Prevalence of HIV-2 and HIV-1 group O infections among new HIV diagnoses in France: 2003–2006

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French national surveillance of new HIV diagnoses included the collection of dried serum spots to identify HIV serotypes. Between January 2003 and June 2006, 10 184 new diagnoses were reported. The proportions of HIV-2 and HIV-1 group O infections were 1.8 and 0.1%, respectively. Most of these cases occurred in patients infected through heterosexual contact and originated from the corresponding endemic areas. Three cases of HIV-2 infections were reported in non-African men having sex with men.

HIV-2, first suspected by serological findings in west African residents, was isolated from patients with AIDS originating from Cape Verde and Guinea Bissau [1,2]. Although HIV-2 causes AIDS, it is clearly less pathogenic than HIV-1 [3,4]. The viral load is significantly lower in HIV-2-infected patients, and consequently HIV-2 is less transmissible [5,6]. The precise diagnosis of HIV-2 has implications, particularly for monitoring RNA levels, as no specifically dedicated commercial assays are currently available, and for the choice of antiretroviral treatment, because HIV-2 strains are naturally resistant to non-nucleoside reverse transcriptase inhibitors and fusion inhibitors, and are less sensitive *in vitro* to some protease inhibitors [7,8]. HIV-2 is endemic in west Africa. Most cases described outside Africa have been traced to contacts with individuals from this endemic region. This has been particularly observed in European countries with historical links with west Africa such as France, the United Kingdom and Portugal [9–11]. No extensive epidemiological surveys have, however, allowed the determination of the exact prevalence of HIV-2 in these European countries. Similarly, HIV-1 group O variants are restricted geographically, mainly to Cameroon and the surrounding areas [12]. Rare cases have been reported in industrialized countries, but the exact prevalence of these variants among HIV-1-infected patients is unknown. Similar to HIV-2, most of the commercially available assays for the quantification of HIV-1 RNA do not detect viral sequences from HIV-1 group O variants [13], and non-nucleoside reverse transcriptase inhibitors are inefficient at controlling HIV-1 group O replication [14].

Mandatory anonymous HIV case reporting was implemented in France in 2003, with which virological monitoring using dried serum spots was associated. The procedures and the first results of this surveillance system have been described elsewhere [15]. In brief, any HIV-positive serology confirmed for the first time by a clinical laboratory must be reported, with a unique anonymous code for each patient. Clinical and epidemiological details are supplied by the physicians in charge of the patients. For each case, the laboratory is asked to send dried serum spots collected on filter papers from the serum sample obtained for the original diagnosis to the National Reference Centre (NRC). Although HIV notification is mandatory, virological surveillance is based on volunteer participation by both microbiologists and patients. The patient's consent for virological surveillance is obtained by the reporting clinician through the HIV notification form. Serological identification of the type and group of HIV is performed by enzyme-linked immunosorbent assay at the NRC, as described [16]. Results from the NRC are then linked to the epidemiological data in the HIV national database using the patient's anonymous code. Any specific diagnosis of infection by either HIV-2 or HIV-1 group O implies transmission of the information to the clinical laboratory of origin in order to adapt the clinical, biological and therapeutic management of the patient.

Here we report the results of the HIV-2 and HIV-1 group O infections that were identified among new HIV diagnoses during the past 3 years. Between January 2003 and June 2006, 10 184 new diagnoses with participation in the virological surveillance were reported. Among these, 186 were from patients infected by HIV-2 [1.8%; 95% confidence interval (CI) 1.6–2.1], of which 164 (1.6%; 95% CI 1.4–1.9) were HIV-2 only and 22 (0.2%; 95% CI 0.1–0.3) were probable dual infections. The serological diagnosis of dual infection was based on similar high antibody binding to both the immunodominant epitope of gp41 and the V3 region of both HIV-1 and HIV-2 [16,17]. Such a stringent criteria was validated earlier [17], and more recently on a panel of samples for which single or dual infections were diagnosed by type-specific polymerase chain reaction (data not shown). Patients infected with HIV-2 were mostly citizens of a west African country (65%; $n=121$), mainly Côte d'Ivoire ($n=64$), Mali ($n=19$) and Senegal ($n=12$), but there were also 22 European individuals, 20 from France and two from Portugal (Fig. 1). The majority of cases was observed in women (63%; $n=118$). Although the risk factor was unknown for 26% ($n=48$) of cases, 72% ($n=134$) of HIV-2 infections were caused by heterosexual transmission. HIV-2 was, however, identified in three men who have sex with men (MSM), one from France and two from the Americas.

