Prevalence of HCV-HIV co-infection among mothers of newborn babies

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Secretariat of the National Plan on AIDS
National Center of Epidemiology
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Overview

• Background
• HIV epidemic in Spain
  - Transmission patterns
  - Overlap with HCV
• Unlinked Anonymous Testing (UAT)
  - Methodology
  - Results 1998-2005
    • HIV prevalence
    • Prevalence of HCV-HIV co-infection

• Conclusions
AIDS cases per million population in selected countries, 1986-2004, western Europe

Year of diagnosis

Cases per million

Spain
Italy
France
United Kingdom
Germany

Data adjusted for reporting delays
New annual AIDS cases by transmission category, adjusted for reporting delay. National AIDS Register. Updated June 30th, 2006
AIDS cases diagnosed in 2005, by sex and transmission category.
National AIDS Register. Updated June 30th, 2006

Men (n = 1134)
- Hetero. 23.9%
- MTCT 0.2%
- Trans/hem 0.3%
- Homosex. 19.8%
- Otros/desc 5.1%
- IDU 50.7%

Women (n = 345)
- Hetero. 53.9%
- MTCT 1.2%
- Other 7.8%
- IDU 36.8%
- Trans/Hem 0.3%
- Homosex. 53.9%
- Otros/desc 7.8%
- IDU 36.8%
New HIV diagnosis by transmission category
Data from 7 AARR (2001-2004)

- Data: Canary Islands, Catalonia, Ceuta, Navarra, Basque Country, Extremadura and La Rioja
No. of AIDS cases due to mother-to-child transmission, adjusted by reporting delay
National AIDS Register. Update at June 30th, 2006
Natural History of HCV infection

- **PrimoInfection**
  - 20-50%

- **Clearance**
  - 50-80% Chronic Hepatitis

- **Free of Disease**

- **Cirrhosis** 20%

- **Acute Hepatitis**
  - 80% Asymptomatic

- **Hepatocellular Carcinoma** 1.5%

- **Time**
Hospital Discharge Diagnosis among deceased HIV/AIDS patients, 1999-2002

χ² test for trend: p<0.05

Hospitalisations (N, %) due to viral hepatitis among HIV/AIDS patients, 1999-2002

<table>
<thead>
<tr>
<th></th>
<th>1999 N(%)</th>
<th>2000 N(%)</th>
<th>2001 N(%)</th>
<th>2002 N(%)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Hepatitis C</strong>*</td>
<td>3.733 (17,6)</td>
<td>4.321 (21,0)</td>
<td>4.916 (24,6)</td>
<td>5.211 (26,3)</td>
</tr>
<tr>
<td><strong>Hepatitis B</strong></td>
<td>771 (3,6)</td>
<td>830 (4,0)</td>
<td>814 (4,1)</td>
<td>790 (4,0)</td>
</tr>
<tr>
<td><strong>Other viral hepatitis</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hepatitis A</td>
<td>12 (0,1)</td>
<td>12 (0,1)</td>
<td>4 (0)</td>
<td>16 (0,1)</td>
</tr>
<tr>
<td>Hepatitis Delta (wth hep B)</td>
<td>14 (0,1)</td>
<td>15 (0,1)</td>
<td>20 (0,1)</td>
<td>16 (0,1)</td>
</tr>
<tr>
<td>Hepatitis E</td>
<td>5 (0)</td>
<td>4 (0)</td>
<td>3 (0)</td>
<td>1 (0)</td>
</tr>
<tr>
<td>Other</td>
<td>17 (0,1)</td>
<td>14 (0,1)</td>
<td>17 (0,1)</td>
<td>6 (0,1)</td>
</tr>
</tbody>
</table>

§ A patient can have more than one diagnosis

*p<0.05 en χ2 test for trnd

Source: CMBD
Hospitalisations (%) due to acute/chronic Hepatitis § B or C among HIV/AIDS patients. 1999-2002

§ A patient can have more than one diagnosis
p: χ² test for trnd

Source: CMBD
To sum up....

- High HIV/AIDS incidence in Spain. Many years, highest in Western Europe
- Mature concentrated epidemic
- Intravenous drug users (IDU), most commonly represented transmission category, but epidemic pattern has changed recently
- IDUs also at high risk for HCV
- Need to prevent HIV and HCV MTCT
- Need to establish information systems to know HIV & HIV-HCV prevalence in “general population”
Distribution of HIV & HCV infection in the Spanish population

HIV Prev: 0,3% (30-70% co-infected with HCV)

HCV Prev: 1,5 - 2,5%

Prev HIV-HCV: ??

