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 Natural history of HIV-2 infection in a urban population from Guinea-Bissau

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Objective : Guinea Bissau is one of the West African countries where almost all the HIV infection people are HIV-2. Few studies are available documenting the natural history of HIV-2 infection in West Africa. The main aims of this study, supported by European Community (DG-XII/STD-2), is to know the natural history of this virus in a group of infected people from Guinea-Bissau.

Methods : A total of 96 HIV seropositive people were evaluated from 7/86 to 1/91. These individuals were HIV-2 and/or HIV-1/HIV-2 positive by ELISA, confirmed by WB and/or synthetic peptides. This study included demographic information and the study of various risk factors, opportunistic infections, other HIV related events, clinical manifestations, absolute T4 and T8 cell counts and T4/T8 ratio.

Results : Of 96 HIV-2 seropositive people evaluated, 25 (26 %) were women. During the first evaluation, these people shown risk factors such as blood transfusion, (18.9 %), scarification/tattooing (57.4 %), abortion (56 %), chirurgical interventions (34.7 %) and STD (38.9 %). 30 % of people presented with absolute T4 counts < 200, 25 % with T4 200-500 and 45 % with T4 > 500. Five years later, the clinical symptoms had evolved as follows : mucocutaneous infections (17.7 % to 27.8 %), lymphadenopathies (42.1 % to 91.7 %), pulmonary infections (1.0 % to 13.9 %) and other infections (5.2 % to 8.3 %)

Conclusion : Analysis of the data suggests that the studied risk factors may be associated with the transmission of HIV-2 in this populations. The observed variations in some clinical symptoms may be related to the pathogenicity of HIV-2.

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 t. 2, p. 308, PoC. 4381

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 HIV and STD infections among newly registered prostitutes in Dakar

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Objective : To evaluate HIV and STD infections in the newly registered prostitutes and the role of underground prostitution in the spread of these infections.

Methods : Site : STD clinic of the “Institut d’Hygiène Sociale” of Dakar
 Population : 190 newly registered prostitutes between July 1990 and July 1991
 463 prostitutes registered for more than one year (average 3 years)
 Genital samples for microbiology (T. vaginalis, C. trachomatis, N. gonorrhoeae) and sequential serology (HIV and syphilis).

Results :

	Newly registered (n = 190)		Registered > 1 year (n = 463)	
	Senegalese (n=99)	Other nationalities (n=91)	n	%
T. vaginalis	21	21.2	23	25.2
N. gonorrhoeae	18	18.1	11	12.1
			n	%
			111	24.0
			74	16.0

C. trachomatis	21	21.2	15	16.4	56	12.1
TPHA	30	30.3	21	23.1	154	33.3
RPR	17	17.1	4	4.3	21	4.5
HIV-1	3	3.0	10	10.8	16	3.5
HIV-2	7	7.0	7	7.6	40	8.6
HIV-1 & HIV-2	0	0.0	7	7.6	2	0.5

Conclusion: The prevalence of STD among the two groups of prostitutes was comparable. There was no significant difference between newly registered prostitutes and the ones registered for more than one year ($p = 0.055$ to 0.9 for different infections). However, when the geographical origin was considered (here referred as nationality), HIV-1 was significantly associated with newly registered prostitutes of non Senegalese nationality ($p = 0.01$).

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HIV-2 Western blot profiles in Senegal : cross-reactivity and evaluation of the WHO interpretation criteria

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Objective :

- Analyse the various HIV-1 and HIV-2 antibodies patterns revealed by Western blot with sera collected for the sentinel surveillance program in Senegal between 1989 and 1991.
- Examine the cross-reactivity between the two viruses for each major viral protein.
- Compare the WHO criteria to those of the kit manufacturers.

Methods : systematic analysis of 488 Western blots (New-LavBlot, Diagnostics Pasteur) was performed using the WHO criteria (2 env ± gag ± pol). All dual reactive samples were further tested using synthetic peptides based tests (Diagnostics Pasteur).

Results : Percent reactivity of 158 HIV-1 positive sera and 330 HIV-2 positive sera to viral proteins were :

<i>HIV-1 proteins</i>	<i>gp160</i>	<i>gp120</i>	<i>p68</i>	<i>p55</i>	<i>p52</i>	<i>gp41</i>	<i>p40</i>	<i>p34</i>	<i>p25</i>	<i>p18</i>
HIV-1 positive	98.1	91.0	95.0	95.6	79.1	72.8	88.0	92.4	96.2	75.3
HIV-2 positive	27.0	7.3	36.1	73.3	21.2	6.4	53.1	84.8	86.9	22.1
<i>HIV-2 proteins</i>	<i>gp140</i>	<i>gp105</i>	<i>p68</i>	<i>p56</i>		<i>gp36</i>			<i>p26</i>	<i>p16</i>
HIV-2 positive	44.5	97.5	95.1	90.0		89.4			90.9	43.3
HIV-1 positive	1.3	12.0	19.8	15.2		5.7			89.3	15.9

Conclusion : This study shows that there is a significant rate of cross-reactivity between the proteins of the two HIVs making the interpretation of HIV-2 positive sera difficult. 13 % of the sera identified as HIV-2 positive by WHO criteria would have been dual reactive by the manufacturer's criteria. The WHO guidelines appear to be better adapted to an HIV-2 endemic area and allow a more rational and cost effective use of discriminatory tests.

