Stent Thrombosis is Not Increased in Cardiac Arrest Patients Undergoing Therapeutic Hypothermia: An Analysis of 15,079 Procedures

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Stent Thrombosis is Not Increased in Cardiac Arrest Patients Undergoing Therapeutic Hypothermia: An Analysis of 15,079 Procedures

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Background
- After a resuscitated cardiac arrest, patients often undergo cardiac catheterization with possible percutaneous coronary intervention (PCI).
- There is paucity of data regarding stent thrombosis rates in resuscitated cardiac arrest (CA) patients following PCI.
- Cardiac arrest patients, especially those with ventricular tachycardia or fibrillation (VT/VF arrest), often undergo therapeutic hypothermia (TH) to improve neurologic outcomes.
- TH alters pharmacokinetics of antiplatelet medications and may lead to higher rates of acute stent thrombosis.
- There is conflicting data in literature regarding effect of therapeutic hypothermia on stent thrombosis.

Methods
- **Inclusion criteria:** Patients >18 years with resuscitated CA undergoing PCI with or without institution of therapeutic hypothermia.
- **Exclusion criteria:** Stent thrombosis (996.72) as the primary diagnosis.
- Primary outcome: Stent thrombosis after PCI.
- Comorbidities were defined using Deyo’s modification of Charlson’s co-morbidity index (CCI) (Range 0-33).
- Multivariate hierarchical logistic regression models, with hospital ID incorporated as random effects within the model, were created to determine predictors of stent thrombosis.
- Model was adjusted for therapeutic hypothermia, age, sex, Deyo Charlson comorbidity index, weekend admission, insurance status, teaching hospital status, hospital bed size and hospital region.

Results
- **Total of 15,079 subjects from 2002-2011.
- 260 (1.7%) underwent therapeutic hypothermia.
- Overall, 687 (4.6%) stent thrombosis events
- 11 (4.2%) ST in the TH group
- 676 (4.6%) ST in the no TH group
- TH was not an independent predictor of stent thrombosis (OR 0.84, p=0.59).

Table 1. Predictors of Stent Thrombosis after PCI in Patients Presenting With Cardiac Arrest

<table>
<thead>
<tr>
<th>Predictor</th>
<th>OR</th>
<th>95% CCI</th>
<th>p value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Therapeutic Hypothermia</td>
<td>0.84</td>
<td>0.44-1.60</td>
<td>0.59</td>
</tr>
<tr>
<td>Age</td>
<td>1.00</td>
<td>1.00-1.01</td>
<td>0.48</td>
</tr>
<tr>
<td>Female gender</td>
<td>0.93</td>
<td>0.78-1.10</td>
<td>0.38</td>
</tr>
<tr>
<td>Deyo-Charlson Score*</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>1.33</td>
<td>1.10-1.61</td>
<td>0.003</td>
</tr>
<tr>
<td>3 or more</td>
<td>1.40</td>
<td>1.14-1.70</td>
<td>0.001</td>
</tr>
<tr>
<td>Primary Payer€</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Private insurance</td>
<td>0.78</td>
<td>0.63-0.95</td>
<td>0.016</td>
</tr>
<tr>
<td>Self-pay/Other</td>
<td>0.79</td>
<td>0.58-1.06</td>
<td>0.121</td>
</tr>
</tbody>
</table>

(*Deyo-Charlson Score 0-1 considered as referent, €Medicare/Medicaid considered as referent)

Conclusions
- Primary PCI in acute MI patients presenting with cardiac arrest is associated with high rates of stent thrombosis (4.6%).
- The incidence of stent thrombosis is not increased with therapeutic hypothermia.

REFERENCES:

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