Cardiovascular Disease in the Middle East

Afzalhussein Yusufali. MD, FRCP (Glasg), Professor of Medicine/Consultant Cardiologist, Dubai Medical University, Dubai Health Authority.
Agenda

- CVD & CVD Risk factors
- Primary prevention: Hypertension
- Secondary prevention.
- Challenges in prevention
NCDs are estimated to account for 67% of all deaths in UAE.

- CVD: 38%
- Infections / maternal / perinatal: 13%
- Injuries: 21%
- Other NCD: 11%
- Cancers: 12%
- Diabetes: 3%
- Respiratory: 2%
- Other NCD: 11%

Young population (median age 18 for Nationals, 31 for Expatriates)

NCD deaths <60 years = in men 59.7%

Disability Adjusted Life Years (DALYs)
A Heart Attack Strikes Early

*Typical ACS patient in the Gulf is ~ 10 years younger than her Western counterpart*

**Gulf RACE**
- <55: 23%
- 55-64: 27%
- 65-74: 18%
- >75: 8%

**GRACE**
- <55: 23%
- 65-74: 24%
- 55-64: 26%
- >75: 27%

~ half of ACS patients in the Gulf are <55 years old compared to ~ one quarter of ACS patients in the West

A Large Burden of Risk

ACS patients in the Gulf
~ 50% Hypertensive
~ 40% Diabetic
~ 40% Smokers

Opportunistic screening for CVD RF

CVD RF: Smoking, Dyslipidemia, Hypertension, Diabetes, Obesity (by BMI or Abd.).


4,128 subjects
Mean Age 38+/- 11 years
Weqaya

A Population-Wide Cardiovascular Screening Program in Abu Dhabi, United Arab Emirates

mean age was 36.82 years (SD=14.3)
50,138 above 18 years of age

Crude and Age-Standardized Cardiovascular Risk Factor Prevalence Rates in Wekaya

<table>
<thead>
<tr>
<th>Risk Factor</th>
<th>Crude Prevalence Rate</th>
<th>Age-Standardized Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Obesity</td>
<td>35.4</td>
<td>41.1</td>
</tr>
<tr>
<td>Overweight</td>
<td>31.9</td>
<td>34.0</td>
</tr>
<tr>
<td>Central obesity</td>
<td>54.8</td>
<td>62.4</td>
</tr>
<tr>
<td>Dyslipidemia</td>
<td>44.2</td>
<td>50.7</td>
</tr>
<tr>
<td>Hypertension</td>
<td>23.1</td>
<td>29.2</td>
</tr>
<tr>
<td>Smoking</td>
<td>11.6</td>
<td>11.3</td>
</tr>
<tr>
<td>Prediabetes</td>
<td>27.1</td>
<td>29.5</td>
</tr>
<tr>
<td>Diabetes</td>
<td>17.6</td>
<td>24.6</td>
</tr>
</tbody>
</table>

Smoking is most common among younger UAE national men.

The prevalence of smoking overall was 24.3% in males and 0.8% in females.

## Characteristics of tobacco smokers by type of tobacco smoked

<table>
<thead>
<tr>
<th></th>
<th>Cigarettes</th>
<th>Midwakh</th>
<th>Shisha</th>
<th>Cigar</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>proportion of smokers (%)</strong></td>
<td>77%</td>
<td>15%</td>
<td>7%</td>
<td>1%</td>
</tr>
<tr>
<td><strong>mean age of onset</strong></td>
<td>22</td>
<td>21</td>
<td>24</td>
<td>24</td>
</tr>
<tr>
<td><strong>mean age of smokers</strong></td>
<td>33</td>
<td>30</td>
<td>31</td>
<td>35</td>
</tr>
</tbody>
</table>

WHO Global Schools Health Survey
UAE 2005 and 2010

children aged 13–15 years of all nationalities

<table>
<thead>
<tr>
<th></th>
<th>2005</th>
<th>2010</th>
</tr>
</thead>
<tbody>
<tr>
<td>Obesity rate (&gt;95th Centile)</td>
<td>12%</td>
<td>14%</td>
</tr>
<tr>
<td>Overweight (&gt;85th Centile)</td>
<td>33%</td>
<td>43%</td>
</tr>
</tbody>
</table>
# Prevalence of Hypertension in UAE

