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Two new isolates of HIV-2 : antigenic composition, growth properties and use as antigenic source for Western-blot analysis

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Objective : To analyse the antigenic composition and the growth properties of two isolates of HIV-2. To compare their use as antigen in western blottings for antibody to HIV-2 to the use of a reference strain, HIV-2 HTLV4 PK 289.

Methods : HIV-2 TY was isolated from both the plasma and the peripheral lymphocytes of a patient with a full-blown AIDS. HIV-2. SQ was isolated from a patient originating from Guinea and suffering from respiratory infection. Both isolates grew in persistently infected HUT 78 cells. Antigenic composition was analysed by both Western-blot and radio-immunoprecipitation assay. Their use as antigens in western blottings for antibody to HIV-2 was analysed with a panel of reference sera positive for antibody to HIV-1 or to HIV-2.

Results : HIV-2 TY and HIV-2 SQ have a major core protein of Mr 26 Kd, intermediate between p24 of HIV-1 and p27 of HIV-2 HTLV4 PK 289. Their putative transmembrane glycoprotein is a 41 Kd smearing protein. HIV-2 TY and HIV-2 SQ have a CD4 tropism and induce syncytium in CD4 + cell lines.

Every serum positive for antibody to the envelope proteins of HTLV4 PK 289 reacted with the envelope glycoproteins of both HIV-2 TY and HIV-2 SQ.

Conclusion : These two new isolates, that are highly replicative in HUT 78 cells, are good reagents to be used in western blotting assays for antibody to HIV-2.

IVth International Conference on AIDS, Stokholm 1988, t. 2, p. 91, 1664

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HIV-1/HIV-2 antibody prevalence among female prostitutes and their procurers in Guinea-Bissau (West Africa)

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Twenty six female prostitutes and four procurers were selected from a urban district of Bissau to find the prevalence of HIV-2 infection.

Participants ranged in age from 17 to 56 years old for the prostitutes and from 40 to 58 for the procurers.

The sera were tested by ELISA and confirmed by Western blot methods. 13 (50 %) of the prostitutes and 1 (25 %) of the procurers were positives to HIV-2. Some sera had cross reactions with HIV-1 but none presented specific HIV-1 antibodies.

Clinical symptoms associated with AIDS were only present in one of the infected persons. (Chronic diarrhoea).

These results prove that prostitutes are a major at risk group of HIV- infection and significant disseminators of the virus.

The lack of clinical abnormalities in the HIV-2 seropositives individuals is markedly different from other studies on HIV-1 seropositive individuals.

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HIV-infections in West Africa : a clinico-epidemiological study

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Objective. The incidence of HIV- infections appears to be lower in West Africa, but there is the complicating factor of a second retrovirus (HIV-2).

Methods. Available seroepidemiological data show that HIV-2 is the main pathogen particularly amongst the risk groups of West Africa. The screening for both retroviruses for blood transfusion is mandatory though expensive.

Results. Studies in the Gambia show “slim disease” to be the main clinical manifestation and a strong relationship between HIV-2 and Tuberculosis. The mortality and morbidity of HIV-2 infections is discussed.

Conclusion. AIDS in West Africa is caused by at least two distinct types of human retroviruses.

IVth International Conference on AIDS, Stockholm 1988, t. 1, p. 316, 5007

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Serological analysis with HIV-1 or HIV-2 specific synthetic peptides strengthens dual infection hypothesis in West Africa

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Objective : West African sera, WB or RIPA double reactive for HIV-1 and HIV-2 envelope glycoprotein have been studied by using HIV-1 and HIV-2 specific synthetic peptides. Dual peptide seropositivity was looked for and studied by an indirect ELISA inhibition assay. The hypothesis of a double population of antibodies is discussed.

Methods : 58 WB/RIPA HIV-1 and HIV-2 envelope glycoprotein double reactive West African sera were selected. They were further tested in an indirect ELISA assay based on synthetic peptides representing the main transmembrane glycoprotein epitopes : HIV-1 gp41 specific peptide 39 and HIV-2 gp 36/41 specific peptide 41.2.1. Some of the above samples were also diluted and submitted to an indirect ELISA inhibition assay employing increasing amounts of either 39 or 41.2.1. so that cross reaction between the two peptides could be estimated.

