Optimal Treatment of Asymptomatic Patients with Carotid Stenosis

Jean-Baptiste Ricco, Ross Naylor

INTENSIVE MEDICAL THERAPY

- Smoking cessation, exercise, Mediterranean diet
- Low-dose aspirin (75-325 mg) or clopidogrel (75mg)
- Statins to the maximum tolerated dose
- Angiotensin-converting enzyme inhibitor
- Optimal blood pressure control

ADHERENCE TO MEDICAL THERAPY

- Never evaluated in landmark RCTs
- Never evaluated for secondary prevention in patients with asymptomatic carotid stenosis

Among 1104 patients with vascular disease, the range of adherence to guideline-recommended therapies at 3-month was

- 64%-91% for aspirin
- 43%-83% for statins
- 49%-66% for ACEIs

ASYMPTOMATIC CAROTID STENOSIS ACAS-ACST TEMPORAL CHANGES

<table>
<thead>
<tr>
<th>TRIAL</th>
<th>published</th>
<th>study years</th>
<th>any stroke</th>
<th>ipsilateral stroke</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACAS</td>
<td>1995</td>
<td>1-5</td>
<td>17.5% @5y 3.6% pa</td>
<td>11.0% @5y 2.2% pa</td>
</tr>
<tr>
<td>ACST</td>
<td>2004</td>
<td>1-5</td>
<td>11.8% @5y 2.4% pa</td>
<td>5.3% @5y 1.1% pa</td>
</tr>
<tr>
<td>ACST</td>
<td>2010</td>
<td>6-10</td>
<td>7.2% @5y 1.4% pa</td>
<td>3.6% @5y 0.7% pa</td>
</tr>
</tbody>
</table>


Naylor, Rothwell, Gaines E JVES 2009.
THE ROLE OF BEST MEDICAL THERAPY

• In 1995, ACAS reported an annual risk of stroke of 2.2% in the medical arm of the study
• In ACST, years 1 to 5, the annual risk of stroke was 1.1% and decreases to 0.7% in years 6 to 10


THE RISE OF BEST MEDICAL THERAPY

Current use of various medical treatments by year of follow-up and by original treatment allocation to immediate or deferred CEA

ACST-1: Halliday A. The Lancet 2010

CONSEQUENCES IN ACST-1 OF LIPID-LOWERING THERAPY

Net benefits of CEA were significant, both for those on lipid-lowering therapy and for those not

ACST-1: Lancet (2010)

THE DEGREE OF STENOSIS IS NOT ALL

In asymptomatic patients, the risk of stroke is more related to the structure of the plaque than to the degree of stenosis

SILENT IPSILATERAL BRAIN INFARCT (MRA)

Asymptomatic patients with silent infarction have a higher risk of ipsilateral stroke (3.6% vs. 1%, \( p = .002 \))

ACSRS
**EMBOLIC SIGNALS ON TCD IN PATIENTS WITH ASYMPTOMATIC CAROTID STENOSIS**

Association between embolic signals and cumulative event rates for stroke or TIA.

Markus HS, ACES Study, The Lancet 2010

**TCD(+) HR of ipsilateral stroke: 5.57 (1.61–19.32; p=0.007)**

---

**ESVS/ESC RECOMMENDATIONS**

**ASYMPTOMATIC**

- **Carotid stenosis 60-99%**
  - **CEA + BMT should be considered**
  - **Class IIa B**
- **Carotid occlusion or near occlusion**
  - **CAS + BMT may be considered**
  - **Class IIb B**

---

**ENDARTERECTOMY VS. STENTING FOR ASYMPTOMATIC CAROTID DISEASE**

<table>
<thead>
<tr>
<th>Study</th>
<th>Endarterectomy</th>
<th>Stenting</th>
<th>Odds Ratio (95% CI)</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>CAS &amp; CEA</td>
<td>30</td>
<td>30</td>
<td>1.5 (0.95–2.3)</td>
<td>0.08</td>
</tr>
<tr>
<td>CAS alone</td>
<td>40</td>
<td>40</td>
<td>1.2 (0.85–1.7)</td>
<td>0.26</td>
</tr>
<tr>
<td>TCS</td>
<td>10</td>
<td>10</td>
<td>1.1 (0.76–1.6)</td>
<td>0.64</td>
</tr>
</tbody>
</table>

In asymptomatic patients, CAS is associated with a significantly higher stroke and death rate at 30 days (2.9%) than CEA (1.8%).

85 authors and reviewers agree on these recommendations.