ISCHAEMIC HEART DISEASE

150 Determinants of reverse left ventricular remodelling after acute myocardial infarction

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After acute myocardial infarction a very early left ventricular (LV) enlargement frequently occurs. In some patients a progressive LV dilation may be observed whereas in others, LV volumes reduction has been detected (reverse LV remodelling, r-LVR). Main determinants of r-LVR are still under discussion. We hypothesized that the extent of microvascular damage may play a major role.

Methods: A total of 54 patients with first STEMI successfully reperfused were studied. After reperfusion, peak CK, ST-segment reduction and TIMI grade were calculated. The extent of microvascular damage was assessed by intravenous myocardial contrast echocardiography (MCE) using continuous infusion of Sonovue. The endocardial length of contrast defect (CDL%) was evaluated on day 1 after reperfusion (T1). The extent of wall motion abnormalities (WMA%), LV end-diastolic volumes indexed by body area surface (EDV/BSA), and ejection fraction (EF%) at T1 and at 3-months follow-up (T2) were also calculated. R-LVR was defined as >10% reduction of EDV at follow-up.

Results: At follow-up, 54% of patients had r-LVR. At T1, EDV/BSA was similar in patients with r-LVR than in the others. CDL% and WMA% were significantly lower and EF% was significantly higher in patients with r-LVR than the others. At T2, the EDV/BSA decreased in patients with r-LVR and increased in the others. WMA% and EF% improved in patients with reverse LV response, while they didn’t change in the others. By ROC curves analysis, sensitivity and specificity of different parameters to predict reverse LV response were calculated and the results are listed in the table.

Conclusion: R-LVR frequently occurs in patients successfully reperfused after AMI. A contrast defect extent <7% soon after reperfusion is the best predictor of r-LVR at follow-up. Patients with R-LVR have the higher improvement in systolic LV function as compared to the others.

Table 1. ROC curves analysis

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Sensitivity</th>
<th>Specificity</th>
<th>Cut-off value</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>CDL% (mi/mq)</td>
<td>75</td>
<td>81</td>
<td>&lt;6.7</td>
<td>0.0001</td>
</tr>
<tr>
<td>WMA%</td>
<td>84</td>
<td>61</td>
<td>&lt;42</td>
<td>0.002</td>
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<tr>
<td>TIMI grade</td>
<td>93</td>
<td>21</td>
<td>&gt;2</td>
<td>0.37</td>
</tr>
<tr>
<td>ST reduction</td>
<td>34</td>
<td>100</td>
<td>&gt;84</td>
<td>0.19</td>
</tr>
<tr>
<td>EF%</td>
<td>48</td>
<td>86</td>
<td>&gt;49</td>
<td>0.011</td>
</tr>
</tbody>
</table>

151 Predischarge echo-Doppler predictors of late cardiac remodeling in the placebo arm of the PREAMI Echo Study

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Context: Remodelling after myocardial infarction (MI) is an established predictor of cardiovascular events, notably heart failure and death. Noninvasive 2-D echocardiography is the technique of choice for quantitatively evaluating and monitoring post-MI remodelling, but its predictive value in the setting of preserved or only moderately impaired left ventricular (LV) function is underdocumented, especially in the elderly.

Objective: To determine the predischarge echo-Doppler parameters that predict remodeling in post-MI elderly. Design Randomized, double-blind, placebo-controlled trial (Perindopril and Remodeling in Elderly with Acute Myocardial Infarction: PREAMI). Setting 109 centers, 5 European countries. Patients 1252 (35% female) receiving optimal therapy after acute MI, randomized to perindopril 8 mg/day (n=631) or placebo (n=621), mean age 73±6 years, LV ejection fraction 59.1%±7.7%, n=896 with complete 6- and 12-month clinical and echo-Doppler data. Main Outcome Measures Standard echo-Doppler parameters of chamber volume, filling, and shape.

Results: Age codetermines remodeling, together with infarct size. Remodelling in the placebo group was associated with smaller predischarge end-diastolic volume (EDV: 73.3±20.2 mL vs 84.9±24.7 mL, p<0.001), end-systolic volume (ESV: 30.1±11.9 mL vs 35.6±16.3 mL, p<0.001) and greater wall motion abnormality (13.0%±12.4% vs 11.3%±12.4%, p<0.001). Only predischarge EDV and ESV retained predictive significance for late remodeling, albeit in a nonhomogeneous manner. Classification regression-tree analysis showed predischarge EDV (with different cuts between treatment arms) and dyssynergy (for EDV >57.5 mL) to be important discriminators of remodeling, besides treatment.

Conclusions: Post-MI remodeling threatens all elderly despite small infarct size, good LV function, and optimal therapy. Complete predischarge echo-Doppler workup should be mandatory, with individualized aggressive management including angiotensin-converting enzyme (ACE) inhibition, as well as in perindopril in the present study, in the elderly with hypertension, low chamber volumes, extensive asynergy, and/or pseudo-normal/restrictive diastolic filling patterns.

152 Relationship between reperfusion parameters and left ventricular remodelling after anterior myocardial infarction

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Background: Despite fast and complete recanalization of infarct related artery (IRA) in patients (pts) with acute myocardial infarction, an adequate microvascular perfusion at the tissue level may not occur. These patients have high risk of left ventricular (LV) remodelling, and worse long term prognosis. Many postprocedural parameters are used for the assessment of complete tissue reperfusion such as: electrocardiographic - ST regression, angiographic -corrected TIMI frame count (cTFC), myocardial blush grade (MBG) and recently myocardial contrast echocardiography (MCE).

Objective: The purpose of this study was to compare well known angiographic parameters of microvascular reperfusion with myocardial contrast echocardiography in predicting of left ventricular remodeling defined as an increase >20% of initial LVEDV volume after 6-months.

Methods and results: Group of consecutive 30 pts presenting with first anterior myocardial infarction undergoing primary coronary intervention (PCI) with one vessel (LAD) disease. In all patients we achieved TIMI 3 flow in IRA and final cTFC. MBG was assessed. All pts underwent MCE 48 hours after PTA and regional perfusion score index (RPsi) was measured in all dysfunctional segments (score perfusion: normal-2, patchy-1, lack of perfusion-0)