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Evaluation of a combination HIV-1/HIV-2 enzyme immuno assay on high-risk specimens in an HIV-2 endemic area

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Objective : The objective of this study was to evaluate an EIA designed to detect antibody to both HIV-1 and HIV-2 (the Genetic Systems HIV-1/HIV-2 EIA) in a population of prostitutes in Dakar, Senegal.

Methods : A total of 302 specimens from 302 prostitutes was tested with the HIV-1/HIV-2 EIA. The results were compared to results obtained with an HIV-1 EIA, an HIV-2 EIA, and with Western blots for both types of virus.

Results : In this population, 254 specimens were non-reactive by all 3 EIA's and were negative by both Western blots. There were 27 specimens that were positive for antibody to HIV-1, HIV-2 or both by Western blot. All 27 were reactive by the HIV-1/HIV-2 EIA. Twenty-six of the 27 blot-positive specimens were reactive in the HIV-1 EIA and the HIV-2 EIA. One positive specimen was also reactive in the HIV-2 EIA but non-reactive in the HIV-1 EIA (positive by HIV-2 Western blot and indeterminate by HIV-1 Western blot). Six of the remaining 21 specimens were reactive by the HIV-1/HIV-2 EIA. Of these, 2 were negative by both Western blots (1 was also reactive in the HIV-1 EIA, the other was non reactive in both of the 2 other EIA's), 3 were indeterminate by both Western blots and reactive on both EIA's, and 1 was indeterminate by HIV-1 Western blot and negative by HIV-2 Western blot (non reactive on both the HIV-1 and the HIV-2 EIA). The remaining 15 specimens were non-reactive in the HIV-1/HIV-2 EIA. In this group, 7 specimens were negative by both Western blot (1 reactive in both HIV-1 and HIV-2 EIA's, 2 reactive in the HIV-1 EIA only, and 4 were reactive in the HIV-2 EIA only). The remaining 8 specimens were non-reactive in all 3 EIA's ; 3 were HIV-1 Western blot indeterminate/HIV-2 Western blot negative ; 4 were HIV-1 Western blot negative / HIV-2 Western blot indeterminate, and 1 was HIV-1 and HIV-2 Western blot negative

Discussion and conclusions : In this study, the HIV-1/HIV-2 EIA and the HIV-2 EIA correctly identified all Western blot-positive specimens. In contrast, the HIV-1 EIA misclassified 1 specimen. The number of false-positive reactions seen with the HIV-1/HIV-2 EIA (6) was lower than the number of false positive reactions seen with the HIV-1 EIA (7) or the HIV-2 EIA (8). Some of the false positive specimens gave false positive reactions in more than one of the EIA's.

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Evolution of laboratorial parameters in HIV-2 infected people

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Objective : To evaluate about laboratorial evolution in 60 HIV-2 seropositive people in Guinea-Bissau kept under surveillance since 1986.

Methods : Some of these seropositive persons are being checked for the fifth time in January/February 1991. The sera were tested by ELISA and confirmed by WB and/or Ripa. Lymphocyte phenotype were determined by monoclonal antibodies and B²-microglobuline were determined by ELISA.

Results : We shall present the preliminary results of the evolution of Western blot profiles B2 microglobulin and the number and percentage of CD4+ and CD8+ cells in these HIV-2 seropositive people. Up to 1990 we observed that the numbers and percentage of CD4+ T cells was lower than that of the control group. The blood level of B2 microglobulin was also higher than normal in these seropositive people. We shall present a table of the evolution of the various antibodies to core and envelope proteins and anti-Polimerase during the period of the follow-up.

Conclusion : The change in the laboratory parameters of the people infected by HIV-2 seems to us similar to that of HIV-1 seropositive people, although the evolution in the former seems slower.

VIIth International Conference on AIDS, Florence, 16-21 June 1991. Abstract Book t. 2, p. 180, W.A. 1352

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Questions about differential diagnosis of HIV-1 and HIV-2 infections in sera from Guinea Bissau

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Objective : To discriminate HIV-1 and HIV-2 infections in serum samples from Guinea Bissau.

Methods : We evaluated the sera of 32 ELISA positive (ELAVIA HIV-1 and HIV-2, Pasteur) blood donors from the Blood Bank of "S. Mendes" Hospital of Bissau by assays for HIV-1 and HIV-2 antibodies (Western blot and Peptilav 1-2, Pasteur).

