DIFFERENT ST-SEGMENT RECOVERY MEASURES ON ECGS BEFORE AND AFTER PRIMARY PCI PREDICT IN-HOSPITAL ADVERSE OUTCOMES IN AN STEMI POPULATION

Poster Contributions
Poster Sessions, Expo North
Sunday, March 10, 2013, 9:45 a.m.-10:30 a.m.

Session Title: Percutaneous Coronary Intervention for AMI: Predictors of Outcome
Abstract Category: 1. Acute Coronary Syndromes: Clinical
Presentation Number: 1216-206

Authors: Annie Y. Chou, Graham Wong, Min Gao, Benny C. Lau, Krishnan Ramanathan, University of British Columbia, Vancouver, Canada, Vancouver Coastal Health, Vancouver, Canada

Background: Patients with ST-Elevation myocardial infarction (STEMI) remain at risk of further in-hospital cardiac events despite a successful primary percutaneous coronary intervention (PPCI). Current predictors for adverse events are complex or inaccessible. We used the widely available electrocardiogram (ECG) to study the association of ST segment recovery pre and post PPCI with cardiac events in a contemporary STEMI population.

Methods: This retrospective study included consecutive STEMI patients undergoing PPCI in Vancouver between May 2007 and September 2010 with evaluable ECGs pre and post PPCI. Patients with bundle branch block were excluded. Electronic calipers were used to quantify the degree of ST-elevation or depression in each lead by investigators blinded to clinical outcomes. Univariate analysis was performed between ST-segment recovery measures and the composite of in-hospital mortality, congestive heart failure, cardiogenic shock, and recurrent myocardial infarction.

Results: Our cohort consisted of 419 patients, of whom 45% had an anterior STEMI. Both ST elevation and depression were present in 91% of the initial ECG. Table 1 shows the major results.

Conclusions: The majority of STEMI patients had ST-depression in addition to ST-elevation at STEMI diagnosis. Recovery of both ST-elevation and depression after PPCI correlated strongly with subsequent in-hospital cardiac events and may provide additional prognostic information compared with ST-elevation recovery.

Table 1. Primary outcome rates by ST segment recovery measures.

<table>
<thead>
<tr>
<th>Measure</th>
<th>&lt;50%</th>
<th>≥50%</th>
<th>p value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Summed ST-elevation and depression Recovery (%)</td>
<td>35</td>
<td>18</td>
<td>0.002</td>
</tr>
<tr>
<td>Summed ST-elevation Recovery (%)</td>
<td>32</td>
<td>18</td>
<td>0.012</td>
</tr>
<tr>
<td>Worst-lead ST-elevation Recovery (%)</td>
<td>30</td>
<td>19</td>
<td>0.052</td>
</tr>
</tbody>
</table>