Letters to the Editor

Fransen

Longstanding presence in Belgians of multiple non-B HIV-1 subtypes

SIR—Based on preliminary data there has been much speculation about the role of different HIV-1 subtypes in the rate of spread of HIV. One study from Thailand suggested that the efficiency of sexual transmission between men and women is higher for HIV-1 subtype E than for subtype B.[1] This difference in transmissibility may be due to differences in cell tropism. HIV-1 subtypes A, C, D, and E, which are more frequently found in Africa and Asia, might have a stronger tropism for Langerhans cells and would thus be more easily transmitted via heterosexual contact than HIV-1 subtype B, which predominates in the USA and Europe.[2] On the basis of these findings some researchers believe that the introduction of non-B HIV-1 subtypes from Africa and Asia into Europe and the USA may lead to an increase in the rate of spread of HIV-1 through heterosexual intercourse.

We studied the distribution of HIV-1 subtypes in Belgians, who were diagnosed as HIV infected between 1985 and 1994. Culture material of 350 patients, seen at the Institute of Tropical Medicine in Antwerp, has been stored frozen. Samples were selected from patients of Belgian nationality, for whom socio-demographic data and data on the mode of infection were available. Of the 190 HIV-infected persons 166 were men. 114 men were infected through homosexual contact, and 39 men and 20 women were infected through heterosexual contact. For 12 patients the routes of infection were intravenous drug use (in four); transfusion of infected blood (four); and mother-to-child transmission (four). For the remaining five patients the mode of infection was unclear. Thus distribution of transmission modes corresponds with what is found in the total population of HIV-infected persons in the Flemish part of Belgium.

From the positive cultures DNA was extracted with the Isoquick extraction kit (Eurogentec). After PCR heteroduplex mobility assay was performed with a 700 bp (V3-V5) or 1240 bp (V1-V5) fragment of the *env* gene.[3] In a first HMA subtyping round the sample *env* fragment was compared with the reference fragments of subtypes A–D. The samples that could not be typed in the first round were further analysed with the *env* fragments of the remaining references E–H.

	HIV subtypes						
	A	B	C	D	F	G	H
Total population (n=190)	30	130	9	11	7	1	2
Homosexual contact (n=114)	2	110	0	2	0	0	0
Heterosexual contact (n=59)	23	12	8	8	6	0	2
Heterosexuals with European partner (n=12)	3	7	2	0	0	0	0
Heterosexuals with partner from sub-Saharan Africa (n=29)	14	3	3	4	4	0	1

Table: **Distribution of HIV-1 subtypes among Belgians**

Of the 190 patients, 130 were infected with HIV-1 subtype B. 110 of the 114 homosexuals were infected with subtype B. Of the 59 patients who were infected through heterosexual intercourse, 23 had subtype A. Among the remaining 36, five different HIV-1 subtypes were found. For 41 heterosexual patients the country of origin of the likely infecting partner was recorded. 29 had a partner from sub-Saharan Africa and of these 26 were infected with a non-B HIV-1 strain. Of the 12 patients with a partner from Europe, five had a non-B strain (table).

The predominance of subtype B among homosexuals is in line with what has been observed in the USA and western Europe.[4] The distribution of subtypes in heterosexuals in Belgium mirrors the wide variety of HIV-1 subtypes found in Central Africa.[5] We have evidence that some non-B HIV-1 subtypes such as subtype A, which are associated with dramatic epidemics in parts of Africa, have been introduced into the Belgian population at least 10 years ago. Seven patients infected with non-B HIV-1 subtypes were diagnosed as HIV seropositive in 1985–86.

Out data show that non-B HIV-1 subtypes have been present in Belgium for some time now without any evidence of an epidemic among heterosexuals. Differences in transmissibility between HIV-1 subtypes are unlikely to explain differences in the rate of HIV-1 spread in parts of Africa and Asia on the one hand, and Europe on the other. Rather, HIV epidemics are determined by a complex interplay of behavioural and biological factors.

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