CEA Is Safe When Done Early After Thrombolytic Treatment For Acute Stroke

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Background
• Intravenous thrombolysis (IVT) within 3 hours (4.5 h?) of onset of symptoms is becoming increasingly common in hospitals with active stroke-units, world-wide
• Evidence is accumulating that intra-arterial, catheter delivered, thrombectomy is even better than IVT
• Mr Clean, published in the NEJM in January 2015, and other RCTs

Disclosures?
I have no financial disclosure to declare

A different trade-off
• Patients treated with IVT have an increased risk of bleeding complications
• Effects of thrombolysis on the coagulation system 72 h (Fassbender K, Stroke 1999)
• Effects on the blood-brain barrier
• IVT is associated with intracerebral hemorrhage in 2-6%
• Yet, the advantages in terms of both survival and less future disabilities justify IVT
A new situation for vascular surgeons

- The main enemy is embolic stroke when we perform CEA/CAS
- Risk of intra-cranial haemorrhage when CEA/CAS is performed after IVT?
- Risk of surgical site bleeding or neck haematoma?
- Vascular registries offer fast feedback when new technology is to be assessed

Stroke (Stroke. 2014;45:776-780.)

Urgent Carotid Surgery and Stenting May Be Safe After Systemic Thrombolysis for Stroke
Linn Ekberg-Smith, Thomas Trojaborg, Martin Björklund, Björn Krähenbühl and Carl Magnus Wahlgren
on behalf of the Swedish Vascular Registry and the Silva-Stroke Collaboration

- Sweden 2008-2012, 71 CEA + 6 CAS of 3,998 (2%) IVT prior to surgery, after a median of 10 days
- Stroke and death was 2.5% vs 3.8% (p=0.55)
- Bleeding (reop) was 3.8% vs 3.3% (p=0.79)

The combined stroke and death rate was 3.5% for IVT + CEA vs 4.1%
3.4% if IVT + CEA <14 days vs 5.1% ≤7 days
No data on bleeding complications from Denmark or Finland
Median time from qualifying event to CEA was 10 vs 9 days
These operations have not been delayed!
Swedvasc update 2013-2014

<table>
<thead>
<tr>
<th>Year</th>
<th>IVT+CEA</th>
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</thead>
<tbody>
<tr>
<td>2009</td>
<td>0.8% (8/981)</td>
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<tr>
<td>2010</td>
<td>1.0% (9/943)</td>
</tr>
<tr>
<td>2011</td>
<td>2.8% (26/942)</td>
</tr>
<tr>
<td>2012</td>
<td>4.8% (42/867)</td>
</tr>
<tr>
<td>2013</td>
<td>4.0% (33/824)</td>
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<tr>
<td>2014</td>
<td>5.5% (47/847)</td>
</tr>
</tbody>
</table>

Conclusions

- Patients treated with CEA after IVT are treated as quickly as other patients
- Complication rates are similar
- Caution, however, since:
  - Very few patients were treated <72 h of qualifying event
  - Very few patients were stented
  - A study on CEA/CAS after intra-arterial catheter-based thrombectomy is underway

Bleeding complications

- This large study (n=202) unable to report on bleeding complications
- In the Swedvasc study (n=79), there was no difference in bleeding requiring reoperation: 3.8% vs 3.3% (p=0.79), and no ICH
- In a pooled analysis Ross Naylor reported a frequency of ICH of 2.5%*

* Naylor AR  J Cardiovasc Surg 2015; 56:159