<table>
<thead>
<tr>
<th>Age category</th>
<th>WEQAYA¹</th>
<th>PURE ME²</th>
<th>South Asian male³</th>
<th>Hatta Hospital⁴</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age standardized</td>
<td>29.2%</td>
<td>33%</td>
<td>34.2%</td>
<td>34.3%</td>
</tr>
<tr>
<td>Age specific</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>18-29</td>
<td>10.2%</td>
<td>22.1%</td>
<td>12.0%</td>
<td></td>
</tr>
<tr>
<td>30-49</td>
<td>18.1%</td>
<td>37.5%</td>
<td>20.1%</td>
<td></td>
</tr>
<tr>
<td>50-69</td>
<td>57.7%</td>
<td>55.5%</td>
<td>72.2%</td>
<td></td>
</tr>
<tr>
<td>&gt;70</td>
<td>54.8%</td>
<td>-</td>
<td>-</td>
<td>98.3%</td>
</tr>
</tbody>
</table>

2. Yusufali et al. 2017 J Hypertens DOI:10.1097/HJH.0000000000001326
Age-standardized Hypertension prevalence, awareness, treatment and control in four Middle Eastern countries.

Yusufali et al. Prevalence, awareness, treatment and control of hypertension in four Middle East countries 2017 J Hypertens DOI:10.1097/HJH.0000000000001326
Hypertension prevalence, awareness, treatment and control in national surveys from England, the USA and Canada compared to Middle East.

<table>
<thead>
<tr>
<th></th>
<th>Prevalence</th>
<th>Aware</th>
<th>Treated</th>
<th>Controlled amongst Rx</th>
</tr>
</thead>
<tbody>
<tr>
<td>England</td>
<td>30.0</td>
<td>65.3</td>
<td>51.3</td>
<td>27.3</td>
</tr>
<tr>
<td>Canada</td>
<td>19.5</td>
<td>83.4</td>
<td>79.9</td>
<td>65.8</td>
</tr>
<tr>
<td>USA</td>
<td>29.1</td>
<td>81.1</td>
<td>74.0</td>
<td>52.8</td>
</tr>
<tr>
<td>Middle East*</td>
<td>33</td>
<td>49</td>
<td>47</td>
<td>19</td>
</tr>
</tbody>
</table>

*Yusufali et al. Prevalence, awareness, treatment and control of hypertension in four Middle East countries 2017 J Hypertens DOI:10.1097/HJH.0000000000001326
% Hypertensive treated by age group

% Hypertensive treated by gender and age group

The use of two or more BP medications

Only 23% of those aware of hypertension were on statin

>2 AntiHypertensive drugs

Yusufali et al. Prevalence, awareness, treatment and control of hypertension in four Middle East countries 2017 J Hypertens DOI:10.1097/HJH.0000000000001326
Secondary prevention

Yusufali et al. Prevalence, awareness, treatment and control of hypertension in four Middle East countries 2017 J Hypertens DOI:10.1097/HJH.0000000000001326
## Cardiovascular drug use after AMI in Abu Dhabi and Sweden

<table>
<thead>
<tr>
<th></th>
<th>Abu Dhabi, crude N=1333</th>
<th>Abu Dhabi, standardized</th>
<th>Sweden, crude N=19312</th>
<th>Sweden, standardized</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Month 0-3</td>
<td>Month 10-12</td>
<td>Month 0-3</td>
<td>Month 10-12</td>
</tr>
<tr>
<td>Antihypertensive %</td>
<td>75</td>
<td>38</td>
<td>75</td>
<td>36</td>
</tr>
<tr>
<td>ACE-I/ARB, %</td>
<td>56</td>
<td>28</td>
<td>56</td>
<td>28</td>
</tr>
<tr>
<td>Beta-blockers, %</td>
<td>65</td>
<td>29</td>
<td>64</td>
<td>28</td>
</tr>
<tr>
<td>Lipid-lowering, %</td>
<td>72</td>
<td>35</td>
<td>72</td>
<td>34</td>
</tr>
<tr>
<td>Platelet inhibitors, %</td>
<td>76</td>
<td>35</td>
<td>76</td>
<td>34</td>
</tr>
</tbody>
</table>

Challenges in prevention

• Young population with large amount of risk factors and premature mortality and morbidity.
• Monitoring the “risk factors, awareness, treatment and control rates” nationally.
• Screening and treatment especially in the young and men.
• Systems for screening and treatments need to incorporate innovation & best practices.
• We as cardiologist/scientific societies have an important role to play.
Thank you
References

• WHO Global Schools Health Survey UAE 2005 and 2010.
• Yusufali et al. 2017 J Hypertens DOI:10.1097/HJH.0000000000001326