Results : All tests gave superimposable responses in 21/32 sera. In particular, 14 sera (44 %) were HIV-2 positive, 1 (3 %) HIV-1 positive, 5 (16 %) HIV-1 and HIV-2 positive, 1 (3 %) HIV-1 and HIV-2 negative. In the remaining 11 sera (34 %) 3 were positive by ELISA (2 HIV-2 and 1 HIV-1 and HIV-2) and indeterminate by Western blot HIV-1 and HIV-2, showing antibodies to at least one core protein (1 out of these 3 samples had antibodies to one envelope protein of HIV-2. p105). The other sera (8) were borderline by ELISA (4 HIV-1, 2 HIV-2, 2 HIV-1 and HIV-2) and by Western blot analysis showed antibodies to one or two core proteins of HIV-1 ; out of these 8 sera, 5 had antibodies also to core proteins of HIV-2 and 1 had antibodies to an envelope protein of HIV-2 (p105). These 11 sera were Peptilav 1-2 negative.

Conclusions : Peptilav 1-2 is useful in the preliminary discrimination of HIV-1 and HIV-2 infection.

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Immunologic disturbances during retroviral infection in Dakar

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Objective : To determine immunologic disturbances observed during retroviral infection in Dakar. To estimate variations recorded in terms of stage of the disease. To inquire into predicting factors of an unfavourable development.

Methodology : During one year, a retroviral serology was carried out with 216 patients admitted at the Department of Infectious Diseases and presenting one or several signs of the WHO clinical definition,

as 43 of their husband or wif. Where serology has revealed positive, CD4, CD8, IgG and B2 microglobulinemia have been proportionned.

Results : 156 patients (107 HIV-1, 34 HIV-2, 8 double profile). The average tale of CD4 is higher with asymptomatic cases (442/ul for HIV-1 and 822/ul for HIV-2 than with patients themselves (254/ul for HIV-1 and 234/ul for HIV-2) ; The B2 microglobulinemia is much more higher with patients. The immunologic disturbances observed are related to the stage of the disease and seem more relevant for HIV-1 than for HIV-2. Where development resulted into death and comparatively to average rates, the following elements are recorded : diminution of lymphocytes, moreover that of type CD4 (DS), high microglobulinemia (DS) and little modified IgG. The CD4 are much more fallen apart for HIV-2.

Conclusions : Besides, at the last stage of the disease, those modifications seem more stressed for HIV-2 probably due to a longer development period for this.

VIIth International Conference on AIDS, Florence, 16-21 June 1991. Abstract Book t. 2, p. 333, W.C. 3150

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HIVs associated with STDs in male outpatients in Dakar, Senegal

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Objective : To determine prevalence of the most frequent STDs and their association with HIV-1 or HIV-2 seropositivity.

Methods : From October 1989 to January 1991, all male outpatients visiting an STD clinic were enrolled in the study. HIV and syphilis serology were performed on each of them. Bacteriological culture for Neisseria gonorrhoeae and Haemophilus ducreyi was performed for all ; ELISA and IFA for Chlamydiae were performed to confirm the clinical diagnosis.

Results :

<i>Clinical state</i>	<i>n</i>					<i>Syphilis</i>	
		<i>HIV-1</i>	<i>HIV-2</i>	<i>HIV-1+2</i>	<i>Total</i>	<i>TPHA + RPR+</i>	
Chronic urethritis	240	6	3	2	11 (4.6 %)	10 (4.2 %)	
Acute urethritis	335	3	1	0	4 (1.2 %)	11 (3.2 %)	
Genital ulcers	140	2	1	1	4 (2.8 %)	21 (15.0 %)	
Others	104	0	0	0	0 (0.0 %)	3 (2.9 %)	
<i>Total</i>	819	11	5	3	19 (2.3 %)	45 (5.5 %)	

Conclusion : Patients with chronic urethritis show a higher rate of HIV seropositivity than the others. We noted that HIV-1 seroprevalence is higher than HIV-2 among male STD patients living in an HIV-2 endemic area.

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Serodiagnosis of HIV by recombinant env and vpx/vpu peptides

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Objectives : To evaluate the utility of various serologic markers for use in distinguishing HIV-1 from HIV-2 infection. These included recombinant expressed env peptides from HIV-1 and HIV-2 ; and recombinant-expressed vpx and vpu proteins the unique gene products of HIV-2 and HIV-1 respectively.

