<table>
<thead>
<tr>
<th>Time</th>
<th>Session</th>
<th>Speaker</th>
</tr>
</thead>
<tbody>
<tr>
<td>14:00-14:05</td>
<td>Welcome</td>
<td>Paul Erne</td>
</tr>
<tr>
<td>14:05-14:20</td>
<td>History and highlights of the AMIS Plus Registry</td>
<td>Paul Erne</td>
</tr>
<tr>
<td>14:20-14:30</td>
<td>Status of the AMIS Plus Registry</td>
<td>Dragana Radovanovic</td>
</tr>
<tr>
<td>14:30-14:45</td>
<td>Quality in Cardiovascular Medicine</td>
<td>Michael Zellweger</td>
</tr>
<tr>
<td>14:45-15:00</td>
<td>Quality measurements using the AMIS Plus Registry</td>
<td>Philip Urban</td>
</tr>
<tr>
<td>15:00-15:30</td>
<td>Coffee Break</td>
<td></td>
</tr>
<tr>
<td>15:30-15:45</td>
<td>Hypertension in ACS patients enrolled in AMIS Plus</td>
<td>Paul Erne</td>
</tr>
<tr>
<td>15:45-16:00</td>
<td>Obesity paradox in STEMI patients who underwent PCI</td>
<td>Fabienne Witassek</td>
</tr>
<tr>
<td>16:00-16:15</td>
<td>Trends in treatment of octogenarians and nonagenarians with ACS</td>
<td>Andreas Schoenenberger</td>
</tr>
<tr>
<td>16:15-16:30</td>
<td>Changing strategies during hospitalization for ACS</td>
<td>Marco Roffi</td>
</tr>
<tr>
<td>16:30-16:45</td>
<td>Triple therapy in ACS patients</td>
<td>Hans Rickli</td>
</tr>
<tr>
<td>16:45-17:00</td>
<td>Discussion</td>
<td></td>
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</tbody>
</table>
History and highlights of the AMIS Plus Registry

Paul Erne
Sponsors & Participants’ Meeting
5 March 2015, Berne
Project since 1997

AMIS
Acute Myocardial Infarction in Switzerland
AMIS Plus Registry

• History of AMIS Plus Registry
• Highlights
  – Temporal trends in therapy
  – Comorbidities
  – Palliative treatment
  – Very old patients
  – Multiple – PCI
  – P2Y12 - inhibitors
  – Complications and outcomes
• Sponsors and Donators
AMIS Plus Project

• Founding medical societies:
  • Swiss Society of Cardiology
  • Swiss Society of Internal Medicine
  • Swiss Society of Intensive Medicine

• Prospective, observational study supported by pharmaceutical industry funding

• Project approved by
  • UREK (supra-regional ethics committee)
  • Swiss Federal Commission for Data Security
  • All Cantonal Ethics Commissions (2005)
  • Amendment for follow-up questionnaire (2014/2015)
AMIS Plus History

- **PIMICS** (Captopril Survey)
  1995/1996, AMI in 73 hospitals
- **AMIS**: 1997, AMI in approximately 50 hospitals, electronic data transfer, diskettes or Internet
- **AMIS Plus**: 2000, AMI and UA
- Transfer of AMIS Data Center from Geneva to Zurich
AMIS Plus Registry

• History of AMIS Plus Registry

• Highlights
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• Sponsors and Donators
Reperfusion therapy in ACS patients (N=48,604)

% of patients

No reperfusion  Thrombolysis  PCI (any)

P<0.001
Trends in immediate drug therapy of ACS patients (n=48,604)
AMIS Plus Registry

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• Collaborations
• Sponsors and Donators
Comorbidities as independent predictors of in-hospital mortality (n=38,708)

OR (95% CI)

- Heart failure: 1.88 (1.57-2.25)
- Peripheral vascular disease: 1.23 (1.03-1.48)
- Cerebrovascular disease: 1.26 (1.06-1.50)
- Hemiplegia: 1.92 (1.28-5.87)
- Dementia: 1.15 (0.90-1.47)
- Chronic lung disease: 1.18 (0.99-1.41)
- Connective tissue disease: 0.99 (0.64-1.51)
- Peptic ulcer disease: 0.98 (0.73-1.31)
- Diabetes: 1.35 (1.19-1.54)
- Liver disease: 1.82 (1.12-2.95)
- Renal disease: 1.84 (1.60-2.11)
- Cancer disease: 2.12 (1.83-2.46)

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• Sponsors and Donators
In-hospital complications and outcomes in ACS patients according to therapy received

<table>
<thead>
<tr>
<th>Condition</th>
<th>Palliative (n=1485)</th>
<th>Conservative (n=11119)</th>
<th>Reperfusion (n=32487)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cardiogenic shock</td>
<td>15.6</td>
<td>7.6</td>
<td>4.3</td>
</tr>
<tr>
<td>Reinfarction</td>
<td>2.2</td>
<td>2.8</td>
<td>1.3</td>
</tr>
<tr>
<td>Bleeding</td>
<td>2.0</td>
<td>1.7</td>
<td>2.8</td>
</tr>
<tr>
<td>Stroke</td>
<td>1.8</td>
<td>1.1</td>
<td>0.7</td>
</tr>
<tr>
<td>Mortality</td>
<td></td>
<td>25.8</td>
<td>11.5</td>
</tr>
<tr>
<td>MACCE*</td>
<td></td>
<td>27.4</td>
<td>13.2</td>
</tr>
</tbody>
</table>

*in-hospital development
Palliative treatment of ACS patients

• Only 3-4% of all patients with ACS have been treated palliatively (use of aspirin and analgesics only).