Twelve patients (0.1%; 95% CI 0.1–0.2) were infected with HIV-1 group O variants. Most of them originated from the sub-Saharan endemic area: nine from Cameroon and one from Chad (Fig. 1). Two of those patients had dual M/O infection; those two cases have been described in detail earlier [18]. The two other cases were French

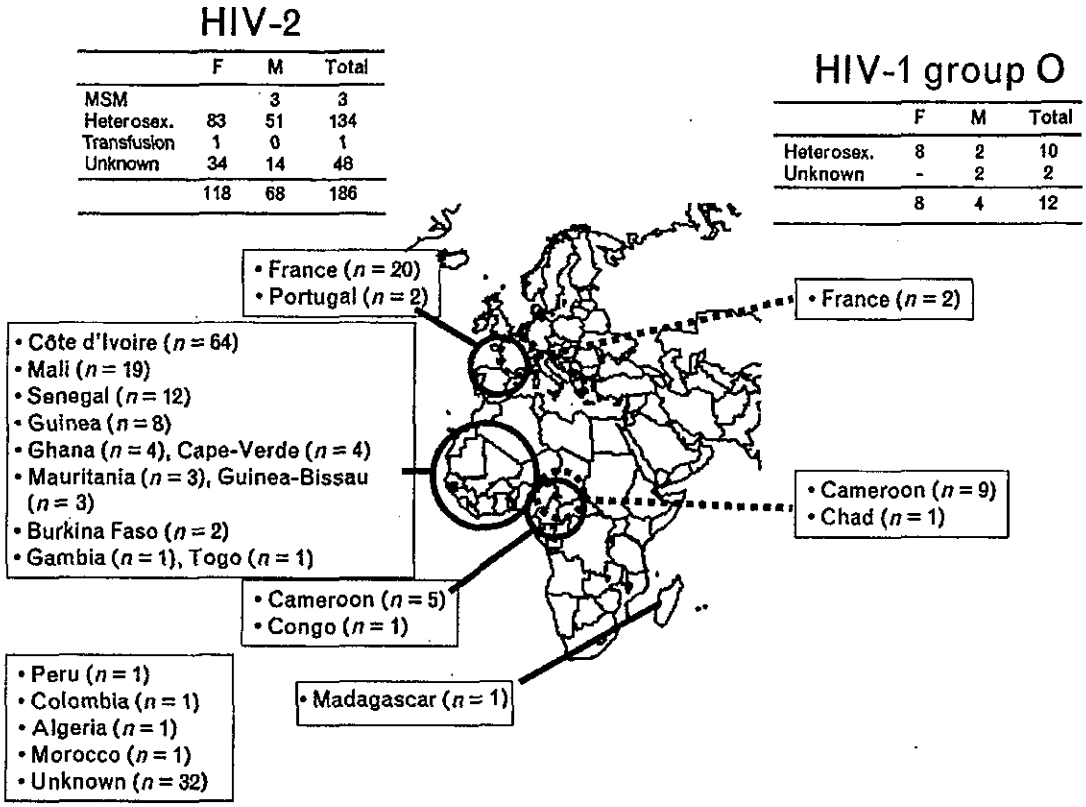

Fig. 1. Nationality and mode of transmission of patients identified as infected by HIV-2 (left) and HIV-1 group O (right) in France, 2003–2006. F, Female; Heterosex., heterosexual transmission; MSM, men who have sex with men; M, male.

citizens who had probably been infected through heterosexual intercourse.

