Asymptomatic Carotid Stenosis

To the Editor:

The recent publication of ACST confirmed the findings from a previous randomized controlled trial that carotid endarterectomy reduces the number of strokes in patients with asymptomatic carotid stenoses.1,2 These findings could be interpreted as a basis for screening for carotid artery stenoses and the widespread expansion of carotid interventions in patients with asymptomatic disease. The report by Goessens and colleagues highlights important issues in the management of such asymptomatic arterial stenoses.3 The authors identify ≥50% carotid artery stenoses in 8% of patients with symptoms of arterial disease at other sites. Carotid artery narrowing was predictive of vascular death and myocardial infarction but not ischemic stroke during subsequent follow-up. In the 221 patients with ≥50% carotid artery stenoses the authors report 51 deaths, 28 myocardial infarctions and only 6 ischemic strokes during mean follow-up of 4 years. Thus, only 7% of the serious clinical events were strokes in patients with ≥50% carotid artery stenoses. In fact, the incidence of ischemic stroke was similar in those patients without ≥50% carotid artery stenoses. The authors state that this low rate of stroke was achieved despite no patients undergoing carotid intervention. I note from Table 3 of the study by Goessens et al that 22 patients had some form of carotid intervention presumably because of symptom development.3 Pathology studies from the coronary and to a lesser degree from the carotid circulation suggest that atherothrombotic events result from rupture or erosion of the fibrous cap which can occur in minimally as well as severely stenotic atheroma.4 Examination of data from ACST and NASCET emphasizes the importance of symptoms in the selection of patients for carotid intervention.1,5 (Table). The data emphasizes the higher risk of stroke associated with symptomatic carotid atherosclerosis even if the stenosis is not significant (<50%). The actual risk associated with symptomatic carotid atherosclerosis is likely to be higher than depicted in the Table because in the North American trial patients were enrolled if they had experienced a neurological event within 6 months.3 Population studies suggest that up to 32% of patients with ≥50% carotid stenosis have a stroke within 12 weeks of a neurological event and before carotid intervention.6 These data and that presented by Goessens et al suggest that the main health measures that will substantially improve the prognosis of patients with carotid atherosclerosis are: (1) more urgent presentation and management of symptomatic carotid atherosclerosis; (2) optimization of medical management of atherosclerosis in order to reduce the risk of myocardial infarction and vascular death. Continued efforts to identify imaging or blood findings which predict plaque rupture in asymptomatic patients are also warranted.

Sources of Funding

J.G. is supported by funding from the NHMRC (379600), NIH (R01 HL080010-01) and NHF. J.G. is a Practitioner’s Fellow of the NHMRC, Australia (431503).

Disclosures

None.

Jonathan Golledge, MChir, FRACS, FRCS
The Vascular Biology Unit
James Cook University
Townsville, Queensland, Australia


Table. Relationship Between Symptoms, Stenosis Severity and Stroke at 5 Years

<table>
<thead>
<tr>
<th>Stenosis</th>
<th>NASCET Medical</th>
<th>Surgery</th>
<th>ASCT Medical</th>
<th>Surgery</th>
</tr>
</thead>
<tbody>
<tr>
<td>≤50%</td>
<td>690 18.7%</td>
<td>678 14.9%</td>
<td>643 9.5%</td>
<td>641 3.7%</td>
</tr>
<tr>
<td>50%–69%</td>
<td>428 22.2%</td>
<td>430 15.7%</td>
<td>455 11%</td>
<td>421 4.4%</td>
</tr>
<tr>
<td>≥70%</td>
<td>305 28%</td>
<td>314 13%</td>
<td>462 8.1%</td>
<td>498 5%</td>
</tr>
</tbody>
</table>

NASCET indicates North American Symptomatic Carotid Endarterectomy Trial; ASCT, Asymptomatic Carotid Surgery Trial. Stenosis severity was measured differently in each trial. ACST used ultrasound based criteria.1 NASCET used angiographic criteria.6 *ipsilateral stroke; †any stroke. The results assume a perioperative rate of stroke of 1.6% in ACST equal for each subgroup. Other perioperative complications are not included.

(Stroke. 2007;38:e150.)
© 2007 American Heart Association, Inc.

Stroke is available at http://stroke.ahajournals.org

DOI: 10.1161/STROKEAHA.107.494401
e150
Asymptomatic Carotid Stenosis
Jonathan Golledge

*Stroke*. 2007;38:e150; originally published online September 13, 2007;
doi: 10.1161/STROKEAHA.107.494401

*Stroke* is published by the American Heart Association, 7272 Greenville Avenue, Dallas, TX 75231
Copyright © 2007 American Heart Association, Inc. All rights reserved.
Print ISSN: 0039-2499. Online ISSN: 1524-4628

The online version of this article, along with updated information and services, is located on the
World Wide Web at:
http://stroke.ahajournals.org/content/38/11/e150

Permissions: Requests for permissions to reproduce figures, tables, or portions of articles originally published
in *Stroke* can be obtained via RightsLink, a service of the Copyright Clearance Center, not the Editorial Office.
Once the online version of the published article for which permission is being requested is located, click
Request Permissions in the middle column of the Web page under Services. Further information about this
process is available in the Permissions and Rights Question and Answer document.

Reprints: Information about reprints can be found online at:
http://www.lww.com/reprints

Subscriptions: Information about subscribing to *Stroke* is online at:
http://stroke.ahajournals.org//subscriptions/