Results : Among the 58 WB/RIPA double positive sera, 3 reacted only with HIV-1 peptide 39 (group 1), 25 reacted only with HIV-2 peptide 41.2.1. (groupe 2) and 30 reacted with both 39 and 41.2.1. (group 3). The inhibition assays conducted with 14 sera of group 3 showed that binding to peptide 39 is only inhibited by 39 and binding to 41.2.1. is only inhibited by 41.2.1. No significant cross reactions could be observed between the two peptides.

Conclusion : The dual HIV-1 and HIV-2 synthetic peptide reactivity observed in group 3 is due to specific reactions to each peptide suggesting existence of double population of antibodies : some directed to HIV-1, and some to HIV-2 specific epitopes. The simplest explanation is based on a double HIV-1 and HIV-2 infection in this part of Africa where both viruses coexist. Other explanations would imply the presence of new virus or either HIV-1 or HIV-2 variant.

IVth International Conference on AIDS, Stockholm 1988, t. 2, p. 266, 5611

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Prevalence and seroepidemiology of human retrovirus infections in The Gambia

Objective : To study the prevalence, natural history and clinical features of human immunodeficiency virus infections.

Methods : Cross sectional hospital and clinic based serological prevalence surveys are being conducted using competitive ELISA's and antiglobulin ELISA's for antibody to HIV-1 and HIV-2. Patients with disease indicative of HIV-infection are also being examined for serological evidence of HIV-1 or HIV-2 infection.

Results : 10/185 (5 %) of patients with STD's were seropositive for anti-HIV-2, none were seropositive for anti-HIV-1. Of 278 voluntary blood donors, only one was HIV-seropositive, for anti-HIV-2 alone. Further donor screening has indicated a continuing prevalence of around 1 in 250. 34 patients with AIDS have been identified to date. Fifteen have been characterised in detail : — 7 had weight loss, with chronic diarrhoea. Un responsive TB characterised 3 patients. 4 patients were infected by HIV-1, the remainder by HIV-2.

Conclusion : HIV-2 is the dominant virus in the Gambia. Infection by HIV-2 is associated with a clinical disease similar to that of HIV-1-associated AIDS. Dual infections have not yet been identified.

IVth International Conference on AIDS, Stockholm 1988, t. 1, p. 316, 5008

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Antibody reactivity to multiple HIV-2 isolates "

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Objective. To characterize the antibody response in various HIV-2 infected individuals to HIV-2 antigens from various isolates.

Methods. 500 serum samples from HIV-2+ individuals representing 7 different West African countries were analyzed by immunoblot for antibody profiles to 7 different HIV-2 isolates including 289, ST, MS, AS, TY, SBL-6669, NIH-Z.

Results. The majority of samples irrespective of geographic origin demonstrated a typical profile to HIV-2 antigens including the : gp160, gp120, gp32-40, p55, p24, p64, p53 and p34. These represent the major env, gag and pol antigens of this virus. Polymorphism in the size of the env-related antigens was noted between isolates. Certain isolates are thought to have two different size transmembrane envelope proteins. Less frequently reactivity to the 3'orf, p31 and NH2 terminal gag protein , p15 were noted. Viral antigens from all 7 HIV-2 isolates were equally reactive.

Conclusion : All HIV-2 isolates evaluated showed similar antibody profiles to all viral antigens irrespective of geographic origin of individuals. This suggests that multiple isolates of HIV-2 may be utilized to detect HIV-2 infection.

IVth International Conference on AIDS, Stockholm 1988, t. 2, p. 90, 1659

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HIV-2 and tuberculosis

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Objective. In Africa, a strong association between tuberculosis and HIV-1 seropositivity has been seen. This study was conducted to determine if HIV-2 is also associated with tuberculosis.

Methods. Sera from 345 tuberculosis cases in Senegal, Ivory Coast, and Guinea Bissau were analyzed for antibodies to HIV-2 by immunoblot. Prevalence in tuberculosis cases was compared to prevalence in control (n = 1644) and risk groups (n = 674) in the same urban areas, sampled at the same time.

Results. Seroprevalence to HIV-2 by Immunoblot

	<i>Senegal</i>	<i>Ivory Coast</i>	<i>Guinea Bissau</i>
Control	0,9 %	4 %	9 %
Risk	15 %	20 %	64 %
Tuberculosis	1,3 %	5 %	12 %

Conclusion. HIV-2 infection is not significantly associated with tuberculosis in the West African countries studied, where HIV-2 infection is quite common. HIV-2 shows a different pathobiology when compared to HIV-1.

