Concurrent transmission of HCV and bacterial STI in HIV-infected MSM

Ngai Sze Wong¹, Bonnie CK Wong², Denise PC Chan¹, Dachao Liang¹, Shui Shan Lee¹

¹Stanley Ho Centre for Emerging Infectious Diseases, The Chinese University of Hong Kong, Hong Kong
²Special Preventive Programme, Centre for Health Protection, Department of Health, Hong Kong Special Administrative Region Government, Hong Kong

Background
Sexual transmission of hepatitis C virus (HCV) has often been considered to be less efficient than that of other bacterial STI. However, epidemics of sexually acquired HCV infection have been reported internationally in the recent years among HIV positive MSM. In this connection the epidemiologic associations of concurrent transmission of HCV and other bacterial STI have yet to be determined.

Materials and Methods
Data: clinical data and blood samples of HIV positive patients diagnosed with acute HCV infection were collected from a major HIV specialist clinic (Integrated Treatment Centre) in Hong Kong.

Definitions:
Acute HCV infection: HCV antibody seroconversion, or interval ≤12 months between one’s last HCV negative and first HCV positive test result.
Concurrent STI (outcome variable): the diagnosis of syphilis, gonorrhea and/or chlamydia within 1 year of HCV diagnosis

Data analysis:
HCV genotyping (NS5B region) was performed on HCV RNA+ samples. HIV/HCV co-infected patients with and without concurrent STI were compared in logistic regression models and Mann-Whitney U

Conclusions
Chemfun were not uncommon among HIV+ MSM. The clustering of HCV genotype 3a reflected the networking of risk-taking MSM underlining concurrent transmission of HCV and syphilis.

Results
Between 2004 and 2017, a total of 79 HIV patients were diagnosed with sexually acquired acute HCV infection. All were male, 75 were Chinese, and 78 were MSM.

58 (74%) of patients had concurrent STI, of whom 30% had recreational drug use (chemfun) habit
- 53 (90%) with syphilis only,
- 1 (2%) with chlamydia only,
- 1 (1%) with chlamydia and gonorrhea, 2 (3%) with chlamydia and syphilis, 2 (3%) with syphilis, gonorrhea and chlamydia

Table 1 Comparison patients without (n=20) and with (n=58) concurrent STI

<table>
<thead>
<tr>
<th></th>
<th>no concurrent STI</th>
<th>concurrent STI</th>
<th>OR</th>
<th>95% C.I.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ethnicity</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>n</td>
<td>%</td>
<td>n</td>
<td>%</td>
</tr>
<tr>
<td>non-Chinese</td>
<td>2</td>
<td>10%</td>
<td>2</td>
<td>3%</td>
</tr>
<tr>
<td>Chinese</td>
<td>18</td>
<td>90%</td>
<td>56</td>
<td>97%</td>
</tr>
<tr>
<td>HIV</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>HIV subtype</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>07_BC</td>
<td>1</td>
<td>8%</td>
<td>0</td>
<td>0%</td>
</tr>
<tr>
<td>AE</td>
<td>3</td>
<td>23%</td>
<td>9</td>
<td>29%</td>
</tr>
<tr>
<td>B</td>
<td>9</td>
<td>69%</td>
<td>22</td>
<td>71%</td>
</tr>
<tr>
<td>Median HIV dx year, IQR</td>
<td>2009</td>
<td>2001-2012</td>
<td>2013</td>
<td>2007-2015</td>
</tr>
<tr>
<td>Median HIV age, IQR</td>
<td>30</td>
<td>24-40</td>
<td>29</td>
<td>25-35</td>
</tr>
<tr>
<td>on HAART</td>
<td>100%</td>
<td>56</td>
<td>95%</td>
<td></td>
</tr>
<tr>
<td>Median HAART yr, IQR</td>
<td>2012</td>
<td>2002-2014</td>
<td>2013</td>
<td>2010-2015</td>
</tr>
<tr>
<td>HCV</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>HCV subtype</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>n</td>
<td>%</td>
<td>n</td>
<td>%</td>
</tr>
<tr>
<td>non-3a</td>
<td>7</td>
<td>47%</td>
<td>9</td>
<td>20%</td>
</tr>
<tr>
<td>3a</td>
<td>8</td>
<td>53%</td>
<td>36</td>
<td>80%</td>
</tr>
<tr>
<td>Median HCV dx year, IQR</td>
<td>2014</td>
<td>2012-2016</td>
<td>2015</td>
<td>2014-2016</td>
</tr>
<tr>
<td>Median HCV age, IQR</td>
<td>38</td>
<td>31-46</td>
<td>35</td>
<td>28-41</td>
</tr>
<tr>
<td>Median years from HIV dx to HCV dx, IQR</td>
<td>3</td>
<td>1-13</td>
<td>1</td>
<td>1-7</td>
</tr>
<tr>
<td>Median years from HAART to HCV dx, IQR</td>
<td>1</td>
<td>1-9</td>
<td>1</td>
<td>0-3</td>
</tr>
<tr>
<td>HCV cluster</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1a</td>
<td>1</td>
<td>5%</td>
<td>4</td>
<td>7%</td>
</tr>
<tr>
<td>3a</td>
<td>8</td>
<td>40%</td>
<td>33</td>
<td>56%</td>
</tr>
<tr>
<td>NA</td>
<td>11</td>
<td>55%</td>
<td>22</td>
<td>37%</td>
</tr>
<tr>
<td>History of recreational drug use</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No</td>
<td>13</td>
<td>76%</td>
<td>37</td>
<td>69%</td>
</tr>
<tr>
<td>Yes</td>
<td>4</td>
<td>24%</td>
<td>17</td>
<td>31%</td>
</tr>
</tbody>
</table>

*p<0.05

Acknowledgements
This study was supported by the Health and Medical Research Fund (ref. no: CU-15-C6) of Food and Health Bureau of the Hong Kong Special Administrative Region Government. Technical support from Li Ka Shing Institute of Health Sciences is thanked.

Presented at HIV Glasgow 2018
28 – 31 October 2018, Glasgow