Methods : Serum samples were obtained from West African individuals previously serodiagnosed by whole viral lysate immunoblots to HIV-1 (IIIb) and multiple HIV-2 isolates (MS-U937, NIH-Z and ST). Semi-purified recombinant-expressed HIV-1 (566) and HIV-2 (966) env proteins, homologous with the N-terminal region of gp41 (Zweig *et al.* 1988) and gp35 (Zuber *et al.* 1990), have been described. Recombinant-expressed vpu (HIV-1) (Matsuda *et al.* 1989) and vpx (HIV-2) (Yu *et al.* 1989) have been described. All recombinant expressed proteins were analyzed by immunoblot.

Results : The HIV-2 seropositive samples detected the HIV-2 recombinant env peptide (996) 100 % (40/40) of the time with 0 % (0/40) cross-reactivity to the HIV-1 peptide (566). HIV-1 seropositive samples from 4 diverse geographic origins demonstrated 100 % reactivity (44/44) to the HIV-1 specific peptide (566) with substantial cross-reactivity 63 % (28/44) to 996. Dual-reactive sera detected both recombinant peptides 100 % (31/31).

Reactivity of HIV-2 positive samples on recombinant expressed vpx was much less, with 8.4 % (19/227) reactivity and no reactivity on vpu (0/227), 50 HIV negatives were vpx negative.

Conclusions : The 566 HIV-1 env peptide was found to be type-specific, whereas the 996 HIV-2 peptide demonstrated significant cross-reactivity. Vpx reactivity was not found to be useful in confirming HIV-2 infection in all of the cases. Its use as a prognostic marker is under evaluation.

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Direct measurement of incidence of HIV-1 and HIV-2 in female prostitutes in Senegal

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Objective : We have followed registered female prostitutes in urban centers in Senegal to better understand the epidemiology of HIV-2 infection. The direct measurement of HIV-2 and HIV-1 incidence allows for a better understanding of HIV population dynamics in this endemic area.

Methods : Sequential serum samples from prostitutes in Dakar and Ziguinchor were obtained for retrovirus (HIV-1, HIV-2 and HTLV) examination semi-annually. HIV serodiagnosis was performed with immunoblot, RIPA, recombinant env peptides of HIV-1 and HIV-2. All seroconversions were verified on standardized antigen.

Results : The cumulative seroprevalence in Dakar prostitutes was 9.5 % HIV-2, 2.4 % HIV-1 and 0.5 % HIV-1/2. Through evaluation of sequential samples on 1 033 of these women (> 3 200 samples) 2 100 person-years of observation from 1985-90. We determined the annual incidence for HIV-2 to be 8.1 per 1 000 per year (17 seroconversions / 2 099 seronegative person-years) The HIV-2 incidence rate was found to be similar over the 5 year period, with a constant rate over the 5 year period this would predict a doubling time of 11 years. Incidence of HIV-1 in this population was 4.8 per 1 000 per year ; this rate had doubled over the last 2 year period, indicating a doubling time of less than 5 years. Among Ziguinchor prostitutes the seroprevalence for HIV-2 was 34.0 % with an incidence of 40.0 per 1 000 per year. From 1987-90, 169 seronegative person-years were observed with 7 seroconversions. There was no incidence of HIV-1 during this period. This region has a significantly higher prevalence of HIV-2 and assuming a constant incidence over time the doubling period would be 8-9 years, comparable to that in Dakar. Results of clinical evaluation of these women continues to indicate a marked difference in disease development between HIV-1 and HIV-2 (Marlink, Thior, and Siby *et al.*).

Conclusion : This is the first report of incidence of both HIV-1 and HIV-2 from the same geographic area and study population. Despite higher prevalence of HIV-2 the incidence in the Dakar cohort indicates a lower rate of new infections by HIV-2 as compared to that of HIV-1. Our results support other epidemiologic, clinical and virologic findings demonstrating significant differences between HIV-1 and HIV-2.

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HIV-2 in rural Senegal. Prevalence, clinic and immunology

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Objective : To determine public health impact of HIV-2 in rural zone.

Methods : Randomized serosurveys were performed among adults (> 20 years) in South western, South eastern and Northern parts of Senegal. Screening was done by ELISA (Elavia Mixt, Diagnostics Pasteur) and confirmation by WB (New Lav Blot 1 and 2). An exhaustive study among adults was conducted in one village from the highest prevalence zone. Each seropositive person was matched (age and sexe) with 3 control people and their clinical and immunological features analysed. (EPI-Info program).