A specific serological diagnosis of HIV-2 infection may be missed if adapted confirmation tools are not routinely used in clinical laboratories, a situation that is frequent in non-endemic areas. There is a frequent use of HIV-1 Western blots for confirmatory diagnosis, on which serum samples positive for antibodies to HIV-2 may cross-react, even on envelope glycoproteins, leading to a misclassification as anti-HIV-1 positives [19]. Similarly, HIV-1 group O infections are not systematically diagnosed as such, except if there are dissociations between clinical and biological findings in an HIV-1-positive patient; for example, AIDS stage with undetectable viral load. This is because there is no commercially available specific serological tool for this purpose. Therefore, there are no data that would provide estimates of the prevalence of these rare variants in western countries. The French national surveillance of new HIV diagnoses included the collection of dried serum spots to identify HIV serotypes with dedicated peptide immunoassays [16,17]. This allowed, for the first time, the provision of reliable estimates of the proportion of these rare variants in a European country. The results indicate that most of the cases diagnosed during this 3-year period still occurred in patients originating from the endemic areas, west Africa and Cameroon, for HIV-2 and HIV-1 group O, respectively. Three cases of HIV-2 infections were, however, reported in MSM, an observation that should deserve further attention because of the persistent high-risk behaviours in some individuals in the gay community.

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Sponsorship: The National Reference Centre is funded by a grant from the Institut de Veille Sanitaire. The Institut de Veille Sanitaire is funded by the French Minister of Health. The enzyme-linked immunosorbent assays for serological discrimination between HIV variants were developed and validated through projects supported by the Agence Nationale de Recherche sur le Sida (ANRS, Paris, France). We thank all participants in the national surveillance programme, particularly the biologists, physicians and public health doctors.

Received: 21 July 2007; accepted: 17 August 2007.

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別紙様式第2-1

No. 42

医薬品 研究報告 調査報告書

識別番号・報告回数			報告日	第一報入手日	新医薬品等の区分	機構処理欄
				2008. 1. 21	該当なし	

一般的名称	(製造承認書に記載なし)	研究報告の公表状況	Iwanaga M, Chiyoda S, Kusaba E, Kamihira S. American Society of Hematology; 2007 Dec 8-11; Atlanta.	公表国
販売名(企業名)	合成血「日赤」(日本赤十字社) 照射合成血「日赤」(日本赤十字社) 合成血-LR「日赤」(日本赤十字社) 照射合成血-LR「日赤」(日本赤十字社)			日本

研究報告の概要

○1999～2006年の長崎における日本人献血者ヒトT細胞向性ウイルス1型 (HTLV-1) 感染率の傾向

HTLV-1の流行地域である日本の長崎では、1986年から献血者のルーチンの血清スクリーニング検査、1987年からウイルスキャリアの母親からの乳汁媒介伝播予防のために長崎県ATL ウイルス母子感染防止研究協力事業(APP)が実施されている。本試験では、1999年1月～2006年12月に献血を行った初回献血者の年齢別、出生年別、および期間別HTLV-1血清陽性率の傾向分析を行った。初回献血者55,668名(献血時年齢16～65歳、出生年1934～1990)のうち、718名はHTLV-1検査陽性であり、全体的な血清陽性率は1.29% (95%CI, 1.20-1.39)であった。陽性率は男性よりも女性の方が高かった(1.53%vs.1.13%; OR; 1.36, 95%CI; 1.17-1.57)。血清陽性率は、年齢が高くなるにつれ有意に上昇し、献血時年齢16～25歳では0.70%、献血時年齢56歳以上では7.34% (χ2乗検定、P<0.0001)であった。年間感染率は1999年が1.32、2002年が1.31、2006年が1.37であり、期間中に有意な経年傾向がないことが示された(P for trend=0.99)。献血時年齢の解析では、陽性率は56歳以上(P for trend=0.02) と16～25歳 (P for trend=0.0007)では有意に減少したが、出生年別解析では、1981～90年出生群で1999年の1.22%から2006年の0.44%へ減少(P for trend<0.0001)したことを除き、陽性率の経時的変化は見られなかった。1985～90年出生群の解析では、血清陽性率は1985～86年出生群の0.75% 、1987～88年出生群の0.31%から1989～90年出生群の0%に減少した(P for trend=0.0002)。HTLV-1血清陽性率は、APP開始後の1987～90年に生まれた献血者では、1985～86年に生まれた献血者と比較して有意に低かった。以上の結果は、ほとんどのウイルス伝播が幼児期に起こるため、HTLV-1陽性率の出生年解析が経年傾向の評価に適切であると考えられることを示し、ウイルスキャリアの母親の授乳を避けることを指導した県をあげての対応が、当該地域のHTLV-1血清陽性率の減少に貢献していることを示している。

