The Need for a National Registry
Some Recent Findings

Philip Urban, on behalf of the AMIS Plus Investigators

Bern - March 5, 2009
What are we confronted with

✓ A duty to deliver optimal care
✓ The growing impact of EBM
✓ A proliferation of (useful!) guidelines
✓ Increasing cost constraints
✓ A moving target, with rapid evolution in:
  ✴ diagnostic tools/criteria
  ✴ pharmacology
  ✴ interventional techniques

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The AMIS registry (1)

- **Acute Myocardial Infarction in Switzerland**
- National prospective registry of ACS
- 29’462 patients included from 1997 to 2008
- 76 hospitals
- Internet or paper data entry
- 180 parameters until hospital discharge
- Data Center at the Institute of Social and Preventive Medicine, University of Zurich

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What AMIS can offer

✓ Ongoing assessment of the “real world”
✓ A definition of the nature and magnitude of ACS in Switzerland
✓ Compliance with guidelines
✓ Trends over time
✓ Benchmarking for participants
✓ Define specificity of individual institutions
✓ Potential for updating/modifying guidelines

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How well are we translating guidelines into clinical practice?

- Reperfusion therapy for STEMI
- Discharge medication after ACS
Acute reperfusion

• 29’462 patients admitted for ACS between 1997 and 2008
• 17’117 (58.3 %) with STEMI or LBBB at admission
• Follow-up until discharge

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## Demographics (1)

<table>
<thead>
<tr>
<th></th>
<th>No reperfusion</th>
<th>Lysis</th>
<th>PCI</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>n</strong></td>
<td>5503 (32.1 %)</td>
<td>3486 (20.4 %)</td>
<td>8128 (47.5%)</td>
</tr>
<tr>
<td><strong>Age</strong></td>
<td>70.8 ± 13.5</td>
<td>62.4 ± 12.3</td>
<td>61.6 ± 12.4</td>
</tr>
<tr>
<td><strong>Female gender</strong></td>
<td>36%</td>
<td>23%</td>
<td>23%</td>
</tr>
<tr>
<td><strong>Prior CAD</strong></td>
<td>44%</td>
<td>28%</td>
<td>27%</td>
</tr>
<tr>
<td><strong>Diabetes</strong></td>
<td>25%</td>
<td>15%</td>
<td>16%</td>
</tr>
<tr>
<td><strong>Hypertension</strong></td>
<td>61%</td>
<td>45%</td>
<td>52%</td>
</tr>
<tr>
<td><strong>Current smoking</strong></td>
<td>31%</td>
<td>46%</td>
<td>47%</td>
</tr>
<tr>
<td><strong>Hyperlipidemia</strong></td>
<td>50%</td>
<td>55%</td>
<td>55%</td>
</tr>
</tbody>
</table>

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### Demographics (2)

<table>
<thead>
<tr>
<th></th>
<th>No reperfusion</th>
<th>Lysis</th>
<th>PCI</th>
</tr>
</thead>
<tbody>
<tr>
<td>Killip class I</td>
<td>63 %</td>
<td>77 %</td>
<td>85 %</td>
</tr>
<tr>
<td>Killip class II</td>
<td>25 %</td>
<td>17%</td>
<td>10 %</td>
</tr>
<tr>
<td>Killip class III</td>
<td>9 %</td>
<td>3 %</td>
<td>2 %</td>
</tr>
<tr>
<td>Killip class IV</td>
<td>3 %</td>
<td>3 %</td>
<td>3 %</td>
</tr>
<tr>
<td>Median delay (min) symptoms - admission</td>
<td>414</td>
<td>150</td>
<td>185</td>
</tr>
<tr>
<td>LBBB</td>
<td>20 %</td>
<td>3 %</td>
<td>4 %</td>
</tr>
<tr>
<td>Pre-admission CPR</td>
<td>5 %</td>
<td>4 %</td>
<td>4 %</td>
</tr>
<tr>
<td>Pre-admission Defibrillation</td>
<td>3 %</td>
<td>4 %</td>
<td>6 %</td>
</tr>
</tbody>
</table>

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Hospital mortality

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Reperfusion for AMI 1997-2008

Acute Myocardial Infarction in Switzerland

A. M. I. S.

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Temporal trends for cardiogenic shock

Duration of hospital stay for STEMI 1997-2009

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Reperfusion for AMI in Swiss hospitals

- PCI has currently become by far the most frequently used mode of therapy
- The number of patients not given reperfusion therapy is now < 20%
- These changes are associated with a decrease in crude hospital mortality and with a markedly shorter hospital stay
- Comorbid conditions have a major impact on outcome and on the implementation of EBM-based guidelines

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How well are we translating guidelines into clinical practice?

- Reperfusion therapy for STEMI
- Discharge medication after ACS
  - antithrombotics
  - statins
  - betablockers
  - ACE inhibitors and ATII blockers

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Aspirin treatment at discharge

Acute Myocardial Infarction in Switzerland

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Oral antiocoagulants at discharge

Acute Myocardial Infarction in Switzerland

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Thienopyridines at discharge

![Bar chart showing the percentage of Thienopyridines at discharge from 1997 to 2008. The chart includes data for both STEMI/LBBB and NSTEMI/UA. The percentage ranges from 3% in 1997 to 91% in 2008.](image)
Statins at discharge

Acute Myocardial Infarction in Switzerland

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Beta blockers at discharge

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ACEI at discharge
AT II blockers at discharge

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Acute Myocardial Infarction in Switzerland

AMIS
number of cardiac drugs* at discharge

* Aspirin, ticlopidine/clopidogrel, oral anticoagulants, betablocker, ACE and AT2 inhibitors, Ca-channel blockers, long-acting nitrates, digoxin, diuretics, statins, amiodarone.

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Medication at discharge after ACS in Swiss hospitals

- In the hospital setting, RCT’s and guidelines have a profound (and appropriate!) impact on discharge medication after ACS.

- The potential problems (compliance, cost, drug interactions) associated with complex combined drug regimens must be kept in mind.

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Thank you