Results : During the first study, 1 628 samples were tested. Prevalence were 0 % in Northern zone, 0.3 % in South eastern and 1 % in South western zones. In the village studied 3 239 adults were tested. 27 were found seropositive, 25 HIV-2 (13 men, 12 women) and 2 HIV-1 (2 men) ; 23 seropositive and 69 control people were examined. 9 seropositive and 3 control people presented with clinical symptoms (OR = 14). The main immunological features were :

	<i>RB Cells</i>	<i>CD4 cells</i>	<i>CD8 cells</i>	<i>CD4/8</i>	<i>IgG</i>
HIV-	3.97 10 ⁶ /µl	1 256 n/µl	734 n/µl	1.9	18 g/l
HIV+	3.71	1 028	1 028	1.1	25

Values statistically different (ANOVA P < 0 ;06° WBC, IgA, IgM, IgE and β2m were comparable.

Discussion and conclusion : HIV-2 prevalence presented a gradient in rural zones of Senegal. HIV-2 infection was related to clinical risk and perturbations of immune parameters.

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Antigenic differences and antibody crossreactivity between HIV-1 and HIV-2

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Objective ; The evaluation of the antibody (AB) crossreactivity for HIV-1 and HIV-2 antigens and the HIV-1 and HIV-2 antigenic difference.

Methods : All the reactive samples (619), collected at the Blood Bank of Bissau (Guinea Bissau) since 1987, were tested by recombinant and synthetic peptides based EIAs. Double Western blot (WB) for HIV-1 and HIV-2 were performed on more than 200 HIV-2 positive samples.

Results : The double WB showed that AB reactivity for homologous antigens is present with at least one of the structural proteins and is mainly directed to p24 and p31 (50 %). 48 % of samples reacted with all the HIV-1 proteins, while only 2 % with gp160 and/or gp120. The use of recombinant or synthetic peptide based EIAs reduced the non specific reactions and allows to divide the sera in highly (0.7 %) and low (20.3 %) crossreactive.

Discussion and Conclusions : This study indicates that the AB crossreactivity is high. The difference in the steric conformation of native and synthetic antigens may account for the lack of binding of not specific, less affine AB. The grouping the sera based on their reactivity can be related to different strains of viruses.

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Prospective study of the natural history of HIV-2

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Objective : To determine the natural history of HIV-2 infection, especially as compared to HIV-1 infection, by comparing the incidence of clinical and laboratory abnormalities between seropositive and seronegative women.

Methods : We have enrolled and followed female prostitutes visiting a nationally supported STD clinic in Dakar, Senegal, since 1985. HIV-2+, HIV-1+ and HIV-1/2+ prostitutes have been stratified (1:2 ratio) with HIV-prostitutes by age, nationality and year of clinic registration. In Dakar, with 9.5 % HIV-2 and 1.8 % HIV-1 overall seroprevalence, we have collected repeat clinical data 354 on prostitutes. In a satellite STD clinic in Ziguinchor, Senegal, with a 34 % seroprevalence for HIV-2, we have attempted to enroll all the registered prostitutes since 1986, now totalling 196 prostitutes. DTH skin testing and lymphocyte subset determinations have been obtained.

<i>Results</i> :	<i>HIV-2+</i>	<i>HIV-1+</i>	<i>HIV-1/2+</i>	<i>HIV negative</i>
Overall Clinical Outcomes	n = 166	n = 24	n = 5	n = 355
Person-Years Observed	PYO = 39	PYO = 61	PYO = 9	PYO = 926
ARC	2	2	0	0
AIDS	1	2	1	0

By defining "lost to follow-up" as those prostitutes not seen in the past 12 months or those without travel history of leaving the country with a healthy status, we have been able to account for 90 % of those prostitutes initially being enrolled in our clinical cohort. The mean T4 values on repeat testing of a subset of HIV-2 seropositives were not significantly different one year later.

Discussion and Conclusions : To date, there is a significant difference in disease incidence in this cohort when HIV-2+ versus HIV-1+ individuals are compared. Evaluation of immunologic abnormalities over time appear to parallel these observations.

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Association between HTLV-1 and HIV-2 infections in Guinea-Bissau

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Objectives : To determine the prevalence of HTLV-I infection in Guinea Bissau and its association with HIV-2 infection.

