Unanswered Qs in STEMI management – Q3

“Lyse now, stent later”?

• Rescue or facilitated?

• Has routine angiography a role to play?

• Conclusions

By Dr Jason Kendall

Presented at CEM November 2006
## Terminology

<table>
<thead>
<tr>
<th>“Rescue”</th>
<th>REACT</th>
<th>YES</th>
</tr>
</thead>
<tbody>
<tr>
<td>“Facilitated”</td>
<td>ASSENT-4</td>
<td>NO</td>
</tr>
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</table>

Routine angiography early post thrombolysis
Terminology

“Rescue” REACT YES

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Routine angiography early post thrombolysis
Problems after “successful lysis”

1. TIMI-3 flow in only 60%
2. Early re-occlusion & infarction 30%
3. Late re-occlusion & infarction
4. Progression of disease – further infarction
5. No definition of anatomy
ESC GUIDELINES
To improve the quality of clinical practice and patient care in Europe

European Heart Journal (2005) 26, 804–847
doi:10.1093/eurheartj/ehi138

ESC Guidelines

Guidelines for Percutaneous Coronary Interventions
The Task Force for Percutaneous Coronary Interventions of the European Society of Cardiology

ESC PCI Guidelines: / Sigmund Silber et al.
<table>
<thead>
<tr>
<th>Number of patients</th>
<th>SIAM-III</th>
<th>GRACIA-1</th>
<th>CAPITAL-AMI</th>
<th>LPLS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Inclusion criteria</td>
<td>197</td>
<td>500</td>
<td>170</td>
<td>164</td>
</tr>
<tr>
<td>Thrombolysis performed</td>
<td>STEMI presenting within &lt;12 h</td>
<td>STEMI presenting within &lt;12 h</td>
<td>STEMI presenting within &lt;6 h</td>
<td>STEMI presenting within &lt;4 h</td>
</tr>
<tr>
<td>Thrombolytic drug</td>
<td>In-hospital</td>
<td>Full-dose reteplase</td>
<td>In-hospital</td>
<td>Pre-hospital</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Accelerated dose of alteplase</td>
<td>Half-dose reteplase with abciximab</td>
</tr>
<tr>
<td>Time between thrombolysis and routine coronary angiography in the PCI group</td>
<td>&lt;6 h</td>
<td>&lt;24 h</td>
<td>Immediate transfer</td>
<td>Immediate transfer</td>
</tr>
<tr>
<td>Primary endpoint</td>
<td>Combination of death, re-infarction, ischaemic events, TLR</td>
<td>Combination of death, re-infarction, TLR</td>
<td>Combination of death, re-infarction, recurrent ischaemia, stroke</td>
<td>Infarct size, determined by MRI</td>
</tr>
<tr>
<td>At time</td>
<td>6 months</td>
<td>12 months</td>
<td>30 days</td>
<td>6 months</td>
</tr>
<tr>
<td>Result of primary endpoint (thrombolysis alone/thrombolysis + routine coronary angiography ± PCI)</td>
<td>50.6/25.6% (^a)</td>
<td>21/9% (^a)</td>
<td>21.4/9.3% (^a)</td>
<td>11.6/6.7% (^a)</td>
</tr>
<tr>
<td>Primary endpoint reached</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
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</tr>
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</table>

All four trials reached their primary endpoint. 
\(^aP < 0.05.\)

TLR = target lesion revascularization.
Figure 1: Trial profile
STEMI=ST-segment elevated myocardial infarction; rt-PA=recombinant tissue plasminogen activator; CABG=coronary artery bypass grafting.
GRACIA-1: Primary endpoint

Figure 2: Kaplan-Meier cumulative event curves for primary endpoint (death, non-fatal reinfarction, or ischaemia-driven revascularisation)
Hazard ratio = 0.44 (95% CI 0.27 - 0.72, p=0.004). Logrank test, p=0.0008.
170 patients presenting with ST elevation acute MI with chest pain ≥30 minutes and within six hours of symptom onset

Randomized, open-label, multicenter

Thrombolytic Therapy
Full-dose Tenectaplaste (TNK)

n=84

Thrombolytic Therapy, Transfer, and PCI
Full-dose Tenectaplaste (TNK) followed by transfer and subsequent percutaneous coronary intervention (PCI)

n=86

Endpoints (30 days and 6 months):
Composite of death, reinfarction, recurrent unstable ischemia, or stroke

CAPITAL AMI: outcomes

- Death: 3.6% (TNK), 2.3% (TNK and PCI)
- Re-MI: 11.9% (TNK), 4.7% (TNK and PCI)
- Stroke: 1.2% (TNK), 1.2% (TNK and PCI)
- Recurrent unstable ischemia: 17.9% (TNK), 7.0% (TNK and PCI)
- Combined: 21.4% (TNK), 9.3% (TNK and PCI)

P-values: NS, P = 0.04
“After successful thrombolysis, the routine use of coronary angiography within 24 hours (and PCI if applicable) is recommended even in asymptomatic patients…”

“Recent trials have contributed to the solution of an old but still pivotal problem: the incidence of re-infarction, the “Achilles heel” of thrombolysis”

“Thus, thrombolysis, even if “successful” should not be considered as the final treatment: “lyse now, stent later”

Eur Heart J 2005;26:804-47
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Eur Heart J 2005;26:804-47
ESC guidance (2005):

STEMI within 12 hours after onset of symptoms

- Patient presenting in a hospital with PCI
  - Immediate transfer
  - 
    - ≥ 3 - 12 hours
      - Primary PCI
    - < 3 hours
      - Thrombolysis
        - Failed
          - PCI ≤ 24 hours available
            - Predischarge ischaemia
          - PCI ≤ 24 hours not available
            - Rescue PCI
            - Post thrombolysis PCI
            - Ischaemia-guided PCI
        - Successful
          - PCI ≤ 24 hours available
            - Predischarge ischaemia
          - PCI ≤ 24 hours not available
            - Rescue PCI
            - Post thrombolysis PCI
            - Ischaemia-guided PCI

Eur Heart J 2005;26:804-47
Arguments over whether to use mechanical or pharmacological reperfusion are now being subsumed into the development of strategies where both are integrated to provide the greatest benefit to patients. It is evident that one strategy will not be universal and that there may be different solutions that are applicable and optimal under different geographical and organisational situations.”

Heart Nov 2005;91:1523
CP001
Unanswered questions in STEMI management
END

Jason Kendall

Presented at CEM November 2006