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Spacial dynamics and social risk factor for AIDS in isolated area in French Guiana

Emilie Mosnier1,2,3, Noé Guiraud4, Lölé Epelboin2,3, Florence Huber5, Leila Adriouch6, Basma Guarmilt7, Félix Djossou2,3, Paul Brousse1, Anne Terraz7, Muriel Ville1, Antoine Adenis5,7, Mathieu Nacher4,7

1. Pôle des Centres Délocalisés de Prévention et de Soins, Centre hospitalier André Rosemon, Cayenne, French Guiana
2. Équipe EA3393, Ecosystèmes amazoïens et Pathologie Tropicale, Université des Antilles et de la Guyane, Cayenne, France
3. Unité de Maladies Infectieuses et Tropicales, Centre Hospitalier André Rosemon, Cayenne, Guyane, France
4. Groupe de Recherche en Économie Quantitative d'Aix-Marseille, UMR 7316, France
5. Hôpital de jour, Centre hospitalier André Rosemon, Cayenne, Guyane
6. COREVH, Centre hospitalier André Rosemon, Cayenne, Guyane
7. Centre d’Investigation Clinique Épidémiologie Clinique Antilles Guyane, Cayenne, Guyane, France

Background

French Guiana, a French overseas department in South America, has been classified epidemic for HIV. The dynamics of the spread of the AIDS epidemic ranges according to the characteristics of each geographical region in different population groups. Isolated area in French Guiana have a vast diversity of population including maroon population, amerindians and migrants in particular from Brazil, Surinam and Guyana. Isolated area in French Guiana is defined by all rural areas compared to urban area: Cayenne, Kourou and Saint Laurent du Maroni (Map 1). The aim of this study was to evaluate spacial and temporal trend of the AIDS epidemic among type of population on isolated area of French Guiana.

Materials/Methods

We have investigates the spacio-temporal dynamics of the HIV epidemic in isolated area of amazonian forest of French Guiana. Data were collected on standardized case report forms and analysed using statistical methods. Data from isolated area HIV-infected patients were compared to urban and coastal HIV-infected patients from Cayenne, Saint Laurent and Kourou.

Results

174 people living with HIV were reported in isolated area versus 2143 in costal urban area. Media age of isolated area people living with HIV was 43.8 years, sexe ratio was 0.93. 37% of cases were detected at late stage (≥200 CD4/mm²) versus 34% in costal area (p=0.34). But mean of last CD4 were lower in isolated cases than in costal cases (423 and 569; p<0.005 respectively) (Table 1). However percentage of virological response under 6 month of antiviral therapy was similar in isolated area (80% versus 88% p=0.135 respectively).

There was an increase of AIDS incidence rates among the local population in specific key population this last decade. Isolated area have been affected later after costal French Guiana (Figure 1). The present study shows significant differences between communities living on the Maroni and oyapock river : no cases in amerindians population living upstream of Maripasoula and Saint Georges village were reported. However on isolated area maroon population and brazilian people are more impact by the spread of the disease compared to the cost (p<0.001 and p=0.005 respectively) (Figure 2 and Map 2). The village of Saint georges and Maripasoula are particulary affected with a significants link with Brazilian illegal gold mining particulary for the last decade in Maripasoula.

Table 1: Description of baseline HIV infection characterististics in patients living with HIV in isolated area and in urban and coastal area of French Guiana, in 2015

<table>
<thead>
<tr>
<th></th>
<th>People living with HIV in Isolated area (n=126)</th>
<th>People living with HIV in Urban and coastal area (n=2143)</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean of Age</td>
<td>43.8 [41.6-46.2]</td>
<td>45.2 [44.6-45.7]</td>
<td>&lt;0.005</td>
</tr>
<tr>
<td>Mean of age at diagnosis of HIV status</td>
<td>36.1 [33.7-38.5]</td>
<td>36.3 [35.7-36.8]</td>
<td>&gt;0.05</td>
</tr>
<tr>
<td>Sex ratio H/F</td>
<td>0.93</td>
<td>0.87</td>
<td>&gt;0.05</td>
</tr>
<tr>
<td>Mean of last CD4 (mm³)</td>
<td>424 [348-498]</td>
<td>569 [551-586]</td>
<td>&lt;0.005</td>
</tr>
<tr>
<td>Mean of last viral load (Copy/mL)</td>
<td>8960 (2282-20203)</td>
<td>5317(3653-6951)</td>
<td>&gt;0.05</td>
</tr>
<tr>
<td>Success after 6 month of HAART*</td>
<td>24/30 (80%)</td>
<td>671/755 (88%)</td>
<td>&lt;0.005</td>
</tr>
</tbody>
</table>

Figure 1: Annual number of new detected cases from coastal area and isolated from 1982 to november 2015

Figure 2: Country of birth of new detected cases in isolated area ans urban and coastal area from 2012 to november 2015

Conclusion

Thus, our work contributes to the understanding of HIV dispersion in French guiana, and its relationship with the geography of the area and the movements of human populations. To prevent HIV from spreading in this areas, greater attention should be given to key populations as brazilian gold miners and autochtonous population to prevent the spread of the disease.