HIV/HBV coinfection in Spain: Prevalence and clinical characteristics

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Background

• In HIV infected patients, coinfection with HBV has been associated with increased levels of HBV DNA, accelerated progression of liver disease and increased all-cause and liver-related mortality.

• Rates of chronic HBV in HIV infected individuals vary significantly between regions and risk-based groups, reflecting different patterns of transmission and immunization coverage.

• We assessed the prevalence of HIV/HBV coinfection in Spain in 2018 and compared the results with similar studies performed in 2002, 2009, 2015, 2016, and 2017.

1 Thornton, A.C., et al., AIDS, 2017. 31: 2525-2532
2 Singh, K.P. Et al., AIDS, 2017: 31: 2035-2052
**Methods**

<table>
<thead>
<tr>
<th>Design</th>
<th>Nationwide prevalence study of HIV/HCV and HIV/HBV coinfections</th>
</tr>
</thead>
<tbody>
<tr>
<td>Study period</td>
<td>October-November 2018</td>
</tr>
<tr>
<td>Reference population</td>
<td>All HIV+ patients in active follow-up in the participating centers*</td>
</tr>
<tr>
<td>Sample size estimation</td>
<td>The sample size was estimated to assess the prevalence of HCV with a confidence level 95% / Design effect 1.0 / Accuracy of 1.25%. The accuracy for estimation of the prevalence of HBsAg was 0.8%.</td>
</tr>
<tr>
<td>Patient selection</td>
<td>Nº of patients from each hospital determined by proportional allocation</td>
</tr>
<tr>
<td></td>
<td>Patients were selected using simple random sampling</td>
</tr>
<tr>
<td>Data capture</td>
<td>Online case report form</td>
</tr>
<tr>
<td>Ethical issues</td>
<td>The Ethics Committee of HGUGM# approved the study</td>
</tr>
</tbody>
</table>

*Active follow-up = at least 1 visit in the previous 12 months
# Hospital General Universitario Gregorio Marañón
# GeSIDA Prevalence Studies (2002-2018)

<table>
<thead>
<tr>
<th></th>
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<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Participating centers</td>
<td>39</td>
<td>43</td>
<td>41</td>
<td>43</td>
<td>43</td>
<td>43</td>
</tr>
<tr>
<td>Reference population</td>
<td>31,800</td>
<td>29,559</td>
<td>35,791</td>
<td>38,904</td>
<td>40,322</td>
<td>40,650</td>
</tr>
<tr>
<td>Sample size</td>
<td>1,260</td>
<td>1,458</td>
<td>1,867</td>
<td>1,588</td>
<td>1,690</td>
<td>1,733</td>
</tr>
<tr>
<td>Tested for HBsAg</td>
<td>92.7%</td>
<td>97.7%</td>
<td>97.1%</td>
<td>97.5%</td>
<td>96.2%</td>
<td>96.5%</td>
</tr>
<tr>
<td>Tested for HCV antibodies</td>
<td>99.5%</td>
<td>99.8%</td>
<td>98.7%</td>
<td>99.8%</td>
<td>99.1%</td>
<td>99.3%</td>
</tr>
</tbody>
</table>

