Depression, isolation, social support and cardiovascular rehabilitation in older adults

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EuroPRevent 2010
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some data to the
actual situation
Depression increases mortality after myocardial infarction

Total mortality
Major depression (5; 1779)
Depressive symptoms (5; 1470)
Short follow-up (6; 1478)
Long follow-up (6; 2501)

Cardiac mortality
Major depression (1; 222)
Depressive symptoms (6; 2665)
Short follow-up (3; 1060)
Long follow-up (5; 2116)

Risk lower ↔ ↔ ↔ Risk higher

### About what we all know: disease and symptoms „trigger” depression

<table>
<thead>
<tr>
<th>Condition</th>
<th>BDI ≥ 14 (%)</th>
<th>BDI &lt; 14 (%)</th>
<th>OR (95% - CI)</th>
</tr>
</thead>
<tbody>
<tr>
<td>AMI in history</td>
<td>16.3</td>
<td>11.8</td>
<td>1.46 (1.04-2.05)</td>
</tr>
<tr>
<td>Hypercholesterinemia</td>
<td>59.3</td>
<td>48.2</td>
<td>1.57 (1.22-2.01)</td>
</tr>
<tr>
<td>Diabetes</td>
<td>34.0</td>
<td>25.1</td>
<td>1.54 (1.18-1.99)</td>
</tr>
<tr>
<td>Smokers</td>
<td>42.3</td>
<td>34.7</td>
<td>1.38 (1.08-1.77)</td>
</tr>
<tr>
<td>Angina pectoris 12 months follow-up</td>
<td>18.3</td>
<td>9.7</td>
<td>2.08 (1.50-2.90)</td>
</tr>
<tr>
<td>No dyspnoea 12 months follow-up</td>
<td>62.7</td>
<td>78.4</td>
<td>0.46 (0.36-0.60)</td>
</tr>
<tr>
<td>Dyspnoea NYHA II 12 months follow-up</td>
<td>30.7</td>
<td>18.8</td>
<td>1.91 (1.46-2.51)</td>
</tr>
<tr>
<td>Dyspnoea NYHA III 12 months follow-up</td>
<td>6.3</td>
<td>2.8</td>
<td>1.91 (1.46-2.51)</td>
</tr>
<tr>
<td>Heart failure during 12 months follow-up</td>
<td>35.8</td>
<td>19.0</td>
<td>2.39 (1.83-3.12)</td>
</tr>
</tbody>
</table>

Rauch B, Zimmer R, Schneider S, Senges J for the OMEGA Study Group 2010, unpublished results
But living alone also is associated with a higher prevalence of depressive symptoms in older people - in contrast: high social activity may protect
The effect of social contact on the development of depression in older people depends on gender and age.

Lack of social network and social support increases all-cause mortality in elderly men.

Analysis of 485 men, born in 1914 in Malmö, Sweden; cross-sectional sample in 1969 and in 1982,
some aspects to the therapeutic options
Higher social activity may improve depression in older people

→ Monpellier district France

→ Community residents ≥ 65 years randomly selected between March 1999 – Febr 2001

→ n = 1,849
  Male = 780 (depressive 21.7%)
  Female = 1,069 (depressive 37.0%)

Isaac V et al., Am J Geriatr Psychiatry 2009
Effects of treating depression and low perceived social support on clinical events after myocardial infarction (ENRICHD)

Effect of intervention

- Interventions randomized to usual care:
  - Cognitive behaviour therapy at least 6 months as soon as possible after MI
  - Social support interventions
  - + sertraline, if indicated in patients with high depression scores

- Treatment n=1,243; control n=1,238

→ Improvement of depression and social isolation
→ No effect on clinical events

Writing Committee for the ENRICHD Investigators, JAMA 2003; 289: 3106
But cardiac rehabilitation (CR) may reduce not only depression but also mortality.

Coronary patients, n = 522, 381 men, 141 woman, age 64 ± 10 years, 2000-2005
Control group, n = 179 not completing CR
Mean follow-up 1,296 ± 551 days

Physical exercise following myocardial infarction improves prognosis in patients with depression and/or low social support.

Blumenthal JA et al; ENRICHD-Trial; Medicine and Science in Sports and Exercise 2004; 36:746
Cardiac rehabilitation (CR) and long-term risks of death and myocardial infarction among elderly

30,161 patients with at least 1 CR session between Jan 2000 – Dec 2005; age 70-78; male 63.8%; CR indication: CABG, MI, stable angina, others; **follow-up 4 years after index date**

*Hammil BG, Curtis LH, Schulman KA, Whellan DJ, Circulation 2010; 121: 63*
The association of reduced mortality with the attendance to CR also can be demonstrated in old patients.

Subgroup analysis of the OMEGA-study; observation period 4-12 months after acute MI

Rauch B et al. for the OMEGA Study Group 2010
But, **advanced age** appears to be an independent predictor **not to attend CR** in patients after AMI.

Bernhard Rauch 2010 for the OMEGA Study Group
Moreover, persistent depression reduces adherence to secondary prevention after acute coronary syndromes.
Finally, depressive patients show reduced compliance to CR

Non-completers show an elevated BDI-score, if compared to completers

→ 600 cardiac patients, 70% men, average age 66 years
→ 12-week phase II cardiac rehabilitation
→ Beck Depression Inventory (BDI)
→ Casey et al., J Behav Med 2008
NOTE THE POSITIVE: „Don`t worry, be happy“
10-years incidence of coronary events

Davidson KW, Eur Heart J 2009;
Canadian Nova Scotia Health Survey,
follow-up 1995-2005, 145 CHD events, 14.916 person years
Cardiac rehabilitation + physical exercise in the old

Improve social participation, avoid isolation

Improve satisfaction, happiness, avoid depression

Life style, behaviour

Improved quality of life, reduced clinical events despite cardiovascular disease
Thank you
Depression increases CHD-risk in initially healthy people

- All studies (n=13)
- Depressive mood (n=10)
- Depression (n=3)

Risk lower ↔ ↔ ↔ risk higher