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Acute Myocardial Infarction as First Presentation among patients with Coronary Heart Disease

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Introduction

• Acute Coronary Syndrome (ACS) has always been one of the major leading causes of death worldwide.\textsuperscript{1-3}

• Patients with previous AMI had a higher risk of cardiovascular death than patients who have no previous history of AMI.\textsuperscript{4}

Introduction, cont.

- STEMI patients showed a lower cardiovascular risk factors than NSTEMI patients.\(^5\)
- Among AMI patients without prior cardiovascular disease:

\[
\text{In-Hospital Mortality} \quad \infty \quad \frac{1}{\text{No. of Risk Factors}}
\]

5. García et al. Am J Cardiol. 2011
Worldwide registries, around 1/3 of ACS patients had STEMI.

Compared to our regional area, around 2/5 of ACS had STEMI.

Previous MI:

- Aso S et al. Int Heart J. 2011
- Coventry LL et al. Heart Lung. 2011
- Kirchberger I et al. Am J Cardiol. 2011
- AlHabib K et al. J Saudi Heart Assoc. 2011

<table>
<thead>
<tr>
<th>Previous ACS Registries</th>
<th>No Prior MI (%)</th>
<th>Total Registry</th>
</tr>
</thead>
<tbody>
<tr>
<td>GRACE, 11 389</td>
<td>68.00%</td>
<td>100%</td>
</tr>
<tr>
<td>WDHR, 12 395</td>
<td>74.70%</td>
<td>100%</td>
</tr>
<tr>
<td>KAMIR, 14 885</td>
<td>96.10%</td>
<td>100%</td>
</tr>
<tr>
<td>SCAAR, 19 771</td>
<td>62.80%</td>
<td>100%</td>
</tr>
<tr>
<td>NRMI, 39 911</td>
<td>83.80%</td>
<td>100%</td>
</tr>
</tbody>
</table>
Rationale

- Only scarce information is available regarding AMI as first presentation among CHD patients in our region.
- It would be imperative upon the investigators from our region to bridge the existing gap.
- GULF-RACE registry was a response to such need.
Research Objectives

• Assess prevalence of AMI among CHD patients

• Two main groups:
  o AMI with no prior ACS
  o AMI with history of ACS

• Compare between the two groups in term of:
  o Risk factors
  o Clinical correlates
  o Treatment profiles
  o Mortality
Methodology

• A registry-based study “Gulf-RACE-2”

• Prospective, multicenter study, which recruited 7,929 consecutive ACS patients from GCC countries in 65 hospitals

• Around 3,531 patients, diagnosed with AMI in this registry
Gulf-RACE-2 registry obtained:

- Patient baseline characteristics
- Clinical presentations
- Co-morbidities
- Treatments and outcomes

Diagnosis of ACS was based on the American College of Cardiology guidelines

Case report form for each patient with suspected ACS was initiated upon hospital admission
Total “Gulf-RACE II” registry of 7,929 ACS patients

Patients with AMI presentation = 3,531 (44.5%) patients

Patients with 1st AMI = 2,713 (76.9% of AMI patients) (34.2% of total registry)
Comparison between the two groups based on Risk Factors for ACS

- Male Gender: P < 0.001
- Smoking Habit: P = 0.037
- Diabetes: P < 0.001
- Hypertension: P < 0.001
- Hyperlipidemia: P < 0.001
- Family Hx: P < 0.001

First AMI vs. AMI p. ACS
Comparison between the two groups based on Killip Classifications

