New Surge of Syphilis among Patients Living with Human Immunodeficiency Virus in Martinique in 2015

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NEW SURGE OF SYPHILIS AMONG PATIENTS LIVING WITH HIV IN MARTINIQUE IN 2015.

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NEW SURGE OF SYPHILIS AMONG PATIENTS LIVING WITH HIV IN MARTINIQUE IN 2015.

A Syphilis outbreak began in Martinique, French Antilles, in 2004, initially among men who had sex with men (MSM) and who were living with HIV. The outbreak subsequently affected all groups at risk. After an initial decrease in incidence, the outbreak started growing again in 2014 among patients living with HIV (PLHIV) and primarily concerns MSM.

Unpublished data of the French Sexual Transmitted Infections (STIs) surveillance network highlight an increase of STIs since 2012 among MSM, including Syphilis, with a progression of sexual risk behavior in this population. One third of patients with a new diagnosis of recent Syphilis were co-infected by HIV in France. The incidence of HIV in Martinique has been estimated at 26 per 100,000 person-years in 2013, among them 35% were MSM.

Methods

All PLHIV followed in the French University Hospital of Martinique between 1st January 2005 and 31st December 2015 with a new diagnosis of recent syphilis (primary, secondary or early latent syphilis), were included. Both treponemal (Treponema pallidum hemaglutination assay [TPHA]) and non treponemal (Venereal Disease Research Laboratory [VDRL]) tests were performed together at least annually to all the followed PLHIV. All positive and discordant results were verified by using fluorescent treponemal antibody absorption (FTA). Characteristics of patients with a diagnosis made between 1st January 2005 and 30th June 2010 (1st period) were compared with those diagnosed between the 1st July 2010
and the 31\textsuperscript{st} December 2015 (2\textsuperscript{nd} period). Demographic and clinico-biological data were prospectively collected via the standardized electronic medical record Nadis\textsuperscript{®}.\textsuperscript{1} We determined the medical and social parameters of patients affected by this outbreak, including demographical, immuno-virological, socio-professional data and declared sexual orientation. Syphilis re-infections were defined as two or more distinct episodes of recent syphilis reported by the patient or the medical records.

**Ongoing outbreak**

Among a cohort of 1047 PLHIV followed in Martinique in 2015, 201 recent cases of syphilis were diagnosed between 1\textsuperscript{st} January 2005 and 31\textsuperscript{st} December 2015 (Table 1). Median age of patients was 40.6 years. Mean annual incidence in the whole outbreak was 2.1\%. The outbreak was characterized by two epidemic peaks in 2008 (1\textsuperscript{st} epidemic peak) and 2015 (2\textsuperscript{nd} epidemic peak) with respective annual incidence of 4.3 and 3.8\%. Annual incidence among MSM living with HIV was evaluated at 6.6\% in 2009 and 10.6\% in 2015.

**Medico-social characteristics of patients affected in the epidemic peaks**

As shown in figures 1 and 2, the population affected in the epidemic peaks of 2008 differed from that in 2015.

Main medical characteristics of patients are presented in table 1: Age, Immuno-virological parameters (CD4 count, HIV viral load) and Syphilis recurrence rates did not significantly differ between 2008 and 2015.

In 2015 recent syphilis was diagnosed in 36 men, including 31 MSM, and 2 women. In 2008 recent syphilis was diagnosed in 23 men, including 13 MSM, and 11 women. The
outbreak affected proportionally more MSM during the second peak than during the whole study period (77.5% vs 62.2%, p=0.03) while in the first peak MSM were less affected than during the whole study period (38% vs 63.2%, p=0.006).

Socio-professional status also differed between the two epidemic peaks: 12 patients were unemployed in 2015 (37.5%) versus 25 in 2008 (73.5%) and 93 (46.3%) considering the whole period of the study. Unlike the 2nd peak of 2015, during the 1st peak, the outbreak affected proportionally more unemployed patients than during the whole period of the study (p = 0.003).

Concerning the educational level, recent syphilis was diagnosed among 25 patients without a bachelor’s degree in 2008 (73.5%), 26 in 2015 (65%), and 111 (55.2%) considering the whole period of the study. Unlike the 2nd peak of 2015, the 1st peak of 2008 affected proportionally more patients with a lower educational level compared with the whole period of the study (p = 0.04).

**Discussion**

In 2000, a Syphilis outbreak started in western countries, including France. This outbreak appeared in Martinique in 2004 among MSM living with HIV. Four years later, it shifted to other groups at risk, including heterosexuals, leading to a 1st epidemic peak in 2008. This shift was similar to that reported previously for HIV infection.