Prevalence of HBsAg+ among HIV-infected subjects

% of patients

Year

HIV/HBV coinfection in Spain - 2018

## Demographics and HIV-related variables

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>HBsAg Unknown</th>
<th>HBsAg Positive</th>
<th>HBsAg Negative</th>
<th>Total N = 1,733</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>N = 60 (3.5)</td>
<td>N = 54 (3.1)</td>
<td>N = 1,619 (93.4)</td>
<td></td>
</tr>
<tr>
<td>Male sex, n (%)</td>
<td>44 (73.3)</td>
<td>44 (81.5)</td>
<td>1,202 (74.2)</td>
<td>1,290 (74.4)</td>
</tr>
<tr>
<td>Age years, mean (SD)</td>
<td>51 (10)</td>
<td>50 (11)</td>
<td>49 (11)</td>
<td>49 (11)</td>
</tr>
<tr>
<td>HIV transmission category, n (%)</td>
<td></td>
<td></td>
<td></td>
<td>.174</td>
</tr>
<tr>
<td>Injection drug use</td>
<td>19 (31.7)</td>
<td>21 (38.9)</td>
<td>455 (28.1)</td>
<td>495 (28.6)</td>
</tr>
<tr>
<td>Heterosexual</td>
<td>15 (25.0)</td>
<td>8 (14.8)</td>
<td>440 (27.2)</td>
<td>463 (26.7)</td>
</tr>
<tr>
<td>Male sex with male</td>
<td>7 (11.7)</td>
<td>21 (38.9)</td>
<td>603 (37.2)</td>
<td>631 (36.4)</td>
</tr>
<tr>
<td>Mother to child transmission</td>
<td>0</td>
<td>1 (1.8)</td>
<td>12 (0.7)</td>
<td>13 (0.7)</td>
</tr>
<tr>
<td>Other</td>
<td>19 (31.7)</td>
<td>2 (3.7)</td>
<td>99 (6.1)</td>
<td>120 (6.9)</td>
</tr>
<tr>
<td>CDC clinical category C, n (%)</td>
<td>13 (21.7)</td>
<td>15 (27.8)</td>
<td>419 (25.9)</td>
<td>447 (25.8)</td>
</tr>
<tr>
<td>Patients on cART, n (%)</td>
<td>60 (100)</td>
<td>52 (96.3)</td>
<td>1587 (98.0)</td>
<td>1699 (98.0)</td>
</tr>
<tr>
<td>HIV RNA &lt; 50 copies/ml, n (%)</td>
<td>52 (86.7)</td>
<td>50 (96.1)</td>
<td>1478 (93.1)</td>
<td>1580 (93.0)</td>
</tr>
<tr>
<td>CD4+ – T cells/μL, median (IQR)</td>
<td>598 (410-951)</td>
<td>637 (343-836)</td>
<td>698 (480-919)</td>
<td>695 (471-915)</td>
</tr>
</tbody>
</table>

*P*-values for the comparisons between HBsAg-positive patients and HBsAg-negative patients

## Liver-disease related variables

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>HBsAg</th>
<th>Total</th>
<th>( P^* )</th>
<th>( N = 1,733 )</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Unknown</td>
<td>Positive</td>
<td>Negative</td>
<td></td>
</tr>
<tr>
<td></td>
<td>N = 60 (3.5)</td>
<td>N = 54 (3.1)</td>
<td>N = 1,619 (93.4)</td>
<td></td>
</tr>
<tr>
<td>HCV antibodies, n (%)</td>
<td>26 (43.3)</td>
<td>22 (40.7)</td>
<td>530 (32.7)</td>
<td>.445</td>
</tr>
<tr>
<td>HCV RNA, n (%)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Positive</td>
<td>4 (15.4)</td>
<td>3 (13.6)</td>
<td>59 (11.1)</td>
<td>&lt;.001</td>
</tr>
<tr>
<td>Negative post Rx</td>
<td>20 (76.9)</td>
<td>7 (31.8)</td>
<td>380 (71.7)</td>
<td></td>
</tr>
<tr>
<td>Negative spontaneous clearance</td>
<td>2 (7.7)</td>
<td>12 (54.5)</td>
<td>90 (17.0)</td>
<td></td>
</tr>
<tr>
<td>Unknown</td>
<td>0</td>
<td>0</td>
<td>1 (0.2)</td>
<td></td>
</tr>
<tr>
<td>eGFR CKDEPI, median (IQR)</td>
<td>97.6 (77.3-104.3)</td>
<td>93.6 (79.0-103.3)</td>
<td>92.2 (78.4-103.2)</td>
<td>.989</td>
</tr>
</tbody>
</table>

*\( P^* \)-values for the comparisons between HBsAg-positive patients and HBsAg-negative patients

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Liver stiffness (kPa) in 30 (55.5%) out of 54 patients HBsAg+.

F0-F2: <7.6 - 66.7%
F3: 7.6 - 9.3 - 16.7%
F4: ≥ 9.4 - 16.7%

Anti-HBV therapy in 54 patients HBsAg positive

All patients received at least one drug with anti-HBV activity
HBV-DNA in 54 patients HBsAg positive
Percentage of those tested in the prior 12 mo.

HDV-Ab in 54 patients HBsAg positive

Percentage of those ever tested

HDV-Ab

- Known: 70.4%
- Unknown: 29.6%

Positive: 26.3%
Negative: 73.7%

Conclusions

1. The prevalence of HIV/HBV coinfection in Spain at the end of 2018 was 3.2%.

2. This prevalence does not differ significantly from those reported in studies performed over the last 15 years.

3. All HIV/HBV coinfected patients were on anti-HBV drugs, and most had full suppression of HBV-DNA.

4. Liver cirrhosis and HDV infection were identified as common problems among HIV/HBV-coinfected patients.