All P < 0.001
### Table 2: In-Hospital Treatments

<table>
<thead>
<tr>
<th>Variable</th>
<th>Total</th>
<th>AMI with Prior ACS</th>
<th>AMI with No-prior ACS</th>
<th>P Value</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>N= 3 531</td>
<td>N= 818 (23.1)</td>
<td>N= 2 713 (76.9)</td>
<td></td>
</tr>
<tr>
<td>Treatment:</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Aspirin</td>
<td>3 480 (98.6)</td>
<td>798 (97.6)</td>
<td>2 682 (98.9)</td>
<td>0.007</td>
</tr>
<tr>
<td>Clopidogrel</td>
<td>2 915 (82.6)</td>
<td>648 (79.2)</td>
<td>2 267 (83.6)</td>
<td>0.003</td>
</tr>
<tr>
<td>β Blocker</td>
<td>2 523 (71.5)</td>
<td>594 (72.6)</td>
<td>1 929 (71.1)</td>
<td>0.213</td>
</tr>
<tr>
<td>ACE-I/ARB</td>
<td>2 689 (76.2)</td>
<td>642 (78.5)</td>
<td>2 047 (75.5)</td>
<td>0.040</td>
</tr>
<tr>
<td>Statin</td>
<td>3 376 (95.6)</td>
<td>761 (93.0)</td>
<td>2 615 (96.4)</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>Thrombolytic Therapy</td>
<td>1 648 (53.9)</td>
<td>335 (47)</td>
<td>1 313 (56)</td>
<td>&lt;0.001</td>
</tr>
</tbody>
</table>
Comparison between the two groups based on In – hospital events

First AMI
AMI p. ACS

All P < 0.001
Comparison between the two groups based on Mortality

First AMI  AMI p. ACS

In-Hospital Mortality: 6.00%  9.40%
30-Day Mortality: 9.70%  15.40%
1-Year Mortality: 12.90%  21%

All P <0.001
Comparison between our registry and US national Registry of MI, with respect to 1\textsuperscript{st} AMI

Gulf RACE II

Canto JG et al. Am J Cardiol. 2012 Nov

Comparison with recent study
<table>
<thead>
<tr>
<th>Registry</th>
<th>No. of patients</th>
<th>Mean age (yr old)</th>
<th>Female (%)</th>
<th>HTN (%)</th>
<th>DM (%)</th>
<th>DYS (%)</th>
<th>Smoking (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>NRMI-3,4</td>
<td>39,911</td>
<td>61</td>
<td>27.8</td>
<td>49.4</td>
<td>17.8</td>
<td>39.9</td>
<td>43.3</td>
</tr>
<tr>
<td>SCAAR</td>
<td>19,771</td>
<td>66</td>
<td>30.0</td>
<td>44.2</td>
<td>18.0</td>
<td>51.4</td>
<td></td>
</tr>
<tr>
<td>KAMIR</td>
<td>14,885</td>
<td>67.1</td>
<td>28.4</td>
<td>45.7</td>
<td>25.8</td>
<td>33.4</td>
<td>53.2</td>
</tr>
<tr>
<td>Western Denmark Heart Registry</td>
<td>12,395</td>
<td>63.5</td>
<td>27.9</td>
<td>36.2</td>
<td>11.5</td>
<td>41.0</td>
<td>34.4</td>
</tr>
<tr>
<td>GRACE</td>
<td>11,389</td>
<td>66.3</td>
<td>33.5</td>
<td>57.8</td>
<td>23.3</td>
<td>43.6</td>
<td>56.7</td>
</tr>
<tr>
<td>Gulf-RACE II Registry</td>
<td>3,351</td>
<td>54.4</td>
<td>13.4</td>
<td>34.6</td>
<td>32.7</td>
<td>24.1</td>
<td>65</td>
</tr>
<tr>
<td>HIJAMI Registry</td>
<td>3,021</td>
<td>68.1</td>
<td>29.3</td>
<td>55.0</td>
<td>36.5</td>
<td>38.2</td>
<td>53.6</td>
</tr>
</tbody>
</table>
Conclusions

• Findings of our study are consistent with recent studies

• 1\textsuperscript{st} AMI among ACS patient were around 3/4 of total AMI patients in Gulf-RACE-2 registry

• 1\textsuperscript{st} AMIer were younger, having lower co-morbidities and lower Killip classifications II and III

• Patients with 1\textsuperscript{st} AMI were more likely to receive antiplatelet, statins or thrombolytic therapy
Conclusions, cont.

- Almost all risk factors for CHD Major in-hospital events were more prevalent in the AMI with prior ACS patients, $p<0.001$

- Further studies and presentation of more results will take place in future
Thanks' for your kind attention!!!!!!!
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http://cardiology.conferenceseries.com/