IVth International Conference on AIDS, Stockholm 1988, t. 2, p. 311, 7548

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Perinatal transmission of HIV-2

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Objective. To assess operational techniques for studying perinatal transmission of HIV-2.

Methods. 92 mother-infant pairs were sampled in Ziguinchor, Senegal in 1987. Serum samples were obtained on all mothers. Heel-prick blood samples dried on filter paper were obtained from all infants (age = 1-24 months). Filter paper eluates and serum samples were analyzed by immunoblot on HIV-2 and HIV-1 antigens.

Results. 3 of 92 (3 %) mother-infant pairs were found to be HIV-2 positive, none were HIV-1 positive. There was 100 % concordance between HIV-2+ mothers and HIV-2+ infants. These mother-infant pairs are being followed for clinical and immunologic parameters ; at the time of sampling all were found to be healthy.

Conclusion. Filter paper eluates were found to be an effective means of detecting seropositivity in perinatal transmission studies. This technique has been operationally evaluated under field conditions with immunoblot assays and found to be highly effective and economical.

IVth International Conference on AIDS, Stockholm 1988, t. 2, p. 297, 6601

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Immunofluorescence assay for detection of antibodies to HIV-2

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Objective. To develop and evaluate an indirect immunofluorescence assay for detection of antibodies to HIV-2.

Methods. For detection of antibodies to HIV-2, a CEM cell-line with 10-15 % HIV-2 infected cells, as well as an uninfected CEM cell-line were used. The results were compared to a commercial ELISA (ELAVIA-II) and a commercial WB (Pasteur) for detection of HIV-2 antibodies.

Results. Eighty out of 81 known HIV-1 positive Danish patients were tested negative and one was tested positive with HIV-2 immunofluorescence (IFA/HIV-2). The IFA/HIV-2 positive patient was an immigrant from Central Africa who was confirmed both HIV-1 and HIV-2 positive by western blotting. — Out of 25 HIV-2 ELISA positive donor sera from Guinea Bissau, 17 were found positive, 4 negative, and 4 unspecific when tested with IFA/HIV-2. — All 17 IFA positive sera were confirmed positive by WB HIV-2. None of the 4 IFA negative sera could be confirmed positive by WB. — Of the four sera reacting unspecifically when tested with IFA/HIV-2, 1 was confirmed negative, 1 positive and 2 equivocal by WB-HIV-2. — Out of 10 known HIV-2 positive sera from Guinea-Bissau, 10 were found positive with the IFA/HIV-2.

Conclusion. IFA/HIV-2 is a rapid, sensitive and specific assay for detection of antibodies against HIV-2 and is capable of differentiating between HIV-1 and HIV-2 infections.

IVth International Conference on AIDS, Stockholm 1988, t. 2, p. 92, 1669

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Comparison of HIV-1 and HIV-2 infections in a hospital in Dakar, Senegal

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Objective. To compare clinical and laboratory data from patients and healthy persons infected with HIV-1 or HIV-2.

Methods. Sera were collected from patients presenting with ARC or AIDS symptoms, blood donors (2 000) and pregnant women (800) at “Hospital Principal”, and persons sent for HIV- serodiagnosis in Institut Pasteur.

Specific HIV-1 and HIV-2 ELISA kits (ELAVIA 1 et 2) were used to screen all sera. All positives were confirmed by Western blot (LAV blot 1 and 2). Most Western blot positive individuals were examined and bled for further biochemical and hematologic tests including T4/T8 ratio and macrophage phagocytic activity.

Results. Using the 1987 CDC/WHO case definition for AIDS clinical evaluation, persons with HIV-1 and HIV-2 were not distinguishable. Laboratory data from both clinically affected and apparently healthy individuals was independent of virus type.

The ration of HIV-1 to HIV-2 infection is 1 in both AIDS patients (21 HIV-1, 22 HIV-2). And apparently healthy individuals (16 HIV-1, 17 HIV-2). The sex ration in patients (M/F= 4) is comparable to HIV antibody prevalence of 1,5 % among blood donors, mostly males between 20-40 years of age, and 0,3 % among pregnant women.

