset of symptoms comes from a meta-analysis of the three European RCTs. In this study, patients undergoing CAS <7 days after symptoms exhibited a 9.4% rate of death/stroke compared with 2.8% for patients undergoing CEA during the same period.\textsuperscript{7} This key issue arising from pooled RCTs has been underscored by this review of contemporary dataset registries.

While the clinical pitfalls of administrative datasets are well known (selection bias, potential coding errors), in this case these datasets reflect actual practice and allow for reliable comparisons between CEA and CAS.

Because of the similarities between the CEA adverse events rates recorded in these registries and RCTs, the significantly greater proportion of adverse events observed among CAS patients in these registries remains a matter of concern.

REFERENCES