Invasive treatment of elderly patients aged 85 and older with non-ST segment elevation myocardial infarction (NSTEMI)

Analysis from the PL-ACS Registry

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Conflict of interest - NONE
Background

- Elderly patients have usually more co-morbidities and are patients of higher risk
- This leads to a doubt whether they benefit from invasive treatment of non-ST-segment elevation myocardial infarction (NSTEMI)
- Consequently, elderly patients with NSTEMI less often receive treatment recommended by the guidelines (including invasive treatment)
- Additionally, they are usually underrepresented in the randomized clinical trials
The purpose of this analysis was:

- To assess whether elderly patients with NSTEMI benefit from invasive treatment
In brief, the PL-ACS registry is an ongoing, nationwide, multicentre, prospective, observational study of consecutively hospitalized patients with the whole spectrum of ACS in Poland.

It is a joint initiative of the Silesian Centre for Heart Diseases and the Ministry of Health of Poland. Logistic support is obtained from the National Health Fund, which is a nationwide public health insurance institution in Poland and from which an insurance policy is required for all Polish citizens.

All admitted patients with suspected ACS are screened for eligibility to enter the registry, but they are not enrolled until acute coronary syndrome is confirmed.

All-cause mortality data with exact dates of deaths are obtained from official mortality records from the National Health Fund.
All pts aged >= 85 with NSTEMI, who were registered in the prospective Polish Registry of Acute Coronary Syndromes (PL-ACS) from October 2003 to October 2008 were included.

NSTEMI
N = 64 115

Exclusion ->
Age < 85 years
N = 60 180 (93.9%)

NSTEMI and age ≥ 85 years
N = 3935 (6.1%)

Invasive
N = 457 (11.6%)

Non-invasive
N = 3 478 (88.4%)

Endpoints: In-hospital outcomes and 12-month mortality
# Baseline characteristics

<table>
<thead>
<tr>
<th></th>
<th>Invasive</th>
<th>Non-invasive</th>
<th>P value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of patients</td>
<td>457 (11.6%)</td>
<td>3478 (88.4%)</td>
<td>&lt;0.0001</td>
</tr>
<tr>
<td>Mean age, years ± SD</td>
<td>86.6 ± 2.0</td>
<td>88.2 ± 3.2</td>
<td></td>
</tr>
<tr>
<td>Female sex, %</td>
<td>50.6</td>
<td>66.4</td>
<td>&lt;0.0001</td>
</tr>
<tr>
<td>Hypertension, %</td>
<td>73.7</td>
<td>68.3</td>
<td>&lt;0.0001</td>
</tr>
<tr>
<td>Diabetes, %</td>
<td>26.5</td>
<td>26.3</td>
<td>0.94</td>
</tr>
<tr>
<td>Prior myocardial infarction, %</td>
<td>27.8</td>
<td>20.2</td>
<td>0.0002</td>
</tr>
<tr>
<td>Prior revascularisation, %</td>
<td>6.4</td>
<td>1.7</td>
<td>&lt;0.0001</td>
</tr>
<tr>
<td>Killip 3 on admission, %</td>
<td>6.1</td>
<td>16.3</td>
<td>&lt;0.0001</td>
</tr>
<tr>
<td>Killip 4 on admission, %</td>
<td>2.4</td>
<td>5.1</td>
<td>0.012</td>
</tr>
<tr>
<td>Cardiac arrest before admission, %</td>
<td>1.3</td>
<td>1.3</td>
<td>0.96</td>
</tr>
</tbody>
</table>
Invasive treatment

Coronary angiography
N = 457 (100%)

PCI
N = 322 (70.5%)

CABG
N = 50 (10.9%)

No revasc
N = 85 (18.6%)

Revascularization
N = 372 (81.4%)

Polish Registry of Acute Coronary Syndromes
## In-hospital outcomes

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<tbody>
<tr>
<td>Number of patients</td>
<td>457 (11.6%)</td>
<td>3478 (88.4%)</td>
<td></td>
</tr>
<tr>
<td>Stroke, %</td>
<td>0.9</td>
<td>1.0</td>
<td>0.92</td>
</tr>
<tr>
<td>Major bleeding, %</td>
<td>2.6</td>
<td>1.2</td>
<td>0.012</td>
</tr>
<tr>
<td>Re-infarction, %</td>
<td>2.2</td>
<td>5.8</td>
<td>0.0013</td>
</tr>
<tr>
<td>Death, %</td>
<td>6.4</td>
<td>17.3</td>
<td>&lt;0.0001</td>
</tr>
</tbody>
</table>
12-month mortality

- Non-invasive treatment: 47.4%
- Invasive treatment: 25.2%

P log-rank < 0.0001
Multivariate analysis

PL-ACS

12-month mortality
Hazard Ratio (95% confidence interval)

- Killip 3 or 4 on admission: <0.0001
- Hypertension: <0.0001
- Age (per 1 year more): <0.0001
- Invasive treatment: <0.0001
- Cardiac arrest before admission: 0.0003
- Diabetes: 0.69
- Prior revascularization: 0.70
- Prior myocardial infarction: 0.75
- Female gender: 0.90

Lower mortality to Higher mortality
Conclusions

- Elderly patients significantly benefit from invasive treatment of non-ST segment elevation myocardial infarction (NSTEMI)

- However the frequency of invasive treatment in elderly patients with NSTEMI is very low