Conclusions. Among 76 HIV positive individuals studied in Dakar in 1987, clinical and laboratory findings suggest similar expression of HIV-1 and HIV-2.

IVth International Conference on AIDS, Stockholm 1988, t. 1, p. 320, 5023

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Group and strain specific differences can be detected among HIV-1 and HIV-2 by ADCC

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Objective. To evaluate the occurrence of group and strain specific target determinants for ADCC reactive antibodies.

Methods. Lymphocytes isolated from normal donors were used as effector cells. HIV-1 and HIV-2 antibody positive sera were obtained from Swedish and West-African subjects. The target cell-line U937-2 was infected with HIV-1 strains (B40, A2587 and HTLV-III_B) and HIV-2 strains (SBL6669 and LAV-2). ADCC was tested in an 3 hr⁵¹-Cr-release assay.

Results. 53 % of HIV-1 antibody positive sera mediated ADCC against HTLV-III_B infected target cells. When the same sera were tested against two additional HIV-1 strains, 87 % mediated ADCC against at least one of the strains. 75 % of HIV-2 antibody positive sera were ADCC active when tested against SBL6669 infected target-cells, and 93 % when an additional HIV-2 strain was included. One of 6 HIV-1 sera tested lacked other HIV-1 strains. No crossreactivity was seen when HIV-1 and HIV-2 sera were tested against the heterologous group.

Conclusion. ADCC mediating antibodies are directed against common and strain-specific antigenic determinants.

IVth International Conference on AIDS, Stockholm 1988, t. 2, p. 92, 1668

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Initial observations on the natural history of HIV-2

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Objective. To evaluate the clinical status and disease manifestations over time of asymptomatic HIV-2 seropositive prostitutes in Dakar, Senegal.

Methods. Prostitutes regularly attending an STD clinic in Dakar have shown seropositivity for HIV-2 from an initial sampling in 1985 (18 prostitutes initially).

Since that time, HIV-2 seropositive prostitutes have been matched by age, sex, country of origin and time spent in clinic with 2 seronegative prostitutes and have been followed with detailed historical and clinical evaluations.

Results. To date, 51 seropositive prostitutes have accumulated > 75 person-years of observation (PYO) and have shown no generalized lymphadenopathy and no significant signs or symptoms usually associated with immunodeficiency. One HIV-2 seropositive prostitute, who is also HTLV-1 seropositive, has displayed a neurologic syndrome consistent with HTLV-1-associated myelopathy (HAM).

Conclusions.

- 1) The lack of clinical abnormalities in these HIV-2 seropositive individuals is distinct from other longitudinal studies in Africa following HIV-1 seropositive outpatients (Plummer, 1987 ; Ngaly, 1987).
- 2) Comparisons in the rate of development of AIDS or other clinical manifestations are premature in this cohort, but these initial observations suggest a different natural history of HIV-2 vs. HIV-1.

IVth International Conference on AIDS, Stockholm 1988, t. 2, p. 248, 5539

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Organization of AIDS prevention in Senegal

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Inter-University Convention to study human viruses, cancers, and related diseases

National AIDS Committee from Senegal

National Center for Sexually Transmitted Diseases in Senegal

Objective. To organize a network in Senegal involved in AIDS prevention and control at different levels, including research, primary health care, and government. This collaborating network should allow local health officials to take practical and successful measures to stop the spread of AIDS in Senegal.

Within the framework of a convention between the Universities of Dakar, Tours, Limoges, and Harvard, a large seroepidemiological study has been performed over the past three years regarding human retroviral infection, hepatitis B, and sexually transmitted diseases (STD).

Two national meetings were held in Dakar in Dec. 86 and Dec. 87 ; several AIDS researchers from neighboring African countries were invited to discuss practical measures to address the problem and devise methods of prevention and control.

Results. In the past 3 years, the inter-university convention has established a research and diagnostic laboratory in Senegal. It is anticipated that this lab will serve an important long term function in surveillance of AIDS and research on other important endemic viruses such as HIV-2, HBV, and HTLV-1. Local health personnel are now trained and actively involved in ELISA, IFA, and Western blot assays for HIV-1, HIV-2, HTLV-1, and HBV.

Various clinical and immunological assays are now performed on site for the various natural history studies in progress. Prevention and control measures have been instituted at many levels health care system.

