Strengths of the study

- Homogeneous distribution of enrolling centers across the whole country
Strengths of the study

- Homogeneous distribution of enrolling centers across the whole country
Strengths of the study

• Homogeneous distribution of enrolling centers across the whole country
• High participation rate
• Patients enrollment using similar criteria over a period of 15 years
• On-line data recording by dedicated research technicians
• Sponsored by the French Society of Cardiology
Weaknesses of the study

• Potential biases related to the prevalent inclusion of large volume hospitals

• Lack of information on infarct size and MVO

• Lack of assessment of EF at discharge

• Lack of follow-up data on recurrence of acute coronary events
Main points to discuss

• Decreasing age at the time of STEMI
  – Causes
    • Increasing prevalence of risk factors

• Decreasing mortality rate regardless of the initial reperfusion strategy
  – Causes
    • Decreasing time of pain onset to first medical contact
    • Increasing use of statins
    • Increasing use of a pharmaco-invasive approach
Decreasing age at the time of STEMI

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Age (years)</td>
<td>66.2±14.0</td>
<td>64.5±14.6</td>
<td>64.0±14.7</td>
<td>63.3±14.5</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>Hypertension</td>
<td>43.8</td>
<td>43.6</td>
<td>49.2</td>
<td>47.0</td>
<td>0.006</td>
</tr>
<tr>
<td>Hypercholesterolemia</td>
<td>34.8</td>
<td>39.0</td>
<td>43.4</td>
<td>39.3</td>
<td>0.001</td>
</tr>
<tr>
<td>Current smoking</td>
<td>32.0</td>
<td>35.3</td>
<td>37.2</td>
<td>40.9</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>Obesity</td>
<td>14.3</td>
<td>16.3</td>
<td>20.8</td>
<td>20.1</td>
<td>&lt;0.001</td>
</tr>
</tbody>
</table>
Decreasing age at the time of STEMI

(Shneider et al, Int J Env Res Public Health 2010)

Risk factors

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Hypertension</td>
<td>43.8</td>
<td>43.6</td>
<td>49.2</td>
<td>47.0</td>
<td>0.006</td>
</tr>
<tr>
<td>Hypercholesterolemia</td>
<td>34.8</td>
<td>39.0</td>
<td>43.4</td>
<td>39.3</td>
<td>0.001</td>
</tr>
<tr>
<td>Current smoking</td>
<td>32.0</td>
<td>35.3</td>
<td>37.2</td>
<td>40.9</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>Obesity</td>
<td>14.3</td>
<td>16.3</td>
<td>20.8</td>
<td>20.1</td>
<td>&lt;0.001</td>
</tr>
</tbody>
</table>

Overweight (BMI >= 25)

Obesity (BMI >= 30)
Decreasing mortality regardless of initial reperfusion strategy

<table>
<thead>
<tr>
<th>Time to FMD (min)</th>
<th>2000</th>
<th>2005</th>
<th>2010</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>120</td>
<td>90</td>
<td>74</td>
</tr>
</tbody>
</table>

Prevalence of PCI

- 1995: 19.5%
- 2000: 61%
- 2005: 76%
- 2010: 87%

Statins in the first 48 hours

- 1995: 9.8%
- 2000: 45.7%
- 2005: 78.3%
- 2010: 89.9%

PCI after lysis

- 1995: 15%
- 2000: 60%
- 2005: 84%
- 2010: 87%
GRACIA-1, Lancet 2004

![Graph showing the probability of death, non-fatal reinfarction, or ischaemia-driven revascularisation over time since randomisation for conservative and intervention groups.]

**Number at risk**

<table>
<thead>
<tr>
<th>Group</th>
<th>0</th>
<th>2</th>
<th>4</th>
<th>6</th>
<th>8</th>
<th>10</th>
<th>12</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intervention</td>
<td>248</td>
<td>230</td>
<td>228</td>
<td>226</td>
<td>223</td>
<td>222</td>
<td>221</td>
</tr>
<tr>
<td>Conservative</td>
<td>251</td>
<td>225</td>
<td>217</td>
<td>211</td>
<td>208</td>
<td>202</td>
<td>195</td>
</tr>
</tbody>
</table>
Evidence of successful fibrinolysis: within 3–24 h after start of fibrinolytic therapy

Evidence of failed fibrinolysis or uncertainty about success: immediate
PROVE-IT: benefit of early intensive statin treatment in ACS (NEJM 2004)

- 40 mg of pravastatin
- 80 mg of atorvastatin

<table>
<thead>
<tr>
<th>Months of Follow-up</th>
<th>Pravastatin No. at Risk</th>
<th>Atorvastatin No. at Risk</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>2063</td>
<td>2099</td>
</tr>
<tr>
<td>3</td>
<td>1688</td>
<td>1736</td>
</tr>
<tr>
<td>6</td>
<td>1536</td>
<td>1591</td>
</tr>
<tr>
<td>9</td>
<td>1423</td>
<td>1485</td>
</tr>
<tr>
<td>12</td>
<td>810</td>
<td>842</td>
</tr>
<tr>
<td>18</td>
<td>138</td>
<td>133</td>
</tr>
</tbody>
</table>

P = 0.005
PROVE-IT: benefit of early intensive statin treatment in ACS (NEJM 2004)

Statins in all patients, in the absence of contraindications, irrespective of cholesterol levels, initiated as soon as possible to achieve LDL cholesterol <100 mg/dL (2.5 mmol/L)
Beneficial effects of statins in STEMI (FAST-MI, HEART 2010)
Final remarks

• The battle against risk factors is not over

• The benefits of an invasive strategy and of early intensive statin treatment in STEMI, shown in CRT and highlighted in Guidelines, have been confirmed in this excellent French survey
The virtuous circle

- Research
- Implementation
- Surveys
- Trials

Scientific societies