報告企業の意見	今後の対応
1999～2006年の長崎における献血者のヒトT細胞向性ウイルス1型感染率は、1987～90年に生まれた献血者では1985～86年に生まれた献血者と比較して有意に低く、ウイルスキャリアの母親の授乳を避けることを指導した県をあげての対応が陽性率の低下に貢献していることが示されたとの報告である。	日本赤十字社では、HTLV-1のスクリーニング検査を行っている。今後も引き続き情報の収集に努める。

使用上の注意記載状況・その他参考事項等

合成血「日赤」
照射合成血「日赤」
合成血-LR「日赤」
照射合成血-LR「日赤」

血液を介するウイルス、細菌、原虫等の感染
vCJD等の伝播のリスク

(二)

Basic Science and Clinical Practice in Blood Transfusion

Basic Science and Clinical Practice in Blood Transfusion

Trend in Prevalence of Human T-Lymphotropic Virus Type-1 (HTLV-1) Infection in Japanese Blood Donors, Nagasaki, 1999 to 2006.

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Abstract

To aluate time-trend of HTLV-1 prevalence and the effect of preventative measure against the viral transmission are important in the virus endemic regions. In Nagasaki, Japan, an endemic area of HTLV-1, a routine serological virus screening for blood donors and a prefecture-wide intervention project (the ATL Prevention Program; APP) to prevent milk-borne transmission for the virus carrier mothers have been conducted since 1986 and 1987, respectively. However, the effects of both projects on the virus seroprevalence have not been well evaluated. In this study, we conducted trend analyses of age-specific, birth-year-specific, and period-specific seroprevalence of HTLV-1 for first-time blood donors who donated between January 1999 and December 2006. Among 55668 first-time donors (age at donation; 16–65 years, birth year; 1934–1990), 718 were test positive for HTLV-1, indicating that the overall seroprevalence was1.29% (95%CI, 1.20–1.39). Prevalence was significantly higher in women than men (1.53% vs. 1.13%; OR; 1.36, 95%CI; 1.17–1.57). Seroprevalence increased significantly with increasing age at donation from 0.70% at 16–25 years to 7.34% at over 56 years (Chi-square test, $P < 0.0001$). The annual prevalence was 1.32 in 1999, 1.31 in 2002, and 1.37 in 2006, indicating that there was no significant secular trend during 1999–2006 (P for trend=0.99). In analyses by age at donation, trends of HTLV-1 prevalence significantly de ied among age over 56 years (P for trend=0.02) and age 16–25 years (P for trend=0.0007), whereas in birth-year-specific analyses, there was no apparent change of the prevalence over time, except in birth year 1981–90 group in which the prevalence declined from 1.22% in 1999 to 0.44% in 2006 (P for trend < 0.0001). In analyses for limited birth year from 1985 to 1990, the seroprevalence declined from 0.75% in birth year 1985–86 group, 0.31% in 1987–88 group, to zero% in 1989–90 group (P for trend =0.0002). HTLV-1 seroprevalence was significantly lower among donors born in 1987–90 (after APP) than 1985–86 (before APP). These results indicate that a birth-year-specific analysis for HTLV-1 prevalence may be appropriate to evaluate secular trend since the virus mostly transmit during infancy, and that a prefecture-wide intervention, the refraining from breast-feeding by the virus carrier mothers, contributes a declining HTLV-1 seroprevalence in our region.