IVth International Conference on AIDS, Stockholm 1988, t. 2, p. 269, 5624

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HIV and related viruses in Senegal

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Objective. Regional surveillance of HIV-1 and HIV-2 in 6 different urban areas of Senegal. Identification of risk groups for HIV infection.

Methods. 4 583 serum samples were collected from select populations from 1985-1988 in St-Louis, Dakar, Mbour, Kaolack, Ziguinchor and Louga, Senegal. Individuals were classified in three groups :

- a) High risk groups including prostitutes and STD patients ;
- b) Hospitalized patients and ;
- c) Healthy adults as a control population.

All samples were analyzed for reactivity to HIV-1 and HIV-2 by immunoblot and/or radioimmunoprecipitation in two laboratories (Senegal and US).

Results. Seroprevalence to HIV-1 and HIV-2

	n	HIV-1+	HIV-2+	HIV-1/2+
Control	2 642	0,11 %	0,41 %	0,07 %
Risk	1 195	0,42 %	13,55 %	0,16 %
Hospital	609	0 %	0,82 %	0 %
AIDS-like	137	11,67 %	1,45 %	2,18 %

Regional differences in prevalence to HIV-1 and HIV-2 will be discussed. Age-specific seroprevalence suggests that HIV-2 has been present in this population for several generations at least.

Conclusion. In 1985, HIV-2 was discovered in Senegal. This is the most common retrovirus in Senegal, however HIV-1 is entering the population. The pathogenicity of HIV-2 appears to differ from that of HIV-1.

IVth International Conference on AIDS, Stockholm 1988, t. 1, p. 320, 5024

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HIV-associated AIDS and HIV-2 seroprevalence in Bissau, Guinea-Bissau

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Objective. To investigate HIV-2 associated AIDS and determine the prevalence of HIV-2 infection in Bissau, Guinea-Bissau.

Methods. During a six month period in 1987 suspected clinical AIDS cases at the main hospital in Bissau were examined. 2 342 sera were also collected from groups of patients and healthy subjects in Bissau. Sera were screened for HIV-2 antibodies by ELISA and positive sera were further tested by Western blotting.

Results. Twenty cases of AIDS were found, 19 of which were HIV-2 seropositive (one not tested). The two most prevalent major symptoms were weight loss and diarrhoea. In the seroprevalence study antibodies to HIV-2 were demonstrated in 8,5 % (46/535) of prenatal women, 7,8 % (9/114) of women attending a family planning clinic, 5,1 % (22/430) of applicants for scholarships, 17,5 % (16/91) of blood donors tested during the first two months and 5,2 (10/189) of blood donors tested thereafter, 5,7 (2/35) of policemen, 33,3 % (11/30) of prostitutes, 5,9 % (13/217) of patients visiting an STD clinic, 15,7 % (97/614) of outpatients suspected of tuberculosis, and in 55,1 % (48/87) of patients suspected of HIV-related disease but not fulfilling the AIDS criteria.

Conclusion. The prevalence of HIV-2 infection is rather high in Bissau and AIDS appears to be an important manifestation of HIV-2 infection in this area.

IVth International Conference on AIDS, Stockholm 1988, t. 1, p. 317, 5009

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Detection of HIV-2 antibodies using five kits

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Objective : To evaluate the performance of the commercial HIV ELISA in detecting antibody to HIV-2.

Methods : A panel of 70 sera, positive for HIV-2 antibodies by WB and RIPA (presence of gp140) were tested by EIA HTLV-III (ABBOT), HTLV-III ELISA (DUPONT), ELAVIA 1 (PASTEUR), RAPID ELAVIA MIXT (with HIV-1 and HIV-2 antigens) (PASTEUR), and a competitive confirmatory assay. ENVACOR (ABBOT). The serum panel included 13 Europeans, 27 Cape Verdians and 30 other West Africans. 19 sera were from AIDS and ARC patients, 51 sera from asymptomatic subjects.

