Cardiac rehabilitation after acute myocardial infarction –
Effect on mortality, morbidity, medication and lifestyle changes

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PURPOSE
Cardiac rehabilitation (CR) is recommended for secondary prevention in patients with acute myocardial infarction (AMI). In Germany, CR is usually offered on a short-term basis with intensive rehabilitative activity on 6 days a week for 3 to 4 weeks starting no later than 14 days after the index event (1). There is only limited data from a retrospective (2) and a small prospective (3) trial validating this short-term CR. Hence, this study evaluated prospectively the effects of short-term CR on morbidity and mortality in a large cohort of patients with AMI in Germany.

PATIENTS and METHODS
Within the randomized, placebo-controlled, double blind, multicenter OMEGA trial (4), participation to CR was recorded in all patients being alive 3 months after AMI. Total mortality and major cardiac and cardiovascular events (MACCE) were prospectively assessed during follow-up between month 4 and month 12.
- 104 cardiac centers in Germany with 24-h-PCI facilities
- 3,851 patients with STEMI and NSTEMI
- inclusion between October 2003 and June 2010

RESULTS
Out of 3,560 patients, 2,513 (70.6 %) participated in CR. Patients in CR were significantly younger (62 vs. 69 years), had more STEMI (66 vs. 44 %), PCI (83 vs. 69 %), resuscitation (2.1 vs. 0.6 %), and more male patients (78 vs. 71 %) choose CR. Impaired left ventricular function (LVEF) was not different between groups. During follow-up, 83 patients died and 257 patients had MACCE.

Participation in CR
Independent parameters NOT to attend cardiac rehab:
- age > 70 years
- NSTEMI
- AMI in history
- stroke in history
- PCI, CABG in history
- Diabetes mellitus

Independent parameter to attend cardiac rehab:
- acute PCI

Clinical endpoints

<table>
<thead>
<tr>
<th>Event</th>
<th>CR+</th>
<th>CR-</th>
<th>p-value</th>
<th>OR ± 95% CI</th>
</tr>
</thead>
<tbody>
<tr>
<td>total mortality</td>
<td>1.4%</td>
<td>4.6%</td>
<td>&lt; 0.0001</td>
<td>0.29 (0.19-0.46)</td>
</tr>
<tr>
<td>non fatal AMI</td>
<td>3.3%</td>
<td>4.9%</td>
<td>&lt; 0.05</td>
<td>0.66 (0.46-0.96)</td>
</tr>
<tr>
<td>stroke in history</td>
<td>1.4%</td>
<td>1.9%</td>
<td>&lt; 0.05</td>
<td>0.70 (0.56-0.87)</td>
</tr>
<tr>
<td>congestive heart failure</td>
<td>23.3%</td>
<td>27.0%</td>
<td>&lt; 0.05</td>
<td>0.52 (0.39-0.69)</td>
</tr>
<tr>
<td>resuscitation</td>
<td>0.4%</td>
<td>0.5%</td>
<td>0.67</td>
<td>0.79 (0.27-2.32)</td>
</tr>
</tbody>
</table>

Tab. 1: Clinical endpoints during follow-up between month 4 and 12 after the index event in patients with (CR+) and without (CR-) cardiac rehabilitation. Absolute (n) and relative (%) data are displayed. Multivariate statistics, odds ratio (OR) and 95% confidence interval (CI).

CONCLUSIONS
In patients with AMI, short-term cardiac rehabilitation reduces total mortality and cardiovascular events (MACCE) through improvements in lifestyle and adherence to medication within one year after the index event. A major problem, at least in Germany, is the fact, that patient subgroups that significantly benefit from CR according to the data of this study are not referred to CR in actual clinical practice.

References:
4. Rauch B et al. OMEGA, a randomized, placebo-controlled trial to test the effect of highly purified omega-3 fatty acids on top of modern guideline-adjusted therapy after myocardial infarction. Circulation 2011; 122: 2155-2159

Disclosure: There are no conflicts of interest regarding this poster.