10-1-2013

The impact of a new ECMO program on clinical outcomes of patients with acute myocardial infarction complicated by cardiogenic shock.

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Objective
To investigate if a new ECMO program will improve the outcome of patients who had acute myocardial infarction complicated with cardiogenic shock.

Baseline characteristics

<table>
<thead>
<tr>
<th>Group 1 (New)</th>
<th>Group 2 (Old)</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age (years)</td>
<td>64 ± 14</td>
<td>63 ± 18</td>
</tr>
<tr>
<td>Sex (male)</td>
<td>12</td>
<td>9</td>
</tr>
<tr>
<td>BMI</td>
<td>28 ± 6.2</td>
<td>29 ± 7.0</td>
</tr>
<tr>
<td>DM</td>
<td>8</td>
<td>5</td>
</tr>
<tr>
<td>Family history</td>
<td>6</td>
<td>3</td>
</tr>
<tr>
<td>HLD</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>Smoking</td>
<td>11</td>
<td>9</td>
</tr>
<tr>
<td>Hypertension</td>
<td>7</td>
<td>7</td>
</tr>
<tr>
<td>Previous MI</td>
<td>5</td>
<td>2</td>
</tr>
<tr>
<td>EF (%)</td>
<td>30 ± 18</td>
<td>30 ± 19</td>
</tr>
<tr>
<td>Renal failure (Cre &gt;1.5)</td>
<td>6</td>
<td>2</td>
</tr>
<tr>
<td>Left main</td>
<td>2</td>
<td>3</td>
</tr>
</tbody>
</table>

Methods
Retrospective chart review
Study period: March 2003 - July 2013

Patient population: Pts who underwent emergent catheterization for AMI due to left main or proximal LAD occlusion complicated with cardiogenic shock

Cardiogenic shock: defined as SBP remaining lower than 80mmHg despite multiple inotropic agent support +/- IABP

Old program (Group 1: before July 2010)
New program (Group 2: after July 2010)

Group 1 (Old program): N = 14
Group 2 (New program): N = 15

Revascularization
- PCI: Group 1 Old = 11 (73%), Group 2 New = 9 (64%)
- CABG: Group 1 Old = 4 (13%), Group 2 New = 3 (21%)
- No revascularization: Group 1 Old = 2 (14%), Group 2 New = 0 (0%)

Bridge with ECMO
- Group 1 Old = 1 (6.7%), Group 2 New = 6 (42%)
- Bridge to VAD: Group 1 Old = 2 (13%), Group 2 New = 2 (14%)

Outcome

<table>
<thead>
<tr>
<th>AMI (Left main/LAD proximal) complicated with cardiogenic shock n = 29</th>
</tr>
</thead>
<tbody>
<tr>
<td>before July 2010 (group 1) n = 15</td>
</tr>
<tr>
<td>Survival 6 (0 ECMO) Death 9 (1 ECMO)</td>
</tr>
<tr>
<td>Overall Survival rate = 40%</td>
</tr>
<tr>
<td>after July 2010 (group 2) n = 14</td>
</tr>
<tr>
<td>Survival 11 (5 ECMO) Death 3 (1 ECMO)</td>
</tr>
<tr>
<td>Overall Survival rate = 78.6%</td>
</tr>
</tbody>
</table>

P = 0.03

Conclusion
Initiation of an ECMO program improved the outcomes in patients with acute myocardial infarction complicated by cardiogenic shock.

Complications
- Sepsis: 1
- GI bleed: 2
- Acute Renal failure: 0
- Vascular injury: 1
- Compartment syndrome: 0
- Neurological Injury: 0

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