Abstract: P721

Acute left circumflex occlusion: infarct size, electrocardiographic abnormalities, reperfusion delay, average hospital stay and cardiovascular mortality.

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Topic(s):
Coronary Artery Disease - Other

Citation:

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Background

Left circumflex (LCx) occlusion is underdiagnosed in most of reperfusion studies about myocardial infarction, due to its poor electrocardiographic expressiveness and late diagnosis, which leads to longer higher infarct size and reperfusion time.

Purpose

To compare peak of cardiac biomarkers, electrocardiographic abnormalities, reperfusion delay, hospital stay and survival in acute and subacute myocardial infarction, due to left anterior descending (LAD), left circumflex (LCx) or right coronary artery (RCA) occlusion.

Methods

Observational retrospective study including 1634 coronary angiographies in a single university hospital between 2016 and 2018. We analyzed clinical presentation, delay from emergency unit to invasive cardiology department, peak of markers, electrocardiographic parameters, average hospital stay and long-term mortality.

Results

873 patients with myocardial infarction were analyzed, of which LCx was occluded in 10%. 38, 52, and 10% of cases with LCx occlusion presented as Non-ST Segment Elevation Myocardial Infarction (NSTEMI), ST Segment Elevation Myocardial Infarction (STEMI) and subacute myocardial infarction respectively. Levels of troponin were higher in LDA than in LCx and RCA occlusion (p=0.002).

The most frequent ECG findings in patients with LCx occlusion were "ST depression in V1-V4 leads and ST elevation in inferior and lateral leads” (5%). Isolated ST depression in I, AVL, V4-V6 was the most frequent finding detected in NSTEMI due to LCx occlusion (sensitivity 13%; specificity 91%; positive predictive value 67%, negative predictive value 45%). Specificity and positive predictive value increases up to almost 100% when a transthoracic echocardiography shows left ventricular inferior, septal and/or posterior wall hypokinesia.

No differences on time from symptoms onset to emergency department were detected (p=0.201), but mean time from emergency unit to invasive cardiology department arrival was 292, 1608 and 350 minutes in LDA, LCx and RCA occlusion (p<0,001). Furthermore average hospital stay was 8, 9 and 7 days respectively
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Conclusions
Isolated ST depression in lateral leads seems to be a low sensitive but highly specific electrocardiographic parameter in NSTEMI due to LCx occlusion. Our study showed higher reperfusion delay in patients with acute LCx occlusion, which didn’t lead to higher infarct size, longer average hospital stay, nor long time all-cause mortality.

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Figure 1. Reperfusion delay and average hospital stay

<table>
<thead>
<tr>
<th>Time from emergency unit to invasive cardiology department</th>
<th>Average hospital stay (days)</th>
</tr>
</thead>
<tbody>
<tr>
<td>RCA: 350 +/- 855 min</td>
<td>RCA: 7 +/- 4</td>
</tr>
<tr>
<td>Cx: 1608.2 +/- 2452 min</td>
<td>Cx: 9 +/- 16</td>
</tr>
<tr>
<td>LAD: 292 +/- 610min</td>
<td>LAD: 8 +/- 7</td>
</tr>
</tbody>
</table>

Figure shows the reperfusion delay and average hospital stay for different occlusions.