Frequency and distribution of cardiometabolic comorbidities in clinically stable HIV patients on long-term ARV therapy, Lima, Peru

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Background
• As access to HAART increases globally, the proportion of chronically treated, clinically stable HIV patients also grows.
• The aim of this study was to describe the differences in the presentation of the most common comorbidities observed in a population of clinically stable, successfully treated HIV infected adults in a country of limited resources.

Methods
• Medical records were reviewed at 5 HIV clinics in Lima-Callao, Peru, for HIV-infected adults attending regular follow up visits in January or February 2016.
• Patients were adult (>21 yrs.) outpatients on HIV therapy for > 6 months, with no current or recent (within last 6 months) AIDS-defining condition.
• Data collected included epidemiological, clinical and laboratory information.

Results
• 305 cases were identified that met inclusion criteria.
• Patients were mostly male (73.1%), with a median age of 46.0 years (yrs), an average time from diagnosis of 9.41 yrs, and an average time on HAART of 7.78 yrs.
• Most patients were on an NNRTI-based first line regimen (76.4%). INSTIs were used in only 2.2%.
• Median CD4 count was 614.2 cells/µL and 90.8% (n=277) had undetectable viral load.
• Cardiometabolic comorbidities presented different associations with gender, age, drugs classes and length of treatment:
  • Excess weight and obesity were highly frequent at 41.1%, and 11.1%, respectively. They did not associate with gender, age, duration or type of ART, possibly reflecting clinical stability and lifestyle.
  • Dyslipidemia, hypertension and diabetes mellitus were associated with older age (see Table, * indicates p = 0.05) and longer duration of ART (* indicates p = 0.06 - 0.07).
  • Cardiovascular disease was observed in a low number of individuals (n=10, 3.3%) precluding further analysis.
• Gender and type of ART (NNRTI- vs. PI-based) did not present differences for distribution of comorbidities.

Table. Frequency and distribution of cardiometabolic comorbidities according to gender, age group, type and duration of ART

<table>
<thead>
<tr>
<th></th>
<th>Total (n=305)</th>
<th>Men (n=223)</th>
<th>Women (n=82)</th>
<th>&lt; 50 yrs (n=194)</th>
<th>≥ 50 yrs (n=111)</th>
<th>NNRTI-based (n=233)</th>
<th>PI-based (n=28)</th>
<th>&lt;5yrs (n=89)</th>
<th>≥ 5 yrs (n=216)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dyslipidemia (n, %)</td>
<td>157, 51.5</td>
<td>111, 49.8</td>
<td>46, 56.1</td>
<td>89, 45.9 *</td>
<td>68, 61.2 *</td>
<td>122, 52.4</td>
<td>15, 55.6</td>
<td>39, 43.8 *</td>
<td>111, 54.6 *</td>
</tr>
<tr>
<td>Obesity (n, %)</td>
<td>34, 11.1</td>
<td>25, 11.2</td>
<td>9, 11.0</td>
<td>22, 11.3</td>
<td>12, 10.8</td>
<td>24, 10.3</td>
<td>3, 10.7</td>
<td>12, 13.5</td>
<td>22, 10.2</td>
</tr>
<tr>
<td>Excess weight (n, %)</td>
<td>127, 41.6</td>
<td>99, 44.4</td>
<td>28, 34.1</td>
<td>76, 39.2</td>
<td>51, 45.9</td>
<td>102, 43.8</td>
<td>12, 42.9</td>
<td>36, 40.5</td>
<td>91, 42.1</td>
</tr>
<tr>
<td>Diabetes mellitus (n, %)</td>
<td>22, 7.2</td>
<td>15, 6.7</td>
<td>7, 8.5</td>
<td>4, 2.0 *</td>
<td>18, 16.2 *</td>
<td>19, 8.2</td>
<td>1, 3.6</td>
<td>3, 3.4 *</td>
<td>19, 8.8 *</td>
</tr>
<tr>
<td>Hypertension (n, %)</td>
<td>27, 8.9</td>
<td>21, 9.4</td>
<td>6, 7.3</td>
<td>6, 3.1 *</td>
<td>21, 19.9 *</td>
<td>23, 9.9</td>
<td>0</td>
<td>4, 4.5 *</td>
<td>23, 10.6 *</td>
</tr>
<tr>
<td>Cardiovascular disease (n, %)</td>
<td>10, 3.3</td>
<td>6, 2.7</td>
<td>4, 4.9</td>
<td>4, 2.1</td>
<td>6, 5.4</td>
<td>6, 2.6</td>
<td>2, 7.1</td>
<td>1, 11.0</td>
<td>9, 4.2</td>
</tr>
</tbody>
</table>

Conclusions
A population of clinically stable HIV infected adult outpatients on long-term HAART showed differences in the distribution of cardiometabolic comorbidities:
• Excess weight and obesity were highly frequent with no association with the variables analyzed.
• Dyslipidemia, diabetes mellitus and hypertension were associated with older age and longer duration of ART.
• Cardiovascular disease was clinically apparent in a small proportion of our population.

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