Methods : Sera from 992 consecutive hospitalized patients at the medical wards of the National Hospital in Bissau and from 512 healthy policemen in Bissau, collected in 1989 and 1990, were tested for HIV-2 and HTLV-1 antibodies by ELISA followed by Western blot confirmation.

Results : Among hospitalized patients the seroprevalence of HIV-2 was 20.4 % and of HTLV-I 6.9 %. The prevalence was higher in women (25 % and 10.5 % respectively) than in men (16.9 % and 4.1 % respectively). Among policemen the seroprevalence was 13.7 % for HIV-2 and 3.7 % for HTLV-I. HTLV-1 infection was more common in HIV-2 seropositive patients (14.3 %) as compared to seronegative patients (5.3 %) and in seropositive policemen (7.1 %) as compared to seronegative policemen (3.2 %). There was no relation between HTLV-1 seropositivity and the clinical severity of HIV-2 infection among the patients.

Conclusion : An association exists between HTLV-1 and HIV-2 infections in Guinea-Bissau.

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Critical analysis and the future of National AIDS Programme in Africa

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Objectives : To evaluate what have been done to improve the effectiveness of National AIDS Programme in African countries.

Methods : Assessments, reprogrammings, realizations and constraints of National AIDS Programme in Africa constitute the basis of that study. Their analysis after the opportunity to review most of strategies already applied against AIDS in Africa.

Results : Many countries have now inadequacies and specificities and that study permitted to propose adapted strategies necessary for improving the struggle against AIDS in African countries but especially the modification of sexual behaviour.

Discussions and Conclusions : That study is very important in account of lack of money and could help to make AIDS Programme more effective with available and less expensive ressources of African countries.

VIIth International Conference on AIDS, Florence, 16-21 June 1991. Abstract Book t. 1, p. 464, M.D. 4296

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HIV-2 infection in Bissau, developments from 1987 to 1989

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Objective : To monitor the dynamics of the HIV-2 infection in a high-prevalence population.

Methods : In 1987, 100 houses were chosen at random in 3 parts of Bissau, and the c.1 500 inhabitants formed the basis of an open cohort to be followed prospectively every 2 years. All inhabitants who consented were interviewed, physically examined, and gave a blood sample collected on filter paper. All samples were tested for antibodies to HIV-1 and HIV-2. The procedure was repeated in 1989.

Results : This population was only affected by HIV-2. In 1987 the HIV-2 seroprevalence among adults was 8.9 %, in 1989 it was 10.4 %. The number of HIV-2 seropositive persons, who exited from the cohort was very similar to the number who entered, 29 versus 27. Especially was the number of HIV-2 seropositives who died equal to the number who seroconverted, namely 7. The incidence of HIV-2 infection was 0.95 % per year, giving a surviving individual a 19 % risk of acquiring HIV-2 over a period of 20 years. The 7 seroconverters were 2 men and 5 women, 5 in the age group 20-29 years. Six of the 7 were not co-habiting with a sexual partner at the time of interview. The seroconverters reported significantly more often a history of STD than did seronegatives.

Conclusion : The HIV-2 infection is highly prevalent in the general population in Bissau, but the rise in prevalence over a 2-year period is not statistically significant. Seroconversions take place mostly in the 3rd decade of life, and are associated with a history of STD.

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Human herpesvirus-6 and HIV infection in Africa and in Europe

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HHV-6 was first thought to be a cofactor in disease caused by HIV infection, then it was shown to suppress near totally the replication of HIV-1.

Objective : To examine the differences in expression of HHV-6 in HIV-1 or 2 antibody positive individuals with or without clinical manifestation, in Africa and in Europe.

Material and methods : Blood samples (641) from individuals (controls and patients) living in three areas (France, Ivory Coast and Senegal) were analysed for the presence of HIV antibodies by ELISA and Western blot, and for HHV-6 antibodies by indirect immunofluorescence assay. A serum giving an HHV-6 titer 20 was considered positive.