The incidence of recent syphilis among patients living with HIV in Martinique more than tripled in 2015 compared with 2013. This highlights a clear surge of new cases during the past 2 years. However, the socio-demographic characteristics of infected patients have changed:
Whereas almost 3 quarters of patients in the 1st epidemic peak were unemployed and/or had a low educational level, the proportion of patients in these categories was significantly lower in the 2015 peak. This socio-demographic switch may be related to the shift from one group at risk (PLHIV living in precarious conditions, crack-cocaine users and sex workers) to another (MSM) with a higher mean socio-professional level. In contrast, MSM were a minority during the 2008 epidemic peak, but the majority in 2015, confirming the upsurge during the 2 last years. However, these findings that concern PLHIV may not be generalizable to other populations affected by the syphilis epidemic and who are not infected with HIV. This outbreak of syphilis among MSM in Martinique is not isolated. Indeed, similar outbreaks have previously been reported throughout the world at different times.5-9 The AIDS epidemic has resulted in behavioural changes with a decrease in syphilis among MSM in the 90s.10 The current surge of syphilis is consistent with reports of increased high-risk sexual practices among MSM,8 in part related to a decreased perceived risk of HIV transmission, due to highly active antiretroviral therapy11 and pre-exposure prophylaxis development.12 As already described,13 the increasing use of social media to meet sex partners could also have facilitated the rapid expansion of syphilis among MSM in Martinique. The high incidence of recent syphilis among patients already followed for an HIV infection, especially since 2010, reflects the lack of condom use and the failure of prevention policies in this population. Unfortunately, data on sexual practices were not registered in this study, and we do not know if this new surge is associated with a progression of sexual risk behavior. Another limitation to the study is the lack of multivariate analysis, due to the low number of patients, to control confounders for population description.

Syphilis is the most common co-infection in newly diagnosed PLHIV in France14 and is associated with more frequent complications among PLHIV.2 As syphilis increases the risk of HIV infection15 and because MSM are at the highest risk of HIV infection,16 the control of
this outbreak is a priority. Monitoring syphilis incidence among PLHIV is also an excellent indicator of sexual risk-taking among high-risk populations, including MSM. This study offers the opportunity to establish the socio-demographic shift of this new surge in a relatively isolated population of 400,000 people living in Martinique, and to sound the alarm on sexual risk-taking among the MSM population.

Conclusion

These data reveal a growing outbreak of syphilis since 2014 among PLHIV in Martinique. Contrary to the first epidemic peak of 2008, this new outbreak concerns mainly MSM. A strengthening of targeted preventive policies to prevent high-risk sexual practices is urgently required.
Table 1: Demographic data (number of patients) and incidence of recent syphilis among patients followed for HIV infection in Martinique per year: 2005-2015.

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<td>724</td>
<td>760</td>
<td>787</td>
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<td>892</td>
<td>947</td>
<td>962</td>
<td>991</td>
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<td>Women</td>
<td>245</td>
<td>267</td>
<td>279</td>
<td>291</td>
<td>314</td>
<td>333</td>
<td>343</td>
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<td>Heterosexual men*</td>
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<td>198</td>
<td>203</td>
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<td>217</td>
<td>230</td>
<td>248</td>
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<td>Recent syphilis total</td>
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<td>10</td>
<td>11</td>
<td>18</td>
<td>15</td>
<td>12</td>
<td>25</td>
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<tr>
<td>Incidence (%)</td>
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<td>1.5</td>
<td>1.7</td>
<td>4.3</td>
<td>1.2</td>
<td>1.3</td>
<td>2.0</td>
<td>1.6</td>
<td>1.2</td>
<td>2.5</td>
<td>3.8</td>
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<td>MSM</td>
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<tr>
<td>Incidence (%)</td>
<td>4.5</td>
<td>3.8</td>
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<td>4.0</td>
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<td>10.6</td>
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</tbody>
</table>

* Men who have sex with men

Table 2: Main characteristics of patients with recent Syphilis among patients followed for HIV infection in Martinique: Comparison between the first (2008) and the second (2015) epidemic peak.
Figure 1: Number of new cases of recent syphilis per year among patients followed for HIV infection in Martinique according to the gender and sexual orientation.
Figure 2: Number of new cases of recent syphilis per year among patients followed for HIV infection in Martinique according to the professional status.


