INTRODUCTION

Sexually transmitted diseases (STD) are public health concerns worldwide. The coexistence of two or more STD changes the natural course of each infection alone [1] or worsen the issue of the diseases [2]. It is hypothesized that the coinfection of STDs exists in Madagascar it is not well documented. Men having sex with men (MSM) contribute to the widespread of these viruses [3]. The HIV infection worsens the prognosis of hepatic diseases which are linked with HCV and HBV or with syphilis which alter the health of those MSM if the coinfection is not diagnosed as soon as possible.

The aim of our study is to assess infection and coinfection with HIV, hepatitis B, hepatitis C and syphilis among men having sex with men in Mahajanga which is a western coastal town of Madagascar. We conducted a prospective and descriptive preliminary study in the laboratory of the University Hospital Center PZAGA in Mahajanga during a period of three months, from December 2014 to February 2015. We included 100 MSM in our study. Their mean age was 36 yrs (16 to 55 yrs). We found 30% of seropositive men among our sample. HIV positive men are mainly part of the age group [20–29 yrs]. The mean age of positive men was respectively 38 yrs., 36 yrs., 48 yrs. and 39 yrs. for HIV, for HBV, HCV, and syphilis. We found respectively for hepatitis B, hepatitis C and syphilis 7%, 1% and 11% positive samples. We found no co-infection HIV and HCV for them. But we found 5% of coinfection HIV-HBV, 4% of coinfection HIV-syphilis and 1% of coinfection of HIV, HBV and syphilis. We highlighted a very high rate of HIV positivity among MSM living in Mahajanga. Efforts have to be made in order to sensitize them about risky behaviors.

MATERIAL AND METHODOLOGY

Study design: A prospective and descriptive study.

Study place: The University Hospital Center PZAGA in Mahajanga during a period of three months, from December 2014 to February 2015.

Ethical approval: We performed analysis for blood from MSM in Mahajanga after their consent. Inform consent was obtained for each MSM, and those who didn’t want to participate were excluded.

Inclusion criteria: All MSM who accepted to participate at this study without exception.

Exclusion criteria: Those who didn’t know their HIV status were excluded too, because HIV testing is volunteer in Madagascar and the law didn’t allow us to check the HIV status of someone who didn’t want it.

Same size: 100 samples

Methodology:

Five milliliters of blood were collected in dry Vacutainer tube by venipuncture of the forearm at the healthcare center of Mahabibo, located at the center of Mahajanga. Sera was collected after centrifuged, then sera were frozen at -20°C until the serological testing was performed. As we sought to assess the coexistence of all STDs.

Data privacy was respected, and all data were encoded before their treatment. As this study is part of routine surveillance of the Ministry of Health, the current protocol didn’t include the sociodemographic characteristic of each one. All STDs screening for our study were performed with RDTs.

Madagascar is now applying the W.H.O. strategy about HIV testing with RDT. The screening is done with...
Determine HIV 1/2 (Alere Abbott Japan) which has a sensitivity of 100% [4]. Any positive result with Determine has been confirmed with Retrocheck test (Qualpro Diagnostics India) which has a specificity of 98%, and with Unigold test HIV1/2 (Trinity Biotech Irlande) which has a sensitivity of 100% and a specificity of 100% [5], but Unigold test HIV1/2 RDT is used only for its discriminant role.

We used for hepatitis B screening the Virucheck HBsAg RDT (Orchid Biomedical System, India) which has a sensitivity of 95.6% and a specificity of 98.2% [6].

The screening for hepatitis C infection was done with the OnSite HCV Ab Plus Combo Rapid test (CTK Biotech USA), which has a sensitivity of 84.72% and a specificity of 100% [7].

We used the SD BIOLINE Syphilis (SD Bio-standard Diagnostics Private Limited) test, which has a sensitivity of 79% and a specificity of 96% [6].

Each test was performed according to the recommendation of the manufacturer. The test was considered valid when the control line appeared. The test was considered positive for HIV when all three serial tests were positive. For other tests, they were considered positive if both line test and control appeared.

RESULTS

We included 100 MSM in our study. Their mean age was 36 yrs (16 to 55 yrs). We found 30% of seropositive men among our sample. HIV positive men are mainly part of the age group (20–29 yrs). We found respectively for hepatitis B, hepatitis C and syphilis 7%, 1% and 11% positive samples.

Table 1: Age of MSM infected by HIV, or HBV, or HCV

<table>
<thead>
<tr>
<th>Age</th>
<th>0-20</th>
<th>21-30</th>
<th>31-40</th>
<th>41-50</th>
<th>&gt; 50</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>HIV Infection</td>
<td>-</td>
<td>18</td>
<td>5</td>
<td>5</td>
<td>2</td>
<td>30</td>
</tr>
<tr>
<td>HBV Infection</td>
<td>1</td>
<td>4</td>
<td>1</td>
<td>-</td>
<td>1</td>
<td>07</td>
</tr>
<tr>
<td>HCV Infection</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>1</td>
<td>-</td>
<td>01</td>
</tr>
<tr>
<td>Syphilis</td>
<td>1</td>
<td>2</td>
<td>2</td>
<td>4</td>
<td>2</td>
<td>11</td>
</tr>
<tr>
<td>HIV-HBV Co-infection</td>
<td>-</td>
<td>3</td>
<td>1</td>
<td>-</td>
<td>1</td>
<td>05</td>
</tr>
<tr>
<td>HIV-HCV Co-infection</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>HIV-Syphilis Co-infection</td>
<td>-</td>
<td>1</td>
<td>-</td>
<td>1</td>
<td>2</td>
<td>04</td>
</tr>
<tr>
<td>HIV-HBV-syphilis Co-infection</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>1</td>
<td>01</td>
</tr>
</tbody>
</table>

The mean age of positive men were respectively 38 yrs., 36 yrs., 48 yrs. and 39 yrs. for HIV, for HBV, HCV, and syphilis. We found no co-infection HIV and HCV for them. But we found 5% of coinfection HIV-HBV, 4% of coinfection HIV-syphilis, and 1% of coinfection of HIV, HBV, and syphilis.

DISCUSSION

HIV epidemic is only focused on some key groups in Madagascar because HIV seroprevalence is only 0.2% among the general population [8]. The same fact is seen worldwide [9, 10, 11]. Unfortunately, this seroprevalence is increasing because it doubled from 2010 to 2015. This tendency is also seen elsewhere [12]. Despite all efforts done to decrease new contaminations, it seems that it doesn’t have a strong effect for preventing new infections among MSM in Mahajanga. Moreover, HIV men are mainly young people like in other countries [13]. It was proposed that bisexuality contributes to the widespread of HIV [14].

We found only a few coinfections (Table1) among HIV positive men like in some eastern countries in contrast to the USA and some western European countries[15-18].

CONCLUSION

We highlighted a very high rate of HIV positivity among MSM living in Mahajanga. Coinfection also existed. As homosexuality and bisexuality are not accepted by Malagasy people, many MSM is hiding. Efforts must be made in order to sensitize them about risky behaviors.

Conflict of interest: Nil

Source of funding: No competing financial interests exist.

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REFERENCES
