Cardiovascular Disease in CLI

Sabine Steiner
Division of Interventional Angiology
University Hospital Leipzig, Germany
Disclosures

Speaker’s name: Sabine Steiner

I have the following potential conflicts of interest to report:

Consulting:
  Abbott, C.R. Bard
CLI - Poor prognosis for LIFE

Moulik PK et al. Diabetes Care 2003;26:491
..... and LIMB

Moulik PK et al. Diabetes Care 2003;26:491
High in Hospital-Mortality

German nationwide data for 2005-2009

Malyar N et al. Angiology 2016; ahead of print
CLI - worse than cancer

5-Year Mortality for CLI Higher Than Common Cancers

- Prostate Cancer: 0.8%
- Breast Cancer: 11%
- PAD: 30%
- Diabetic Foot Ulcer: 48%
- Critical Limb Ischemia: 67%

CLI – Treatment goals

- Reduce high mortality rates
- Avoid amputations / preserve functional capacity (plantar standing!)
- Improve quality of life and save costs
CV events after admission for MI or PAD

5-year mortality in patients who survived at least 28 days after first hospital admission for MI or PAD

Vaatjes, I. et al. BMC CV disorders. 2010; 10:57
CV events after admission for MI or PAD

5-year mortality in patients who survived at least 28 days after first hospital admission for MI or PAD

5-year risk of death

Age groups

- Men after MI
- Women after MI
- Men with PAD
- Women with PAD

Vaatjes, I. et al. BMC CV disorders. 2010; 10:57
PAD patients often have polyvascular disease: Analysis from the REACH registry

Subjects with claudication:

- ABI < 0.9: n=5,858 (70%)
- Peripheral angioplasty/stenting: n=4,475 (54%)
- Amputation: n=1,232 (15%)

Of the total PAD population: 61.4% have more than 1 other disease location*
- 48.0% have 2 disease locations
- 13.5% have 3 disease locations

* CAD 24.8%, CVD 40.2%

Polyvascular disease and long-term outcome

- 34,205 Patients with N-STEMI >65 y from the CRUSADE registry (Can Rapid Risk Stratification of UA Patients Suppress Adverse Outcomes with Early Implementation of the ACC/AHA Guidelines)
- Assessment of concomitant PAD and CVD
- Median follow up: 35 months

Polyvascular disease and long-term outcome

Polyvascular disease and long-term outcome

Pharmacotherapy in PAD- polyvascular disease

- Danish nationwide administrative registry 2000-2007
- 2 groups with incident PAD identified
  - PAD alone (first-time hospitalization or at least 2 consecutive outpatient visits for PAD)
  - PAD with history of CAD
- Comparator: incident CAD
- Assessment of temporal trends and comparative use of cardioprotective medications

Pharmacotherapy in PAD - polyvascular disease

<table>
<thead>
<tr>
<th>Characteristic or Medication</th>
<th>PAD Alone (n=34,160)</th>
<th>PAD With CAD (n=9570)</th>
<th>CAD Alone (n=154,183)</th>
<th>P Value for Differences Between Groups</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age, median (25th, 75th), y</td>
<td>71.0 (62.3, 78.8)</td>
<td>73.6 (66.0, 80.3)</td>
<td>72.9 (62.5, 81.5)</td>
<td>&lt;0.0001</td>
</tr>
<tr>
<td>Male sex</td>
<td>52.1</td>
<td>62.1</td>
<td>59.5</td>
<td>&lt;0.0001</td>
</tr>
<tr>
<td>History of AF</td>
<td>5.5</td>
<td>17.8</td>
<td>12.9</td>
<td>&lt;0.0001</td>
</tr>
<tr>
<td>History of stroke</td>
<td>8.3</td>
<td>14.4</td>
<td>9.7</td>
<td>&lt;0.0001</td>
</tr>
<tr>
<td>History of HF</td>
<td>5.3</td>
<td>29.7</td>
<td>19.4</td>
<td>&lt;0.0001</td>
</tr>
<tr>
<td>Dysrhythmia</td>
<td>2.1</td>
<td>9.8</td>
<td>8.2</td>
<td>&lt;0.0001</td>
</tr>
<tr>
<td>Diabetes</td>
<td>14.0</td>
<td>28.8</td>
<td>12.9</td>
<td>&lt;0.0001</td>
</tr>
<tr>
<td>COPD</td>
<td>6.6</td>
<td>15.1</td>
<td>10.8</td>
<td>&lt;0.0001</td>
</tr>
<tr>
<td>Hypertension</td>
<td>13.3</td>
<td>33.2</td>
<td>22.7</td>
<td>&lt;0.0001</td>
</tr>
<tr>
<td>Chronic renal insufficiency</td>
<td>2.4</td>
<td>7.1</td>
<td>2.3</td>
<td>&lt;0.0001</td>
</tr>
<tr>
<td>History of malignancy</td>
<td>5.7</td>
<td>6.4</td>
<td>7.3</td>
<td>&lt;0.0001</td>
</tr>
</tbody>
</table>

