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The HIV-2 Epidemic may Have Been Sparked by Parenteral Transmission

P Gomes^{1,2}, A Abecasis¹, M Almeida¹, AP Carvalho, MF Gonçalves, I Diogo, J Cabanas, MC Lobo, K Mansinho³, R Camacho¹

¹Laboratório de Virologia, Serviço de Imuno-Hemoterapia Hospital Egas Moniz, Rua da Junqueira, 126 1349-019 Lisboa, Portugal. ²Instituto Superior Ciências da Saúde – Sul, Egas Moniz – Cooperativa de ensino superior, Quinta da Granja, 2829-511 Monte da Caparica. ³Unidade de Doenças Infecciosas e Parasitárias, Hospital Egas Moniz, Rua da Junqueira, 126 1349-019 Lisboa, Portugal.



Mailing: Laboratório de Virologia, Serviço de Imuno-Hemoterapia Hospital Egas Moniz, Rua da Junqueira, 126 1349-019 Lisboa, Portugal
E-mail: p.gomes@netcabo.pt
Telef. 351213650471
Fax: 351213650144

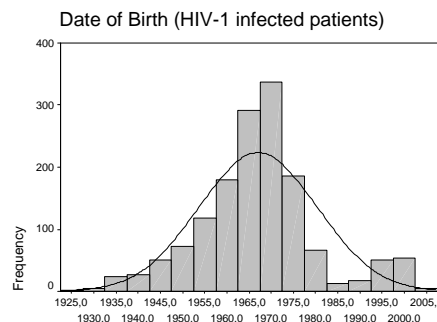
Abstract 076
Background: The origin of the HIV-2 infection in humans has been recently traced to the 40's, with an epidemic spread in Guinea Bissau (GB) between 1955-1970, coincident with the independence war in that country. It has been suggested that sexual transmission was the most important factor for this spread, in spite of its known low efficiency when compared with HIV-1. Portugal is the European country with the highest rates of imported HIV-2 infections. We wanted to investigate in more detail the war-related events possibly at the cause of this HIV-2 epidemic.
Methods: 218 HIV-2 infected patients, distributed among all stages of CDC classification (A-75%, B-10%, C-15%), were followed up between 1997 and 2002. Most of them are native from GB and Cabo Verde (42% and 15%). To further investigate the role of sexual activity versus parenteral transmission during the war, we looked into the HIV status of 1022 former Portuguese soldiers in GB, all candidate blood donors gathered at our institution.
Results: For our 218 HIV-2 infected patients, men (52%) and women (48%) were equally affected and in most cases a single route of transmission is difficult to establish. The great majority (67%) of them were born between 1940-1970 (median 1957). None significantly older (P<0.0001) than HIV-1-infected patients (median year of birth: 1967). None of the candidate blood donors was found HIV-2 reactive, although 9% of them admitted STDs events while in GB.
Conclusions: The median birth year of our patients fit within the 1955-1970 period, suggested as the transition time for the HIV-2 epidemic spread. Most of them are natives from GB that were young children at the time of the war, and now come to Portugal as immigrants or for health treatments. A high percentage of these HIV-2 infected patients, were born in a narrow time window, suggesting a transient factor not compatible with predominant sexual transmission, which would result in a more even distribution through all the age groups. If sexual transmission had been the main factor for the epidemic spread, we expected more Portuguese military personnel infected than those notified and HIV-2-epidemics in Portugal, France, India or Brazil, where HIV-2 cases had been reported – which is not the case. Our findings suggest parenteral exposure (injections, vaccination, blood and their derivatives, nosocomial and some traditional practices) as the principal route for the spread of this virus during the epidemic period.

Introduction: The origin of the HIV-2 infection in humans has been recently traced to the 40's, with an epidemic spread in Guinea Bissau (GB) between 1955-1970, coincident with the independence war in that country⁽¹⁾. In this study virus population dynamics was used to estimate the virus population size over time, suggesting that an event enabled HIV-2 to switch to epidemic growth sometime around 1955–1970, whereas the early history of HIV-2 subtype A in humans seems to be characterized by a more or less constant population size^(1,2). These findings are consistent with data from Guinea-Bissau, where HIV-2 seroprevalence was found to be higher in older age groups.^(3,4) It has been suggested that sexual transmission was the most important factor for this spread, in spite of its known low efficiency when compared with HIV-1. Portugal is the European country with the highest rates of imported HIV-2 infection. We wanted to investigate in more detail the war-related events possibly at the cause of this HIV-2 epidemic.

Methods: 218 HIV-2 infected patients, distributed among all stages of CDC classification (A-75%, B-10%, C-15%), were followed up between 1997 and 2002. Most of them are native from GB and Cabo Verde (42% and 15%). To further investigate the role of sexual activity versus parenteral transmission during the war, we looked into the HIV status of 1022 former Portuguese soldiers in GB, all candidate blood donors gathered at our institution. To compare with HIV-1 infection we looked for the birth date of 1494 HIV-1 infected individuals, from our hospital.

Results: For our 218 HIV-2 infected patients, men (52%) and women (48%) were equally affected and in most cases a single route of transmission is difficult to establish. The great majority (67%) of them were born between 1940-1970 (median 1957), being significantly older (P<0.0001) than HIV-1-infected patients (median year of birth: 1967). None of the candidate blood donors was found HIV-2 reactive, although 9% of them admitted STDs events while in GB.

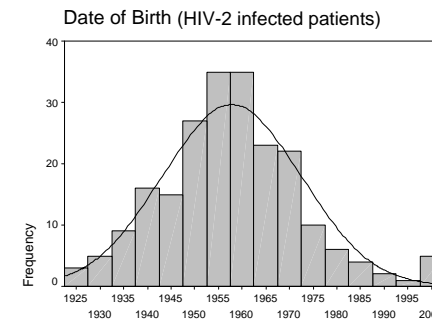
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Date of Birth

Statistics

HIV-1		
N	Valid	1494
	Missing	1
Mean		1967
Median		1967
Mode		1971
Std. Deviation		13,32
Minimum		1924
Maximum		2003



Date of Birth

HIV-2		
N	Valid	218
	Missing	0
Mean		1957
Median		1957
Mode		1951
Std. Deviation		14,64
Minimum		1925
Maximum		2002

Conclusions: The median birth year of our patients fit within the 1955-1970 period, suggested as the transition time for the HIV-2 epidemic spread. Most of them are natives from GB that were young children at the time of the war, and now come to Portugal as immigrants or for health treatments. A high percentage of these HIV-2 infected patients, were born in a narrow time window, suggesting a transient factor not compatible with predominant sexual transmission, which would result in a more even distribution through all the age groups. If sexual transmission had been the main factor for the epidemic spread, we expected more Portuguese military personnel infected than those notified and HIV-2 epidemics in Portugal, France, India or Brazil, where HIV-2 cases had been reported – which is not the case. Our findings suggest parenteral exposure (injections, vaccination, blood and their derivatives, nosocomial and some traditional practices) as the principal route for the spread of this virus during the epidemic period.