Results :

	France			Ivory Coast			Senegal	
	HIV-1+	Anony mous HIV-	Blood donors	HIV+ patients	HIV+ symptom free	Pregnant women	HIV-2 symptom free	Pregnant women
No of samples	142	95	154	50	50	50	50	50
Geom. mean titer	30	16	33	104	125	153	55	34
Prevalence (%)	59.8	30.5	70.1	86.0	88.0	78.0	70.0	64.0

Conclusions : Prevalences and geometric mean titers varied according to areas : both were notably higher in Ivory Coast. French population of anonymous individuals at risk but HIV showed a significantly lower prevalence than HIV+ individuals or control group. No significant difference was observed in prevalence and in geometric mean titer between HIV+ groups and control groups, nor in HIV-1 and HIV-2 populations comparatively to their respective control group. There was no significant association between higher titers of HHV-6 antibody and HIV.

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HIV-2 infection in a rural community in Guinea-Bissau

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Objectives : To investigate the epidemiology and prognosis of HIV-2 infection in a rural community in Guinea-Bissau

Methods : A remote rural community with a population of over 7 000 was enumerated. Questionnaires were administered and sera obtained from more than 2 500 adults. All deaths have been registered since serological screening.

Results : The overall prevalence of HIV-2 infection in adults was 8.3 % ; it was 19.5 % and maximal in males between 45 and 54 years old and significantly lower in older subjects. A history of genital ulcer disease was significantly associated with infection in males (P = 0.02). In females significant risk factors included a history of travel to the capital (P = 0.01) and marital status — with an increased prevalence in “single women” (P < 0.01). A considerable excess of mortality was observed among the seropositives during ten months of follow-up (R.R 7.5 ; p < 0.001).

Conclusions : In this community HIV-2 shows similar epidemiological features to those found in some foci of HIV-1 infection in Africa. The infection is a significant cause of mortality in this high prevalence area.

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Comparative molecular studies on SIVs from African green monkeys from central and western Africa.

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Objective : To study the genetic variability of SIV_{agm} isolates from Central and Western Africa.

Methods : Cell culture, Hirt extraction of DNA, Polymerase chain reaction. Southern blot analysis and direct sequencing of PCR amplified fragments.

Results : Six viral isolates from AGM from Senegal and eight viral isolates from AGM from Central African Republic (CAR) have been compared on the basis of PCR amplification. Southern blot analysis and direct sequencing of PCR amplified fragments. SIV_{mac}, SIV_{agm}Ty0-1, HIV-2/Rod and HIV-1/Bru have been used as controls throughout our experiments. All these viruses clearly belong to the SIV_{agm} subtype. In most of the cases DNA from the cells infected with these isolates could be amplified by using primer pairs conserved in SIV_{mac}, SIV_{sm}, SIV_{agm}Ty0-1 and HIV-1/HIV-2 and SIV_{agm} consensus sequence within *gag*, *pol* and *env* regions. Some of the isolates from both geographic regions could not be amplified at all with some of the primer couples. Detailed restriction analysis and comparison of the sequence of PCR amplified fragments shows a high degree of genetic variability of these viruses from CAR and Senegal. The characterized SIV_{agm} isolates seem to be closer to SIV_{mac}/HIV-2 than to HIV-1.

Conclusion : SIV_{agm} from CAR and Senegal display a high degree of genetic diversity. Such heterogeneity is even more important between strains from CAR, Senegal and East Africa than to the one observed among isolates from one single country.

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Seroprevalence of HIV-1 and HIV-2 in Republic of Guinea-Bissau (RGB) and Republic of Cape Verde (RCV)

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Objective : HIV-1 has a worldwide distribution while HIV-2 seems to be more prevalent in West Africa. To better understand the existence of both viruses in Portugal and because of the past relationship between Portugal and West African countries, we studied the seroprevalence of HIV-1 and HIV-2 in RGB and RCV.

Methods : We collected 553 blood samples in RGB and 1 342 in 4 of the 9 RCV islands in 1987 and 1988, respectively, from healthy volunteers, in-patients, imprisoned people and prostitutes. Screening for antibodies was done by ELAVIA-I and ELAVIA-II. Confirmations were done by Western blot (Pasteur and Dupont) for cases with O.D \geq 0.25. PeptiLav was used when sera were positive for both viruses.

Results : In RGB we obtained a seropositivity of 0.52 % for HIV-1 and 10.3 % for HIV-2. Only one sample showed gp36 and gp41 in Pepti-Lav. In RCV there was a seropositivity of 0.22 % for HIV-1 and of 1.12 % for HIV-2.

Conclusion : The results confirm a seroprevalence of HIV-2 infection and a very low level of HIV-1 positivity, both in RGB and RCV.

