Hepatitis B virus infection in HIV-seronegative and HIV-seropositive MSM in West Africa

Prevalence, associated factors, and acceptability of vaccination (CohMSM ANRS 12324 – Expertise France)

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Nothing to disclose
Hepatitis B virus (HBV) infection

- Large health issue among **men who have sex with men** (MSM) throughout the world
  - High prevalences
    - 44% in Netherlands (*van Houdt R, J Hepatol, 2012*)
    - 19% in LA County (*Pitasi MA, AIDS Behav, 2014*)
  - High incidences
    - 9.6 per 1000 PYs [95% CI 8.5–11.0] in Kenya (*Falade-Nwulia O, Ann Intern Med, 2015*)
    - 20% of new cases of HBV infection in adults in the United States of America among gay and bisexual men (*CDC, 2013*)
  - Risks factors of acquiring sexually transmitted infections (STIs), including hepatitis B (*WHO, 2011*)
    - Context of violence
    - Conditions of sexual practices such as unprotected anal intercourse
    - Multiple sexual partners
    - Unsafe sexual practices
Hepatitis B virus (HBV) infection

- In **West Africa**
  - High prevalence in general population (>= 8%) (*Ott JJ, Vaccine, 2012*)
  - Limited data in MSM on HBV
  - Not enough programs tailored to MSM including HBV vaccination
Study objective

- To investigate in **HIV-seronegative** and **HIV-seropositive MSM** in 4 West African countries:
  - The **prevalence** of HBV infection
  - The **factors associated** with HBV infection
  - The acceptability of hepatitis B **vaccination**
Material and methods

• **Cross-sectional** study (at inclusion of a cohort started since June 2015 in community-based clinics)
  - Bamako (Mali)
  - Abidjan (Côte d’Ivoire)
  - Ouagadougou (Burkina Faso)
  - Lomé (Togo)

• **Inclusion criteria**
  - Men who reported at least 1 episode of anal intercourse with another man within the previous 3 months
  - Age ≥ 18 years old
  - HIV-seronegative or having discovered HIV infection at enrolment
Material and methods

• At enrolment, MSM were offered
  - Clinical examination
  - Testing for HIV, hepatitis B, hepatitis C, and syphilis
  - Pre- and post-test counseling
  - Free condoms and lubricants
  - Socio-behavioral questionnaire

• Hepatitis B vaccination in case of negativity for HBsAg and anti-HBs

• Identification of factors associated with HBV infection using logistic regression models
## Characteristics of the MSM screened for HBV (HBsAg)

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>Total (N=698)</th>
<th>Bamako (N=296)</th>
<th>Abidjan (N=144)</th>
<th>Ouagadougou (N=134)</th>
<th>Lomé (N=124)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>n (%)</td>
<td>n (%)</td>
<td>n (%)</td>
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<td>n (%)</td>
</tr>
<tr>
<td>Age (years) (median IQR)</td>
<td>23.8 (21.3-27.4)</td>
<td>23.5 (21.2-26.8)</td>
<td>24.5 (22.1-28.2)</td>
<td>23.6 (21.1-28.3)</td>
<td>24.1 (20.6-27.1)</td>
</tr>
<tr>
<td>HIV infection</td>
<td>124 (17.8%)</td>
<td>49 (16.6%)</td>
<td>33 (22.9%)</td>
<td>23 (17.2%)</td>
<td>19 (15.3%)</td>
</tr>
<tr>
<td>STIs</td>
<td>96 (13.8%)</td>
<td>21 (7.1%)</td>
<td>20 (13.9%)</td>
<td>45 (33.6%)</td>
<td>10 (8.1%)</td>
</tr>
<tr>
<td>Syphilis</td>
<td>9 (1.3%)</td>
<td>0 -</td>
<td>5 (3.5%)</td>
<td>3 (2.2%)</td>
<td>1 (0.8%)</td>
</tr>
<tr>
<td>Education level</td>
<td></td>
<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>Postgraduate</td>
<td>212 (36.7%)</td>
<td>71 (31.1%)</td>
<td>61 (46.9%)</td>
<td>38 (34.9%)</td>
<td>42 (37.8%)</td>
</tr>
<tr>
<td>Undergraduate or less</td>
<td>366 (63.3%)</td>
<td>157 (68.9%)</td>
<td>69 (53.1%)</td>
<td>71 (65.1%)</td>
<td>69 (62.2%)</td>
</tr>
<tr>
<td>Marital status</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Single, divorced, separated</td>
<td>71 (31.1%)</td>
<td>204 (89.5%)</td>
<td>66 (50.8%)</td>
<td>97 (89.0%)</td>
<td>104 (93.7%)</td>
</tr>
<tr>
<td>Married or free union</td>
<td>157 (68.9%)</td>
<td>24 (10.5%)</td>
<td>64 (49.2%)</td>
<td>12 (11.0%)</td>
<td>7 (10.3%)</td>
</tr>
</tbody>
</table>
HBV prevalence

HBV prevalence in HIV-seronegative MSM
HBV prevalence in HIV-seropositive MSM
All MSM

HBV prevalence in HIV-seronegative MSM
HBV prevalence in HIV-seropositive MSM
All MSM
Multivariate logistic regression model of factors associated with HBV infection

<table>
<thead>
<tr>
<th></th>
<th>aOR</th>
<th>(95 % CI)</th>
<th>P value</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>City</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Abidjan</td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ouagadougou</td>
<td>0.39</td>
<td>(0.17-0.87)</td>
<td>0.021</td>
</tr>
<tr>
<td>Lomé</td>
<td>0.06</td>
<td>(0.02-0.15)</td>
<td>0.000</td>
</tr>
<tr>
<td>Bamako</td>
<td>0.46</td>
<td>(0.23-0.92)</td>
<td>0.029</td>
</tr>
<tr>
<td><strong>HIV infection</strong></td>
<td>1.40</td>
<td>(0.72-2.71)</td>
<td>0.324</td>
</tr>
<tr>
<td><strong>Education level</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Postgraduate</td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Undergraduate or less</td>
<td>1.50</td>
<td>(1.10-2.05)</td>
<td>0.011</td>
</tr>
<tr>
<td><strong>Marital status</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Single, divorced or separated</td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Married or free union</td>
<td>0.31</td>
<td>(0.13-0.75)</td>
<td>0.009</td>
</tr>
<tr>
<td><strong>Sex with male sex workers within the previous six months</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Never</td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sometimes, always</td>
<td>2.61</td>
<td>(1.31-5.19)</td>
<td>0.006</td>
</tr>
<tr>
<td><strong>Self-definition of sexual orientation</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bisexual</td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other</td>
<td>1.41</td>
<td>(1.08-1.85)</td>
<td>0.013</td>
</tr>
</tbody>
</table>
Acceptability of hepatitis B vaccination

- Hepatitis B vaccination
  - 485 participants were eligible (HBsAg and anti-HBs negative)
  - 447 of them received at least one dose of vaccination = 92.2\% (95\% CI 89.8–94.6)
Conclusion

• High HBV prevalence in MSM living in Abidjan, Bamako, and Ouagadougou

• No association with HIV infection

• Good acceptance of vaccination

• Programs tailored to MSM should include HBV testing and vaccination
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