Acute Carotid Occlusion
Why Endovascular Intervention is the Therapy of First Choice

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Disclosure

Nothing to disclose
Carotid and cerebral artery occlusions:

- 1.9 million brain cells die every minute
- Fast reperfusion must be achieved
<table>
<thead>
<tr>
<th>Condition</th>
<th>Mortality</th>
</tr>
</thead>
<tbody>
<tr>
<td>ICA T occlusion</td>
<td>73%</td>
</tr>
<tr>
<td>Malignant MCA occlusion</td>
<td>80%</td>
</tr>
<tr>
<td>NIHSS &gt; 17</td>
<td>M&amp;M rate 84%</td>
</tr>
</tbody>
</table>

mRS < 2: 3%

Hacke et al. Lancet 2006
Whom should we treat?

- Clinical signs of stroke
- No cerebral hemorrhage
- No demarcation of infarction
- Carotid occlusion
- Carotid plus cerebral artery occlusions
Treatment Options

- I.V. Thrombolysis
- I.A. Thrombolysis
- CEA
- **Endovascular Thrombectomy**

Why?
Why is endovascular treatment the method of choice?
Treatment Options

- I.V. Thrombolysis
- I.A. Thrombolysis
- CEA
- **Endovascular Thrombectomy**

*Too slow!*

*No distal TE!*
Acute Stroke - ICA Occlusion

2 Types

Carotid T Occlusion

Occlusion of Carotid Stenosis

Thrombectomy

Thrombectomy & CAS
Our Tools

Carotid stents

Stent retriever
Aspiration catheters
Diagnostic Workup

- CT
  - Early signs of stroke
    - Conservative tx
    - SAH
      - Bleeding
        - SAH
          - Coiling ..
    - Normal finding
      - Perfusion study
        - CT angiography
          - Angiography
Technique of Thrombectomy

Carotid T Occlusion

Additional MCA Occlusion
Technique of Thrombectomy

Bifurcational disease: Carotid stenting first, then thrombectomy
Acute Stroke

M. E. f-49

- Acute right sided hemiparesis
- Aphasia
- Time window 3.5 hours
Acute Stroke - Perfusion Study

M. E. f-49
Acute Stroke - CTA

Where is the left carotid?

Left MCA occluded

M. E. f-49
Acute Stroke - TE

ICA occlusion

After thrombectomy

M. E. f-49
Acute Stroke - TE

ICA spasm

ICA spasm resolved
M2 occlusion

M. E. f-49
Acute Stroke - TE

M. E. f-49

Spasm resolved
Acute Stroke - TE

Full recovery after 48 hrs.

M. E. f-49
Acute Stroke

E. B. f-66

- Acute right sided hemiparesis
- Time window 4 hours?
ICA Occlusion

E. B. f-66

After CAS
ICA Occlusion

Additional MCA occlusion

After TE
Stroke symptoms disappeared completely

FU CT/MRI after 24 hrs

E. B. f-66
ICA Occlusion

Stroke symptoms disappeared completely

MRI after 24 hrs: 2 signal intense spots
# Thrombectomy Results

<p>| | | |</p>
<table>
<thead>
<tr>
<th></th>
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</thead>
<tbody>
<tr>
<td>patients*</td>
<td>748</td>
<td>100%</td>
</tr>
<tr>
<td>age</td>
<td>69 y</td>
<td></td>
</tr>
<tr>
<td>time window</td>
<td>3 - 7 hrs</td>
<td></td>
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<tr>
<td>technical success</td>
<td>718</td>
<td>96%</td>
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<tr>
<td>- no infarction</td>
<td>194</td>
<td>26%</td>
</tr>
<tr>
<td>- minor stroke</td>
<td>512</td>
<td>69%</td>
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<tr>
<td>- major stroke</td>
<td>37</td>
<td>5%</td>
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</tbody>
</table>

*Own results 10-2010 - 09-2016
Organization is Essential

Time is brain
No family doctor
No ultrasound ...
Conclusions

• Outcome is determined by door to reperfusion time
• Team approach - not “me”
• Pushing the limits
  ➢ not time window, but imaging
  ➢ woke up stroke
  ➢ unknown time of onset
  ➢ 8 hours? 24 hours?
No Trial Data
Comparing CEA vs CAS+TE

Only single center reports

Stenting in Acute Stroke


- New retrievable stent ready for clinical trial;
  Stents: The future of acute stroke therapy?
Thank you for your interest