VIH/VHC

Wordwide Prev HCV: 3%

Source: WHO
Unlinked Anonymous Testing in newborn babies

- Epidemiological information system
- Initiated in 1998
- Setting: 8 Autonomous Regions
- Residual dried blood spots samples from routine neonatal screening
- Unlinked for identifiers
- Tested anonymously for HIV. All HIV-positive samples tested for Anti-HVC
Methodology - Dried blood samples

Type 1

Type 2
Objetives

• To estimate prevalence of HIV infection in mothers of newborn babies

• To estimate prevalence of HIV-HCV co-infection in mothers of newborn babies
## UAT Results, 2004 (7 AR)

<table>
<thead>
<tr>
<th>Autonomous Regions</th>
<th>Blood Samples No. Tested</th>
<th>HIV(+) HIV(+) /1000 women (IC95%)</th>
<th>Anti-HCV in HIV(+) Anti-HCV (%) (IC95%)</th>
<th>Proportion HIV-HVC+/HIV+</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>C Anary Islands</strong></td>
<td>9,309</td>
<td>2,15 (1,31-3,32)</td>
<td>4 (0,43 (0,12-1,10)</td>
<td>20,00</td>
</tr>
<tr>
<td><strong>Castille- León</strong></td>
<td>19,750</td>
<td>1,11 (0,70-1,69)</td>
<td>8 (0,41 (0,17-0,80)</td>
<td>36,36</td>
</tr>
<tr>
<td><strong>Castille-La Mancha</strong></td>
<td>6,981</td>
<td>0,86 (0,32-1,87)</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td><strong>Galice</strong></td>
<td>17,658</td>
<td>1,70 (1,15-2,42)</td>
<td>11 (0,62 (0,31-1,11)</td>
<td>37,93</td>
</tr>
<tr>
<td><strong>Melilla</strong></td>
<td>1,356</td>
<td>0,74 (0,02-4,10)</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td><strong>Murcia</strong></td>
<td>16,191</td>
<td>0,80 (0,43-1,37)</td>
<td>4 (0,25 (0,07-0,63)</td>
<td>36,36</td>
</tr>
<tr>
<td><strong>C. Valenciana</strong></td>
<td>18,747</td>
<td>1,81 (1,45-2,22)</td>
<td>18 (0,37 (0,22-0,58)</td>
<td>21,69</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>119,992</td>
<td>1,50 (1,29-1,74)</td>
<td>45 (0,38 (0,27-0,50)</td>
<td>26,47</td>
</tr>
</tbody>
</table>
## Results. Period 1998-2004 (5 AR)

<table>
<thead>
<tr>
<th>Autonomous Regions</th>
<th>Number Tested</th>
<th>Prev. HIV +/1000 (IC95%)</th>
<th>HCV + (n)</th>
<th>Prev. HIV-HVC +/1000 (IC95%)</th>
<th>Proportion HIV-HVC+/HIV+</th>
</tr>
</thead>
<tbody>
<tr>
<td>CANARY ISLANDS</td>
<td>102,743</td>
<td>1.59 (1.35-1.85)</td>
<td>49</td>
<td>0.48 (0.35-0.63)</td>
<td>31.61</td>
</tr>
<tr>
<td>CASTILLE-LEON</td>
<td>106,662</td>
<td>1.30 (1.10-1.54)</td>
<td>50</td>
<td>0.47 (0.35-0.62)</td>
<td>42.74</td>
</tr>
<tr>
<td>GALICE</td>
<td>125,984</td>
<td>1.56 (1.35-1.80)</td>
<td>88</td>
<td>0.70 (0.56-0.86)</td>
<td>45.83</td>
</tr>
<tr>
<td>MELILLA</td>
<td>7,468</td>
<td>0.94 (0.38-1.93)</td>
<td>1</td>
<td>0.13 (0.00-0.75)</td>
<td>14.29</td>
</tr>
<tr>
<td>MURCIA</td>
<td>101,635</td>
<td>1.10 (0.91-1.93)</td>
<td>34</td>
<td>0.33 (0.23-0.47)</td>
<td>37.36</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td><strong>444,492</strong></td>
<td><strong>1.39 (1.28-1.50)</strong></td>
<td><strong>222</strong></td>
<td><strong>0.50 (0.44-0.57)</strong></td>
<td><strong>39.50</strong></td>
</tr>
</tbody>
</table>

**HIV + (1998-2004):** 618  
**HCV tested HVC:** 562 (90.9%)
HIV(+) mothers. Proportion with Anti-HCV 1998-2004, 5 AARR

HIV + (1998-2004): 618
HCV tested HVC: 562 (90,9%)
HIV(+) mothers. Proportion with Anti-HCV by Autonomous Regions. 1998-2004

HIV + (1998-2004): 618
Tested HVC: 562 (90.9%)
Prevalence of de HIV and HIV-HCV co-infection per 1000 women (5 AARR)

Chi-Square of tendency: NS
Prevalence of HIV and HIV-HCV co-infection per 1000 women. Canary Islands

Chi-square of tendency prevalence HIV/HCV: NS
Prevalence of HIV and HIV-HCV co-infection per 1000 women. Castille-Leon

Chi- Square of tendency prevalence HIV/HCV and prevalence HIV: NS
Prevalence of HIV and HIV-HCV co-infection per 1000 women. Galice

Chi-Square of tendency prevalence HIV/HCV and prevalence HIV: NS
Prevalence of HIV and HIV-HCV co-infection per 1000 women. Murcia

Chi- Square of tendency prevalence HIV/HCV and prevalence HIV: NS
Conclusions

- UAT using residual dried blood spots samples from routine neonatal screening is feasible and cost-effective
- It provides important information on HIV infection and HCV-HIV co-infection trends, in “unselected” group of the Spanish population
- Prevalence of HIV-ACV is high in comparison with other European countries, and stable during 1998-2004
- HCV testing should always be done in HIV(+) pregnant women, as well as in all those with risk factors for HCV infection
- Challenges: a) extend the program to other AARR; b) add some important epidemiological variables