Transport to a PCI centre improved long-term outcome more than thrombolytic therapy at the community hospital in acute MI


Clinical impact ratings: Emergency Med ★★★★★☆ Hospitalists ★★★★★☆ Cardiology ★★★★★★★

Question
In patients with acute myocardial infarction (MI) presenting to community hospitals without facilities for percutaneous coronary intervention (PCI), does transport to a PCI center improve long-term outcome more than thrombolytic (TL) therapy at the community hospital?

Methods
Design: Randomized controlled trial (PRAGUE-2).
Allocation: [Concealed]†.*
Blinding: Unblinded.*
Follow-up period: Median 55 months.
Setting: {Emergency departments of 41 community hospitals and 7 PCI centers in the Czech Republic}†.*

Patients: 850 patients 28 to 89 years of age (median age 65; 70% men) who presented with acute ST-elevation MI (STEMI) within 12 h from onset of symptoms to a community hospital that was <120 km from a PCI center and for whom it was feasible to begin transport within 30 minutes. Patients with a contraindication to TL therapy or absence of bilateral femoral artery pulsations were excluded.

Intervention: Interhospital transport to the nearest PCI center for primary PCI (n = 429) or intravenous TL therapy in the community hospital (n = 421).

Outcomes: Composite endpoint (all-cause mortality, recurrent MI, or stroke), secondary composite endpoint (all-cause mortality, recurrent MI, stroke, or revascularization procedure), and their individual components.

Patient follow-up: 99% (intention-to-treat analysis).

Main results
At 5 years, risks for the primary and secondary composite endpoints were lower in the PCI group than in the TL group (Table). Transport for PCI reduced risk for recurrent MI and need for additional PCI procedures (Table). Groups did not differ for all-cause mortality, stroke, or need for coronary artery bypass graft surgery (Table).

Transport to a percutaneous coronary intervention (PCI) center vs thrombolytic therapy (TL) at the community hospital for acute myocardial infarction (MI) at 5 years‡

<table>
<thead>
<tr>
<th>Outcomes</th>
<th>Transport to PCI center</th>
<th>TL in community hospital</th>
<th>RRR (95% CI)</th>
<th>NNT (CI)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Death, MI, or stroke</td>
<td>40%</td>
<td>53%</td>
<td>35% (21 to 48)</td>
<td>6 (4 to 10)</td>
</tr>
<tr>
<td>Death, MI, stroke, or revascularization</td>
<td>47%</td>
<td>54%</td>
<td>19% (1 to 32)</td>
<td>10 (6 to 139)</td>
</tr>
<tr>
<td>Death</td>
<td>19%</td>
<td>23%</td>
<td>23% (1 to 42)</td>
<td>Not significant</td>
</tr>
<tr>
<td>Recurrent MI</td>
<td>12%</td>
<td>19%</td>
<td>39% (12 to 58)</td>
<td>14 (9 to 45)</td>
</tr>
<tr>
<td>Stroke</td>
<td>8%</td>
<td>8%</td>
<td>38% (18 to 54)</td>
<td>Not significant</td>
</tr>
<tr>
<td>(Repeated) PCI</td>
<td>22%</td>
<td>38%</td>
<td>47% (29 to 62)</td>
<td>6 (5 to 10)</td>
</tr>
<tr>
<td>Coronary artery bypass graft surgery</td>
<td>12%</td>
<td>13%</td>
<td>11% (3 to 40)</td>
<td>Not significant</td>
</tr>
</tbody>
</table>

†Abbreviations defined in Glossary. RRR, NNT, and CI calculated from adjusted hazard ratios in article.

Conclusion
In patients with acute myocardial infarction (MI) presenting to community hospitals without facilities for percutaneous coronary intervention (PCI), transport to a PCI center reduced long-term risk for recurrent MI and need for additional PCI procedures more than thrombolytic therapy at the community hospital.

Source of funding: No external funding.

For correspondence: Dr. P. Widimsky, Charles University, Prague, Czech Republic. E-mail widim@fnkv.cz.

References

Date of electronic publication: 2007-08-17

©ACP

September/October 2007 | Volume 147 • Number 2

ACP Journal Club