Stroke treatment – New Data

Franziska Dorn
...summer of 2013
Thrombectomy: state of the art (5 RCTs)

Hermes: MR CLEAN, ESCAPE, REVASCAT, SWIFT PRIME, EXTEND IA

- Metaanalysis from 5 RCTs
- 1287 Patients (634 thrombectomy, 653 controls)
- **19% Reduction of disability and death after 90 days**
- OR 2.49, 95% CI 1.76–3.53 (p<0.0001)
- NNT 2.6

Goyal, M et al. Lancet 2016
Thrombectomy: state of the art (5 → 9)
Patients should receive mechanical thrombectomy with a stent retriever if they meet all the following criteria:

1) pre-stroke mRS score of 0 to 1
2) causative occlusion of the ICA or MCA-M1
3) age ≥18 years
4) NIHSS ≥6
5) Alberta Stroke Program Early CT Score (ASPECTS) ≥6
6) treatment can be initiated (groin puncture) within 6 hours of symptom onset

(Class I; LOE A)
Thrombectomy: state of the art (5 → 9) + 2 late
Clinical mismatch: Patient too bad for infarct core according to DWI or perfusion

A Intention-to-Treat Population

<table>
<thead>
<tr>
<th>Score on the Modified Rankin Scale</th>
<th>0</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5 or 6</th>
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<td>17</td>
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<tr>
<td>Control (N=99)</td>
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Percent of Patients

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Percent of Patients

12-24 h!
Clinical inclusion criteria

1. Signs and symptoms consistent with the diagnosis of an acute anterior circulation ischemic stroke
2. Age 18–90 years
3. Baseline NIHSS score ≤26
4. **Endovascular treatment** can be initiated (femoral puncture) between 6 and 16 h of stroke onset. Stroke onset is defined as the time the patient was last known to be at their neurologic baseline (wake-up strokes are eligible if they meet the above time limits)
5. **Modified Rankin Scale** ≤2 prior to qualifying stroke
6. Patient/Legally authorized representative has signed the informed consent form

Neuroimaging inclusion criteria

1. ICA or MCA-M1 occlusion (carotid occlusions can be cervical or intracranial; with or without tandem MCA lesions) by MRA or CTA
2. **Target Mismatch Profile** on CT perfusion or MRI (ischemic core volume is <70 ml, mismatch ratio is ≥1.8 and mismatch volume is ≥15 ml)

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**Score on Modified Rankin Scale**

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<td><strong>Endovascular Therapy</strong> (N=92)</td>
<td>10</td>
<td>16</td>
<td>18</td>
<td>15</td>
<td>18</td>
<td>8</td>
<td>14</td>
</tr>
<tr>
<td><strong>Medical Therapy</strong> (N=90)</td>
<td>8</td>
<td>4</td>
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<td>16</td>
<td>27</td>
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**44%**

**16%**
In selected patients with AIS within 6 to 16 hours of last known normal who have LVO in the anterior circulation and meet other DAWN or DEFUSE 3 eligibility criteria, mechanical thrombectomy is recommended. (Class I; LOE A)

In selected patients with AIS within 6 to 24 hours of last known normal who have LVO in the anterior circulation and meet other DAWN eligibility criteria, mechanical thrombectomy is recommended. (Class IIA; LOE B-R)
## Evidence – patient selection

<table>
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<tr>
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<th>0-6h</th>
<th>Wake up</th>
<th>6-16 (24)</th>
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<tr>
<td>Small infarct core</td>
<td>9 RCTs</td>
<td>DAWN/ DEFUSE-3</td>
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<td>Large infarct core</td>
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Infarct size
HERMES – ASPECTS vs. therapy effect

Favours MTE for all ASPECT scores except for ASPECT 0-2

Next steps - refinement

**Who? Patient selection**
- ASPECTS / infarct core volume threshold
- Role of advanced perfusion, core or collateral imaging
- NIHSS score threshold (lower)
- Distal occlusions
- Posterior circulation

**How? Optimal therapy**
- IV tPA + MT vs. MT alone
- Reperfusion target: TICI 3 vs. TICI 2b
- Direct aspiration vs. stent retriever
- Conscious sedation vs. general anaesthesia
- MT + cervical stenting vs. MT alone
- Additional medication (e.g. NA1?)
- Cooling?
Thank you

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