• Whereas it may often be completely appropriate to provide restrictive and palliative care only for elderly patients with very poor prognoses, the study shows a much larger grey zone of decision making.

• An international consensus should be reached on whether such patients should be included in the overall evaluation of ACS patient outcomes.

AMIS Plus Registry

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• Sponsors and Donators
PCI (any) and in-hospital mortality in ACS patients according to age groups and admission periods (N=13,196)

**PCI (any)**

<table>
<thead>
<tr>
<th>Age Group</th>
<th>% of Patients (N)</th>
</tr>
</thead>
<tbody>
<tr>
<td>70-&lt;80y</td>
<td>56.9 (7644)</td>
</tr>
<tr>
<td>80-&lt;90y</td>
<td>24.1 (4877)</td>
</tr>
<tr>
<td>90y and above</td>
<td>6.2 (675)</td>
</tr>
</tbody>
</table>

**In-hospital mortality**

<table>
<thead>
<tr>
<th>Age Group</th>
<th>% of Patients (N)</th>
<th>P-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>70-&lt;80y</td>
<td>79.0 (7974)</td>
<td>0.23</td>
</tr>
<tr>
<td>80-&lt;90y</td>
<td>44.9 (5009)</td>
<td>0.007</td>
</tr>
<tr>
<td>90y and above</td>
<td>18.1 (679)</td>
<td>0.73</td>
</tr>
</tbody>
</table>

P=0.23, P=0.007, P=0.73
AMIS Plus Registry

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In-hospital mortality according to risk in STEMI patients who underwent single or multivessel PCI

After stratifying patients according to risk M-PCI does not appear to be associated with higher in-hospital mortality.

Predictors for 1-year MACCE (composed endpoint of re-infarction, cerebrovascular event, interventions and/or death during follow-up period)

<table>
<thead>
<tr>
<th>Variables</th>
<th>OR</th>
<th>95% CI</th>
<th>P-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Multivessel treatment</td>
<td>0.69</td>
<td>0.51-0.93</td>
<td>0.017</td>
</tr>
<tr>
<td>Left-main</td>
<td>1.28</td>
<td>0.76-2.14</td>
<td>0.36</td>
</tr>
<tr>
<td>Female-gender</td>
<td>1.15</td>
<td>0.87-1.53</td>
<td>0.33</td>
</tr>
<tr>
<td>Age (per additional year)</td>
<td>0.99</td>
<td>0.99-1.00</td>
<td>0.80</td>
</tr>
<tr>
<td>Charlson Index -&gt; 2</td>
<td>1.42</td>
<td>1.05-1.92</td>
<td>0.025</td>
</tr>
<tr>
<td>Resuscitation-prior-admission</td>
<td>0.87</td>
<td>0.45-1.67</td>
<td>0.67</td>
</tr>
<tr>
<td>Killip-class -&gt; 2</td>
<td>1.76</td>
<td>0.99-3.12</td>
<td>0.052</td>
</tr>
</tbody>
</table>

AMIS Plus Registry

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Analyses of ACS patients treated with PCI showed that prasugrel treatment is frequently used selectively in younger STEMI patients. In a propensity score-matched analysis of 4,602 patients, prasugrel use was associated with reduced in-hospital mortality, despite a significant increase in bleeding complications. This suggests that prasugrel improves outcomes when used in appropriately selected ACS patients treated with PCI.

**Table 2.** Independent predictors of hospital mortality in acute coronary syndrome (ACS) patients treated by percutaneous coronary intervention (PCI).

<table>
<thead>
<tr>
<th>Predictor</th>
<th>OR (95% CI)</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Prasugrel vs clopidogrel</td>
<td>0.50 (0.29–0.86)</td>
<td>0.013</td>
</tr>
<tr>
<td>Age, per additional year</td>
<td>1.04 (1.02–1.06)</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>Killip&gt;2</td>
<td>7.99 (4.84–13.2)</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>Charlson score&gt;1</td>
<td>1.89 (1.19–2.99)</td>
<td>0.007</td>
</tr>
<tr>
<td>Prehospital resuscitation</td>
<td>9.35 (5.38–16.3)</td>
<td>&lt;0.001</td>
</tr>
</tbody>
</table>

Cl: confidence interval; OR: odds ratio.

Kurz D et al. EHJ ACC 2015; DOI: 10.1177/2048872614566946
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Complications and outcomes in ACS patients (n=48,604)

- Cardiogenic shock: 10.8% in 1997, 4.9% in 2014
- Stroke: % of patients
- Reinfarction: % of patients
- Mortality: % of patients

*in-hospital development
AMIS Plus Registry

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Sponsors and Donators 2014

- Abbott
- Amgen
- AstraZeneca
- Bayer
- Biotronik
- Daiichi-Sankyo/Lilly
- Novartis
- Pfizer
- SIS Medical
- Vascular Medical

- B. Braun Medical
- Cordis
- A. Menarini
- Mepha Pharma
- MSD/Essex
- St. Jude Medical
- Servier
- Takeda