Lessons learned from US datasets with Outcomes after CEA and CAS

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I have no conflicts of interest

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A Division of American Heart Association

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‘average risk’ asymptomatic patients

- CAS risks = CEA in 5/21 Registries (24%)
- CAS risks higher than CEA in 5/21 Registries (24%), no stats
- CAS risks sig higher than CEA in 11/21 Registries (52%)

‘average risk’ symptomatic patients

- CAS risks = CEA in 2/18 Registries (11%)
- CAS risks higher than CEA in 5/18 Registries (29%), no stats
- CAS risks sig higher than CEA in 11/18 Registries (61%)

Death/stroke after CEA/CAS in ‘average risk’ asymptomatic patients

- CAS risks = CEA in 2/18 Registries (11%)
- CAS risks higher than CEA in 5/18 Registries (29%), no stats
- CAS risks sig higher than CEA in 11/18 Registries (61%)

Death/stroke after CEA/CAS in ‘average risk’ symptomatic patients

- CAS risks = CEA in 2/18 Registries (11%)
- CAS risks higher than CEA in 5/18 Registries (29%), no stats
- CAS risks sig higher than CEA in 11/18 Registries (61%)

CEA risks >6% in 1/18 Registries (11%)
- CAS risks >6% in 13/18 Registries (72%)
- CAS risks >10% in 5/18 Registries (28%)
in the 'real world', CAS is being performed with significantly higher procedural risks (compared to CEA) and with procedural risks well in excess of AHA guidelines, especially in symptomatic patients

### Procedural Risk After Urgent CEA

<table>
<thead>
<tr>
<th>Country</th>
<th>Sample Size</th>
<th>0-48 hrs n (%)</th>
<th>3-7 days n (%)</th>
<th>8-14 days n (%)</th>
<th>&gt;14 days n (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sweden Stroke 2012</td>
<td>2,596</td>
<td>11.5%</td>
<td>3.6%</td>
<td>4.0%</td>
<td>5.4%</td>
</tr>
<tr>
<td>UK NVR 2015</td>
<td>19,178</td>
<td>4.1%</td>
<td>2.8%</td>
<td>2.4%</td>
<td>2.4%</td>
</tr>
<tr>
<td>Germany ESVS 2015</td>
<td>47,653</td>
<td>3.0%</td>
<td>2.5%</td>
<td>2.8%</td>
<td>2.4%</td>
</tr>
</tbody>
</table>

**Early Outcomes After Carotid Artery Stenting Compared With Endarterectomy for Asymptomatic Carotid Stenosis**

21,678 asymptomatic patients undergoing CAS

- Vascular surgeons: 25% 4.1% death/stroke
- Cardiologists: 23% 2.6% death/stroke
- Neurosurgeons: 16% 3.5% death/stroke
- Radiologists: 12% 6.0% death/stroke
- General Surgeons: 7% 6.3% death/stroke
- Neurologists: 6% 5.8% death/stroke

Median annual physician CAS volume = 1.5 (IQR 1-3)

Median annual hospital CAS volume = 4