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HTLV-1 in blood donors and neurology patients. Observations from Dakar, Senegal

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Objective : To obtain insight in the epidemiology of HTLV-I infection in blood donors and patients from a department of neurology at the urban area of Dakar, Senegal

Methods : 434 blood donations were screened and blood samples from 121 patients with various neurological disorders, Vironostika HTLV-I enzyme immuno assay (Organon Technika) was employed for initial and repeat testing. Repeat positive samples were confirmed by Western blot (WB) and radioimmunoprecipitation (RIPA) technique. All samples were tested for antibodies for HIV-1 and HIV-2.

Results : In the donor population, eight samples (1.8 % of total) were repeatedly positive, six strongly and two weakly. In all eight samples, various bands were seen in WB (indeterminates). RIPA confirmation gave minimally three samples as positive. This amounts to 0.8 % of total. No concomitant

HIV-1 or 2 infection was found in these samples. In the *patients' sera*, six samples (5 % of total) were repeat positive in EIA ; three strongly and three weakly. Two out of the six were classified as reactive in WB as well as in RIPA. The other four showed many bands in WB ; RIPA results showed minimally three more positives. In total five out of 121 (4 % of total).

Two out of five HTLV-I positive samples had a confirmed HIV-1 infection at the same time. All five patients belonged to a different neurological diagnostic entity.

Conclusion : As to-date little is known about the epidemiology of HTLV-I in Senegalese donors or patients, further studies in this field seem necessary.

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AIDS Control Programmes in the context of STD control and primary health care in developing countries

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AIDS Control interventions to reduce the sexual transmission and acquisition of HIV have been organised in the context of national STD Control Programmes and primary health care programmes. A blueprint to elaborate, monitor, implement, cost, finance and evaluate national STD/AIDS Control Programmes has been elaborated. Three levels are identified in the structures of the programmes : a management and planning level, an expert unit and an implementation level including STD clinics, family planning, mother and child care and primary health care centers. Activities and strategies are designed for those different levels. STD/AIDS Control Programmes are under implementation in 20 different developing countries. An analysis of the recurrent cost implications, which can be used for further planning, is made. A comparison will be made between the recurrent costs in different developing countries. Sustainability, feasibility and impact evaluation will be discussed in the context of decreasing health care budgets in developing countries and operational examples will be presented.

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Alpha Wade, A. D. Sarr, A. A. Diallo, L. Diakhaté, A. M. Coll Seck, Ibra Ndoye, F. Diadihou, A. Kane, A. Gaye, A. Thiam, I. Sall, R. Sallier, S. Mboup
Sentinel surveillance of HIV infection in Senegal

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Objective :To establish sentinel serosurveillance as part of a network to survey the evolution of the HIV epidemic ; this will allow description of the actual status of the HIV epidemic, and evaluation of trends by serial evaluations.

Methods : Consecutive sampling of all subjects within a group was employed until the predetermined sample size was reached. This standardized collection allows the comparison of estimated prevalence rates in various sentinel groups within a site and between geographic sites.

Results :

<i>Groups</i>	<i>N</i>	<i>Dakar (%)</i>		<i>Kaolack(%)</i>		<i>St-Louis(%)</i>		<i>Ziguinchor(%)</i>	
		<i>HIV-1</i>	<i>HIV-2</i>	<i>HIV-1</i>	<i>HIV-2</i>	<i>HIV-1</i>	<i>HIV-2</i>	<i>HIV-1</i>	<i>HIV-2</i>
Blood donors	3 299	0.8	0.4	0.1	0.2	0.0	0.0	0.1	0.4
Pregnant	2 477	0.6	0.8	0.4	1.2	0.0	0.0	0.2	1.5

Hospitalized	693	10.8	4.1	0.9	3.5	1.0	1.0	0.7	4.9
Tuberculosis	1 006	2.6	1.9	0.8	2.5	0.0	2.6	1.3	4.2
Male STD	1 125	1.1	1.3	2.3	1.1	0.0	0.8	0.0	1.8
Prostitutes	1 125	3.9	5.1	6.7	18.9	1.9	7.4	0.4	20.3

Conclusion : The results confirm the predominance of HIV-2 in Senegal. The geographic site may be a discriminating factor (ex : the prostitute groups in Dakar and Kaolack show significant difference, $p < 0.0001$) ; migration may be a major factor in the spread of HIV (OR = 2.07 ; CI = 1.2-3.55 ; $p = 0.005$). These results will be useful in strategies for prevention.

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