Results : ELAVIA 1 detected 33 % of the sera, ABBOTT HTLV-III 74 % and DUPONT 70 %. All the sera reacted in the rapid ELAVIA MIXT. In the ENVACOR test, 24 % reacted only with the core protein, 25 % only with the env protein and 20 % with both. All the HIV-1 ELISA's detected in a lesser amount HIV-2 positive sera from Cape Verdian origin ($p < 0,001$ ELAVIA 1, $p < 0,02$ DUPONT). Only 15 % of these Cape Verde sera reacted with the core protein in ENVACOR versus 78 % of the other West African sera ($p < 0,001$). The ABBOTT HTLV-III EIA was more efficient in detecting AIDS and ARC patients ; DUPONT test detected most of the asymptomatic subjects ; for ELAVIA 1 there was no difference between both groups.

Conclusion : The results of this study could reflect divergence between Cape Verdian and other West African HIV-2 isolates. HIV-1 antibody test kits are not equally efficient in detecting HIV-2 positive sera. A significant proportion of HIV-2 positive subjects will not be detected by using HIV-1 screening tests.

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Retrovirus infection in Guinea-Bissau, a population study

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Objectives. To determine the extent of HIV-2 infection in the general population of Bissau, to identify risk factors for transmission and to get an indication of the influence of retrovirus infection on the general morbidity and mortality of the area.

Methods. By random sampling 100 houses were selected in three adjacent parts of Bissau. The families living in the chosen houses were informed and asked to participate, and if consenting, all family members were interviewed, physically examined and blood was taken on filter paper; — Blood samples are to be analyzed in HIV-1 and HIV-2 ELISA, if reactive confirmed by Western blot and immuno-fluorescence.

Results. Of 1 501 persons, 1 330 (88.6 %) participated in the study. Among these 71 were found to be HIV-2 ELISA positive (Diagnostics Pasteur). The confirmatory results are not completed (Jan 88), but the trend is that more than 80 % of samples reactive in HIV-2 ELISA can be confirmed in immunofluorescence (CEM, +/- infected with HIV-2/LAV-2). — Twenty six women and 32 men are HIV-2 ELISA positive, among these are 7 couples. There are no clear cases of vertical transmission, but at least one confirmed case of HIV-2 in a child of 1 year who has received a blood transfusion. Less than half of the HIV-2 ELISA positive persons were without signs or symptoms of any disease.

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Epidemiological and clinical survey of HIV-2 prostitutes in South Senegal

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Objective. To evaluate the risk of infection and the pathogenicity of HIV-2 in an high prevalence risk population.

Methods. In our preliminary study, 33 prostitutes from Casamance were found HIV-2 antibody positive and were clinically followed since 1985. We then in July 1987 established an age matched cohort of 110 prostitutes residing in this area and monthly attending the STD clinic for clinical evaluation. Most of the HIV-2 positive prostitutes of the preliminary study were included in this cohort for prospective study.

Results. At enrolment, 39 % of the prostitutes were HIV-2 infected. HIV-2 seropositivity was associated with age, the HIV-2 positive prostitutes being older than the HIV-2 negative ones, but no significant association was found with the duration of prostitution, number of clients, history of immunization, surgical intervention or scarifications. Comparing the clinical records, there was no difference between HIV-2 positive and negative groups. None of the HIV-2 positive prostitutes showed any signs or symptoms associated with immunodeficiency.

Conclusion. These data are in accordance with a similar study conducted in Dakar where the HIV-2 prevalence is lower. Considering the studies published on clinical surveys of HIV-1 infected prostitutes in Central Africa, HIV-2 seems to be less pathogenic than HIV-1, or at least to have a longer latency period.

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Isolation and characterization of HIV-2 from West African patients

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Objective. Determination of HIV-2 prevalence, isolation of HIV-2 strains, determination of their growth properties on lymphocytes, macrophages and other cells, isolation of their proteins and comparison with other HIV-2 strains.

Methods. HIV-2 prevalence was determined using an HIV-2 - specific immunofluorescence assay. HIV-2 strains were isolated from the peripheral blood. Growth of the strains on lymphocytes was assessed as described by von Briesen *et al.* (1), the growth on macrophages was determined using monocytes from peripheral blood which were allowed to mature *in vitro* (2).

Results. In Germany, HIV-2 cases are still rare, but include a Gambian dying of exclusively neurological symptoms. Virus isolates were recovered from this patient and from asymptomatic West-Africans. With respect to *in vitro* growth properties and cytotoxic activities all HIV-2 strains isolated so far were considerably different from the HIV-2 strain originally isolated by Montagnier and coworkers. Differences were also observed with respect to virus-specific proteins. The strains were, therefore, molecularly cloned (see 3). The results prove that HIV-2, like HIV-1, is a highly divergent family of viruses.