Cardioprotective medication in the first 18 months after diagnosis

Cardiovascular disease in PAD

Improve survival by aggressive CV risk factor control!

- Smoking cessation
- Antiplatelets
- Statins
- Antidiabetetics
- Long-term blood pressure control
<table>
<thead>
<tr>
<th>Recommendations</th>
<th>Class&lt;sup&gt;a&lt;/sup&gt;</th>
<th>Level&lt;sup&gt;b&lt;/sup&gt;</th>
</tr>
</thead>
<tbody>
<tr>
<td>All patients with PAD who smoke should be advised to stop smoking.</td>
<td>I</td>
<td>B</td>
</tr>
<tr>
<td>All patients with PAD should have their LDL cholesterol lowered to &lt;2.5 mmol/L (100 mg/dL), and optimally to &lt;1.8 mmol/L (70 mg/dL), or ≥ 50% when the target level cannot be reached.</td>
<td>I</td>
<td>C&lt;sup&gt;d&lt;/sup&gt;</td>
</tr>
<tr>
<td>All patients with PAD should have their blood pressure controlled to ≤140/90 mmHg.</td>
<td>I</td>
<td>A</td>
</tr>
<tr>
<td>β-Blockers are not contraindicated in patients with LEAD, and should be considered in the case of concomitant coronary artery disease and/or heart failure.</td>
<td>IIα</td>
<td>B</td>
</tr>
<tr>
<td>Antiplatelet therapy is recommended in patients with symptomatic PAD.</td>
<td>I</td>
<td>C&lt;sup&gt;d&lt;/sup&gt;</td>
</tr>
<tr>
<td>In patients with PAD and diabetes, the HbA1c level should be kept at ≤6.5%.</td>
<td>I</td>
<td>C&lt;sup&gt;d&lt;/sup&gt;</td>
</tr>
<tr>
<td>In patients with PAD, a multidisciplinary approach is recommended to establish a management strategy.</td>
<td>I</td>
<td>C</td>
</tr>
</tbody>
</table>

Risk factor control improves outcome!

- Database of 739 patients with PAD (56% CLI)
- Guidelines-recommended therapies:
  - Antiplatelets (88%)
  - Statins (67%)
  - ACE Inhibitors (60%)
  - Smoking abstinence (71%)

- Propensity score matched analysis, 3-year risk of:
  - Major adverse cardiovascular events (CV death, MI, stroke)
  - Major adverse limb events (Major amputation, thrombolysis, surgical bypass)

Armstrong E. et al. JAHA 2014; 3:e697
Risk factor control improves outcome!

Armstrong E. et al. JAHA 2014; 3:e697
Risk factor control improves outcome!

Armstrong E. et al. JAHA 2014; 3:e697
Statins in CLI

Propensity score matched analysis of 380 patients with CLI

HR: 0.49, 95% CI: 0.24 to 0.97

Westin GG et al. JACC 2014;63:682
Aggressive CV risk factor control to improve survival and decrease amputations!
Cardiovascular Disease in CLI

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