Footnotes

Disclosure: No relevant conflicts of interest to declare.

医薬品 研究報告 調査報告書

識別番号・報告回数			報告日	第一報入手日	新医薬品等の区分	機構処理欄
				2008. 3. 25	該当なし	

一般的名称	解凍人赤血球濃厚液	研究報告の公表状況	AABB Weekly Report. 2008 Feb 29.	公表国 米国
販売名(企業名)	解凍赤血球濃厚液「日赤」(日本赤十字社) 照射解凍赤血球濃厚液「日赤」(日本赤十字社) 解凍赤血球-LR「日赤」(日本赤十字社) 照射解凍赤血球-LR「日赤」(日本赤十字社)			

研究報告の概要

○インフルエンザパンデミックと血液供給に関するAABBの組織横断作業部会がパンデミック時に献血間隔の例外的な取り扱いを認めるようFDAに要求

インフルエンザパンデミックと血液供給に関するAABBの組織横断作業部会が、2月14日付で米国食品医薬品局に送付した文書である。

パンデミック時には、供血者が発症したり家族を看病したりするために、基準に合致する供血者の数が少なくなり、血液の安定供給に影響するという懸念が広がっている。

作業部会は、全血と赤血球採血の献血間隔を半分に短縮(8週間のところを4週間、16週間のところを8週間)することを提案した。これはパンデミック時の血液供給の問題を最小限にするためにFDAが取りうる手段としては最も効果的であると主張している。

また、作業部会の前回のミーティングでは、過去6ヵ月以内に血液が使用された供血者については、感染症検査の前に供給するという方法が紹介された。これに関してのFDAの意見を求めている。

使用上の注意記載状況・その他参考事項等

解凍赤血球濃厚液「日赤」
照射解凍赤血球濃厚液「日赤」
解凍赤血球-LR「日赤」
照射解凍赤血球-LR「日赤」

血液を介するウイルス、細菌、原虫等の感染
vCJD等の伝播のリスク

報告企業の意見	今後の対応
インフルエンザパンデミックと血液供給に関するAABBの組織横断作業部会はパンデミック時に献血間隔の例外的な取り扱いを認めるようFDAに求めているとの報告である。	日本赤十字社では家禽に高病原性トリインフルエンザの流行が認められた場合、当該飼養農場の関係者や防疫作業従事者の献血制限を行っている。新型インフルエンザが流行した場合、献血者減少につながることも予想される。今後も引き続き情報の収集に努める。

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IN THIS ISSUE

Advance Registration for 2008 Spring Conference Ends March 7

Only one week remains to register in advance for the 2008 AABB Spring Conference. After March 7, individuals who have not signed up for the conference can still attend but must register on-site. The conference, which will be held March 28-29 in Orlando, Fla., features educational sessions in four tracks — Blood Inventory Management, Cellular Therapy, Perioperative Blood Management and Tissue Management. Registration includes entrance to educational sessions in any of the four tracks, course materials, continental breakfast and access to the exhibits.

AABB Task Force Asks FDA for Exception to Interdonation Interval During Influenza Pandemic

The AABB Interorganizational Task Force on Influenza Pandemics and the Blood Supply sent a letter to the Food and Drug Administration on Feb. 14 asking the agency to review a template to be used by blood facilities to request an exception to the interdonation interval requirements in the event of an influenza pandemic. According to the letter, there is widespread concern that a pandemic would severely impact the availability of blood products by limiting the number of eligible donors. The task force stated that shortening the interdonation interval for whole blood and red blood cell collection is the most significant step the agency can take to minimize supply issues during a pandemic.

Report Finds Alternatives for Blood Irradiators, Other Radiation Sources to Improve National Security

EventCalendar

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March 5 – AABB Audioconference: Hematopoietic Cell Donation: Ensuring Safety for the Donor, Product and Recipient CT read more »

March 5-6 – Southeastern Area Blood Bankers Annual Meeting read more »

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