Acute Stroke Management
What is State of the Art?

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Disclosure

Speaker name:
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I have the following potential conflicts of interest to report:

☐ Consulting
☐ Employment in industry
☐ Stockholder of a healthcare company
☐ Owner of a healthcare company
☐ Other(s)

☒ I do not have any potential conflict of interest
Just a Reminder ...

Study comparison mechanical recanalization

- REVASCAT
- SWIFT PRIME
- ESCAPE
- EXTEND-IA
- MR CLEAN

% good clinical outcome

Number needed to treat: 3-4

Pooled data from 1287 patients out of 5 randomized trials

Compared EndovascT + MedT with MedT alone

Conclusion: Only after \(7.3\) h no significant benefit from thrombectomy.
A Lesson from 2017/2018 ...

The DAWN Trial

Stroke with occlusion of
- intracranial ICA or
- proximal MCA

Thrombectomy 6 to 24 Hours after Stroke with a Mismatch between Deficit and Infarct


DAWN: Thrombectomy Effective Up to 24 Hours After Stroke

Inclusion criterion:

Mismatch between the severity of the clinical deficit and the infarct volume

*Clinical score as surrogate marker for tissue at risk - independent of time*

≥ 80 J.: NIHSS > 10 and infarct volume less than 21 ml

< 80 J.: NIHSS > 10 and infarct volume less than 31 ml or
NIHSS > 20 and infarct volume less than 51 ml
# DAWN: Thrombectomy Effective Up to 24 Hours After Stroke

<table>
<thead>
<tr>
<th>Endpoint</th>
<th>Thrombectomy Group n = 107</th>
<th>Control Group n = 99</th>
<th>Treatment Benefit (95% Confidence Interval)</th>
<th>Bayesian Probability of Superiority</th>
</tr>
</thead>
<tbody>
<tr>
<td>Disability at 90 mRS (scale of 0 - 2) (%), a  similar to A</td>
<td>48.4 ± 3.0</td>
<td>13.0 ± 2.0</td>
<td>35.5 ± 23.9 (95% CI = 8.9 - 48.9)</td>
<td>&gt;.999, 98</td>
</tr>
</tbody>
</table>

**NNT 2,8**

<table>
<thead>
<tr>
<th>Endpoint</th>
<th>Thrombectomy Group (%)</th>
<th>Control Group (%)</th>
<th>( P ) Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>6 - 12 h</td>
<td>55.1</td>
<td>20.0</td>
<td>&lt;.001</td>
</tr>
<tr>
<td>12 - 24 h</td>
<td>43.1</td>
<td>7.4</td>
<td>&lt;.001</td>
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</table>
The Controversy: *Conscious Sedation vs General Anesthesia*


There was no difference in acute infarct size between groups (median acute infarct volume 10.5 mls with GA and 13.3 mls with CS, p=0.26).

Final infarct volume was higher with conscious sedation. (38 mls with CS and 22 mls with GA, p=0.04).

EVT under GA did not result in worse outcome. The odds ratio for better outcome was 1.91, 95% CI 1.03 to 3.56.

The ANSTROKE Study compared GA and CS in 106 patients undergoing endovascular therapy for acute ischaemic stroke. Key findings: (There was no difference in the numbers of patients who were independent at 3 months.) (42.2% with GA vs. 40% with CS, p=1.0).
Conscious Sedation vs General Anesthesia II

Effect of general anaesthesia on functional outcome in patients with anterior circulation ischaemic stroke having endovascular thrombectomy versus standard care: a meta-analysis of individual patient data


Meta-analysis of 7 trials: 871 pts. endovasc. (30% GA) / 893 pts. standard care

Key findings:
Worse outcomes after endovascular treatment were associated with GA after adjustment for baseline prognostic values.
Endovascular treatment with GA was superior to standard care.

<table>
<thead>
<tr>
<th></th>
<th>Modified Rankin scale</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>0</td>
</tr>
<tr>
<td>No GA (n=561)</td>
<td>12.3</td>
</tr>
<tr>
<td>GA (n=234)</td>
<td>7.3</td>
</tr>
<tr>
<td>Standard care (n=877)</td>
<td>6.5</td>
</tr>
</tbody>
</table>
How to proceed?

• Careful check of indication:
  Vessel occlusion?
  Exclusion of ICH?
  NIHSS, (Age)

• To avoid:
  Treatment of „lost“ tissue: ASPECTS ≤7 ? / Perfusion-Match ?

• Technical procedure:
  Aspiration, DAC, Stentriever,
  Carotid stenting, intracranial stenting (BA)
  ... everything that may re-open ...
Consider the unusual situation

- 57 y, f, acute left CCA occlusion, persistent re-occlusion despite aspiration and stenting „loco typico“ → CCA- „downstenting“
Consider the unusual situation

- 91 y, f, acute unconsciousness/coma due to breakdown of collaterals ICA-BA after left ICA/MCA-occlusion → Stent/Asp/TE
Consider the unusual situation

- 91 y, f, acute unconsciousness/coma due to (unexpected) breakdown of collaterals ICA-BA after left ICA/MCA-occlusion / rI CA stenosis

Stent/Asp/TE
Conclusion

• Endovascular treatment of acute stroke ...
  – is the far most effective intervention.
  – can be done successfully in all cervico-cerebral occlusions, also beyond the „trial-proven“ vessels.
  – needs some careful considerations who will benefit. (…please provide calculation of ASPECTS to your radiologist if she/he does not do it yet…)
  – is basically not limited by a defined time window – but the later the procedure starts, the more carefully weigh up!
To your Radiologist:

ASPECTS – Alberta Stroke Programme Early CT Score

3 subcortical and 7 cortical areas
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