Early CEA after symptom onset is beneficial to patients: The earlier the better!

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I have no conflicts of interest

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Delay to surgery strokes prevented at 5 years per 1000 CEAs

Carotid Endarterectomy Trialists Collaboration

stroke after TIA

549 stroke patients who suffered a preceding TIA

43% of strokes occurred <7 days of the index TIA

stroke risk after TIA (50-99% stenosis)

<table>
<thead>
<tr>
<th>Stroke after TIA</th>
<th>48h</th>
<th>72h</th>
<th>7d</th>
<th>14d</th>
<th>5 yrs</th>
</tr>
</thead>
<tbody>
<tr>
<td>ECST/NASCET/VA BMT</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>21%</td>
</tr>
<tr>
<td>Purroy Stroke 2007</td>
<td>20%</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>OIS Stroke 2009</td>
<td></td>
<td></td>
<td>10%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bonifati Stroke 2011</td>
<td>8%</td>
<td></td>
<td>22%</td>
<td>25%</td>
<td></td>
</tr>
<tr>
<td>Johansson Stroke 2011</td>
<td>5%</td>
<td>8%</td>
<td>11%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Merwick Stroke 2011</td>
<td>8%</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Marnane Stroke 2014</td>
<td>5%</td>
<td>9%</td>
<td>9%</td>
<td>16%</td>
<td></td>
</tr>
</tbody>
</table>
Timing of TIAs preceding stroke

Time window for prevention is very short

- Spontaneous embolisation
  - 30 minutes of pre-op TCD monitoring
  - CEA <7 days of most recent symptom: 42%
  - CEA 8-14 days of most recent symptom: 22%
  - CEA >14 days after most recent symptom: 16%

Salem EJVES 2011;41:720-25

Barriers to changing practice

- Political issues
  - Low priority for treating TIA patients as emergencies
  - Reluctance to "ring fence" dedicated CEA theatre lists
  - Referral pathways are often antiquated and inflexible
  - Cancelling "non-urgent" cases causes administrative problems

- Surgeon/Interventionist issues
  - Reluctance in accepting that early stroke risk is high
  - Ingrained belief that delay to CEA/CAS reduces risk
  - Impact of rapid intervention on learning curve with CAS
  - Tendency to treat symptomatic & asymptomatic patients equally
  - Reluctance to work up patients & ask another surgeon to do CEA
  - Financial implications of asking other surgeons to do CEA

"You may delay, but time will not"

Benjamin Franklin (1706 – 1790)
procedural risk after urgent CEA

<table>
<thead>
<tr>
<th>30-day death/stroke</th>
<th>n=</th>
<th>0-48 hrs</th>
<th>3-7 days</th>
<th>8-14 days</th>
<th>&gt;14 days</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sharpe EJVES 2013</td>
<td>475</td>
<td>2.4%</td>
<td>1.8%</td>
<td>0.8%</td>
<td>0.7%</td>
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<tr>
<td>Rantner EJVES 2015</td>
<td>761</td>
<td>4.4%</td>
<td>1.8%</td>
<td>4.4%</td>
<td>2.5%</td>
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</tbody>
</table>

procedural risk after urgent CEA

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<th>8-14 days</th>
<th>&gt;14 days</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>
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<tr>
<td>UK EJVES 2015</td>
<td>23,235</td>
<td>3.7%</td>
<td>2.5%</td>
<td>2.1%</td>
<td>2.4%</td>
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<tr>
<td>Germany Stroke 2013</td>
<td>56,279</td>
<td>3.0%</td>
<td>2.5%</td>
<td>2.8%</td>
<td>2.3%</td>
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</tbody>
</table>

UK National Vascular Registry

2013 Report on Surgical Outcomes
Consultant-level statistics
Carotid Endarterectomy

<table>
<thead>
<tr>
<th>University Hospitals of Leicester NHS Trust</th>
<th>n=</th>
<th>0-48 hrs</th>
<th>3-7 days</th>
<th>8-14 days</th>
<th>&gt;14 days</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mr Matthew Bown</td>
<td>14</td>
<td>0.0%</td>
<td>1.4%</td>
<td></td>
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</tr>
<tr>
<td>Professor Nick London</td>
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<td>0.2%</td>
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<tr>
<td>Mr Mark McCarthy</td>
<td>60</td>
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<tr>
<td>Mr Jean Medley</td>
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<td>Mr Neil Evans</td>
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<td>1.4%</td>
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<tr>
<td>Professor Ross Naylor</td>
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<tr>
<td>Mr Robert Sayers</td>
<td>14</td>
<td>0.0%</td>
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