Letters to the Editor

High rates of HIV seropositivity in Africa — alternative explanation

Sir: It is gratifying that Gissselquist *et al*.[1], albeit from a different perspective, conclude as we have that heterosexual and mother to child transmission cannot account for the high rates of HIV seropositivity in sub-Saharan Africa[2–4]. Gisselquist and his colleagues' argument, that African statistics are explicable in terms of an iatrogenic mechanism involving unsterile injections, presents at least two difficulties. First, given that many infectious agents existed in Africans prior to the AIDS era and undisputedly survive in needles and syringes longer than HIV, and are more readily transmitted[5], such agents should be more prevalent than HIV. Second, their belief that HIV can survive for more than four weeks' is not shared by other HIV experts including the Center for Disease Control and Prevention: '. . . drying of HIV-infected human blood or other body fluids reduces the theoretical risk of environmental transmission to that which has been observed — essentially zero'[6].

An alternative, and in our view more plausible, explanation may be found in an examination of the specificity of the antibody tests[2]. The only way to determine their specificity is to use HIV isolation as a gold standard. However, at present some of the best known HIV/AIDS experts agree there is no such gold standard. 'One difficulty in assaying the specificity and sensitivity of human retroviruses [including HIV] is the absence of a final ''gold standard'' '[7,8]. According to one antibody test manufacturer 'At present there is no recognized standard for establishing the presence or absence of HIV-1 antibody in human blood'[9].

Given also that (a) antibodies directed against the infectious agents which cause the fungal and mycobacterial diseases highly prevalent in Africa cross-react with the HIV antigens[10–13], (b) 60% of infants born to HIV positive mothers serorevert after maternal antibodies have disappeared from the infant circulation[3,14,15]; the only explanations being either children cure themselves of HIV or the tests are non-specific[3]; (c) the criteria which define a positive Western blood vary widely between institutions and laboratories and are least stringent in Africa[16] (see Appendix); it is credible that the disparate number of positive antibody tests in sub-Saharan Africa are due to cross-reacting antibodies.

Although to some it may seem 'curious indeed'[17], a non-retroviral explanation for the correlation between 'seropositivity' and morbidity, mortality and AIDS in Africa[18] is eminently possible. Clinical practitioners are no strangers to tests of significant utility and predictive ability which are nonetheless devoid of specificity. Arguably the test which provides the best example is the erythrocyte sedimentation rate (ESR) because it, like the HIV antibody tests, is associated with elevations of antibodies and acute phase reactant proteins. Indeed, there is evidence that an elevated ESR is a superior predictive marker for the development of clinical AIDS than is a decrease in the CD4 cell count[19], although the latter is said to be the cause of the syndrome. A positive antibody test, like the ESR, may indicate a propensity to the development of particular diseases without necessarily being linked to HIV infection.

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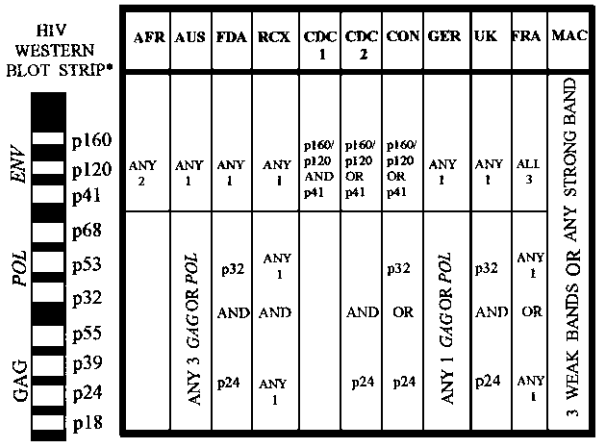
Appendix

Criteria defining a positive HIV Western blot



	AFR	AUS	FDA	RCX	CDC 1	CDC 2	CON	GER	UK	FRA	MAC
	ANY 2	ANY 1	ANY 1	ANY 1	p160/ p120 AND p41	p160/ p120 OR p41	p160/ p120 OR p41	ANY 1	ANY 1	ALL 3	3 WEAK BANDS OR ANY STRONG BAND
		ANY 3 *GAG* OR *POL*	p32 AND p24	ANY 1 AND ANY 1		AND p24	p32 OR p24	ANY 1 *GAG* OR *POL*	p32 AND p24	ANY 1 OR ANY 1	

AFR=Africa[1]; AUS=Australia[2]; FDA=US Food and Drug Administration[3]; RCX=US Red Cross[3]; CDC=US Center for Disease Control[3]; CON=US Consortium for Retrovirus Serology Standardization[3]; GER=Germany; UK=United Kingdom; FRA= France; MACS=US Multicenter AIDS Cohort Study 1983–1992. *Bands not in electrophoretic order

Notes

I 'The Association of Public Health Laboratories now recommends that patients who have minimal positive results on the Western blot, eg p24 and gp160 only, or gp41 and gp160 only, be told that these patterns have been seen in persons who are not infected with HIV and that follow-up testing is required to determine actual infective status'[4].

II In February 1993 the US Food and Drug Administration relaxed their criteria in order to 'reduce the number of HIV-1 seroindeterminate Western blot interpretations', that is, to increase the number of HIV positive individuals[5].

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