References.

1) von Briesen *et al.* (1987) *J Med Virol* 23, 51-66

2) von Briesen, *et al.*, this conference

3) Kühnel *et al.*, this conference

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A. Sow¹, G. Diop¹, S. Mboup¹, M. T. Sow¹, R. Marlink², P. Kanki², J.-L. Romet-Lemonne², M. Essex²

The evaluation of AIDS in HIV-2 endemic areas

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Objective. To evaluate the seroprevalence of retroviruses among suspected AIDS cases in Dakar, Senegal.

Methods. We analyzed 68 hospital cases referred to Pr. Mboup's laboratory in 1986-87.

Results. 44 of these 68 individuals actually fulfilled the WHO criteria for AIDS by these clinical criteria. Serologic analysis by WB and/or RIP data follow :

<i>Antibody Positive for</i>	<i>Suspected AIDS-Like Illness</i>	<i>WHO Criteria AIDS Cases</i>	<i>% Suspected AIDS-Like Cases with WHO Criteria for AIDS</i>
HIV-1	19 (27.9)	17 (38.6)	89.5

HIV-2	14	(20.6)	9	(20.5)	64.3
Both	4	(5.9)	3	(6.8)	75.0
Neither	31	(45.6)	14	(34.1)	48.4
Total	68	(100)	44	(100)	64.7

Conclusions. (1)

- 1) 17 of 44 WHO-defined AIDS cases were seropositive for HIV-1.
- 2) 14 of 44 WHO-defined AIDS cases were seronegative to *both* HIV-1 and HIV-2, emphasizing the difficulty in attributing "cause and effect" to the evaluation of AIDS in West Africa.
- 3) There was no relationship between ill HIV-2 seropositive individuals who did *not* fulfill WHO criteria (9/44 compared to 5/24 ; odds ratio = .93, p = .97), causing us to consider that HIV-2 disease manifestations may not be adequately monitored by WHO criteria for AIDS in this setting.

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Outcome of an AIDS cohort in West African setting. A Dakar collaborative study on 60 cases : 1986-1988

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Objectives. To describe the outcome of AIDS patients in African environment, compare frequency and severity of pathologic episodes due to HIV-1 or HIV-2 and analyse socio-economic impact of the disease.

Methods. Since June 1986 after the first publication of an AIDS case in Senegal, more than hundred patients suspected to be infected with HIV are admitted in the main Clinics of the University Hospital Center (CHU) of Dakar. By December 1987, 60 among the followed had positive antibodies testing (ELISA and WB) and are the background of this paper. Follow up period starting from June 1986 will continue until June 1988. All events (opportunistic diseases, deaths, laboratory analyses and medications) are computerized. Recruitment period is from June 1986 to December 1987. Among the cases 43 males and 16 females ; 26 were infected with HIV-1, 28 with HIV-2 and for 5 cases we observed a double serological profile.

Conclusion. By December 1987, 31 of the followed died so, the case fatality rate (CFR) is 52 % a year. A dramatic decrease of family income is observed.

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Enzyme immunoassays for antibodies to HIV-2 SBL-6669 and HTLV-IV

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ELISAs were developed for antibodies to HIV-2 using as antigens disrupted virions of HIV-2 SBL-6669 and HTLV-IV, respectively. 300 sera from West African outpatients in Bissau suspected of tuberculosis were tested by these two assays as well as by a commercially available anti-HIV-2 ELISA (ELAVIA II). 50 sera were positive in all three ELISAs as well as in Western blot (WB) test against HTLV-IV and HIV-2. The ELISAs based on SBL-6669 and HTLV-IV antigens had a specificity of 99.6 % (1 false positive among 250 negative sera) whereas the specificity of ELAVIA II was 94.6 %

using the recommended cut off value. Another 58 sera from West African patients clinically suspected of AIDS or HIV-related disease were tested for HIV-2 antibodies by WB and in ELISA against SBL-6669 and HTLV-IV antigens and all of the 30 sera which were positive by WB were found to be positive in both ELISAs. Testing of 100 HIV-1 positive sera, 50 of them from East Africa and 50 from Sweden, in the SBL-6669 and HTLV-IV ELISAs showed a higher degree of cross-reactivity among the East African sera (76 % and 74 % respectively) as compared to the Swedish sera (30 % and 32 % respectively).

Conclusion. The SBL-6669 and the HTLV-IV ELISAs had a high sensitivity (100 %) for detection of HIV-2 antibodies and a high specificity for HIV antibodies.

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Seroepidemiology of HTLV-I in Ivory Coast

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Objective. To evaluate the HTLV-I prevalence and to identify risk groups in Ivory Coast.

Methods. Approximately 3 000 sera from different groups (symptomless individuals, prostitutes, hospitalized patients, prisoners, etc...) and several region of Ivory Coast were tested for antibody to HTLV-I by a indirect immunofluorescence assay using the HUT 102 B2 cell line. The confirmations of doubtful and positive sera were obtained by Western blot using the same HTLV-I strain. Sera were considered as positive for antibody to HTLV-I when reactive to the *gag* encoded proteins p19 and p24.

Results. The prevalence in the healthy adult population was 1.6 % (1.5 % for the males and 1.7 % for the females), with the same prevalence in either rural (1.7 %) or urban area (1.5 %). The prevalence in the prostitutes groups varied from 5.7 % to 10.5 % in three areas and was decreasing with increasing socioeconomic level. The prevalences for diabetic patients and transfused patients with sickle cell anemia were 1.8 % and 3.8 %, respectively. The seroprevalence for patients with tuberculosis was 3.8 %.

The highest prevalences were observed in neurologic patients (10.5 %) and lepers (13.8 %).

The seroprevalence increases with age from 0.6 % to 14.3 % in the general population.

Conclusion. This study shows that HTLV-I is widely spread in Ivory Coast. The evaluation of the risk of coexposures to HTLV-I , HIV-1 and HIV-2 is under study.

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HIV-1 in prostitutes in Cameroon

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Objective. To evaluate the seroprevalence of HIV-1 and HIV-2 among certain population groups in Cameroon.

Methods. 596 serum samples were collected from 4 cities in 1986 from healthy adults (N = 150), hospitalized patients (N = 204), prostitutes, STD patients and prisoners (N = 242), and screened by ELISA (Abbott) to HIV and then by immunoblot and/or RIP to HIV-1 and HIV-2 antigenic probes. In 1987 a second survey was completed among healthy adults (N = 370), hospitalized patients (N = 119) and prostitute/prisoners (N = 88) from the central and northern areas of the country. All sera were tested by immunoblot to HIV-1 and HIV-2.

Results. None of the sera from 1986 tested positive for HIV-1 or HIV-2. In the separate survey in 1987, 4 of 53 prostitutes and one prisoner have demonstrated sero-positivity for HIV-1 and none for HIV-2.

Conclusions. Although separate populations were surveyed, this data suggests that HIV-1 is an increasing problem in certain populations in Cameroon.

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Prevalence of HIV-1 and HIV-2 in Benin

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Objective. To survey selected populations in Benin for the presence of HIV-1 and HIV-2 ; and to identify risk groups.

Methods. In May, 1987, 923 (M : F = 1.55) individuals from Benin were sampled for antibody reactivity to HIV-1 and HIV-2. All samples were analyzed by commercial ELISA and immunoblotted on HIV-1 and HIV-2 antigens in Dakar, Senegal.

Results.

	<i>n</i>	<i>HIV-1+</i>	<i>HIV-2+</i>	<i>HIV-1/2+</i>
Male prostitutes	133	4.5 %	3.7 %	0 %
Female prostitutes	11	0 %	0 %	0 %
tuberculosis	106	1.8 %	0 %	0 %
hospital patients	128	0.08 %	0 %	0 %
prisoners	200	0 %	0.5 %	0 %
military	100	1 %	0 %	0 %
health workers	126	0 %	0 %	0 %
pregnant women	83	0 %	0 %	0 %
blood donors	36	0 %	0 %	0 %

Conclusion. Low seroprevalence of both HIV-1 and HIV-2 are seen in Cotonou, Benin. Of the select groups sampled, female prostitutes appear to be at higher risk for infection with either virus. 10 of the 11 HIV-1 or HIV-2 positive prostitutes were not Beninois. We hope that prevention and control programs will be effective in limiting the spread of these viruses.

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