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Studying the clinical and immunological presentation of patients at the General Hospital clinic with both HIV-1 and HIV-2 endemic infections

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Objective : To study the clinical and immunological status of HIV-1 of HIV-2 and seronegative patients present to a large Infectious disease / Internal Medicine service at a general hospital in Dakar, Senegal.

Methods : All new patients > 14 years presenting to the service from Aug.-Nov. 1991 were surveyed for sociodemographic and clinical features, and for serology and T-cell subsets. Various scorings of the WHO-Bangui criteria and the CDC classification criteria were applied to the data.

Results : Of 493 patients seen, 479 had complete data, approximately 95% of patients both seropositives and seronegatives were from Senegal. The primary sociodemographic differences between HIV-1+ and HIV-2 were level of schooling (HIV-1 > HIV-2) and age (HIV-2 > HIV-1). 39 HIV-1+ and 16 HIV-2+ were discovered in the survey. 36 % of HIV-1 and 29 % of HIV-2 patients then became inpatients at the same visit. 4 HIV dual reactivity patients were excluded from analysis.

No significant differences were clinically noted in 39 separate signs, symptoms or diagnoses between HIV-1+ and HIV-2+ individuals. Low sensitivity and low predictive value positive calculations were noted for the standard WHO Bangui criteria for HIV-1+ and for HIV-2+ individuals, although the 12 point scoring system of Bangui criteria improved these values somewhat. T-cell subset values were also determined.

	<i>Bangui classification score > 12</i>			<i>CDC IV classification</i>		
	Avg CD4	AvgCD8	AvgCD4/CD8	Avg CD4	AvgCD8	AvgCD4/CD8
HIV-1+	254	1302	.30	242	1231	.28
HIV-2+	345	674	.41	313	945	.61

Conclusions : Certain sociodemographic differences in “endemic” HIV-1 and HIV-2 infection may be seen, but etiologies for these differences remain to be fully elucidated. Surveillance definitions for AIDS applied a general clinic setting in Africa may have poor performance characteristics for both HIV-1 and HIV-2 infection.

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Cervical dysplasia in HIV infection in Senegal

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Objectives : To determine whether an association exists between HIV infection and cervical dysplasia.

Methodology : A case-control study has been underway at the Infectious Diseases Department in Dakar (Senegal) from June 1991 to February 1992. Women enrolled in the study underwent a standardized interview and clinical and gynecological exam. Cervical specimens for cytology, vaginal specimens for microbiology and blood samples for serologic assessment of past exposure to HIV-1 and 2 and to *T. pallidum* were obtained. Sera were screened for antibody to *T. pallidum* by TPHA and RPR, and to HIV using ELISA, with confirmation by Western blot. Standard microscopy and cytology were used to identify genital tract infection and to diagnose the presence of dysplasia. Screening for human papillomavirus (HPV) was performed using dot-blot hybridization, Southern blot and polymerase chain reaction (PCR).

Results : 102 women have been enrolled : 18 HIV-1, 17 HIV-2, 1 HIV-1/2 and 66 seronegative controls. The prevalence of cervical intra-epithelial lesions (dysplasia) was remarkably increased among HIV seropositive women (OR = 11.6) ; 27 % of seropositive women had dysplasia, with comparable rates associated with HIV-1 and HIV-2 infection. Data on the presence and specific types of HPV will be presented.

Conclusion : Our study shows a marked association between HIV-1 or HIV-2 infection and cervical dysplasia, with HIV-1 and HIV-2 infection associated with comparable rates of dysplasia. Longitudinal studies will be important to clarify the relationship between HIV infection, immunosuppression and dysplasia.

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Co-infections of HIV/HTLV-1 in Senegal

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Objectives : To determine the importance of HTLV-1 in retroviral infections in Senegal and to evaluate the frequency of co-infections with HIV-1 and HIV-2 ;

Methods : 12 503 sera from subjects belonging to various population groups and from various locations in from Senegal have been tested.

The serologic screening tests used for HTLV-1 were indirect immunofluorescence and ELISA (Cambridge Bioscience and Abbott). All positive reactions were confirmed by Western blot.

Results :

<i>Population groups</i>	<i>HIV-1</i>	<i>HIV-2</i>	<i>HIV-1+2</i>	<i>HTLV-1</i>	<i>HTLV/HIV</i>
<i>Control groups</i>					
Pregnant women (n=2 120)	4	18	1	14	3
Blood donors (n=1 951)	3	7	0	16	0
<i>Risk groups</i>					
Prostitutes (n=1 342)	32	183	10	109	39
STD patients (n=1 131)	12	9	3	19	1
Prisoners (n=1 205)	4	7	0	6	0
<i>Hospitalized patients</i>					
Medicine (n=3 351)	198	102	8	51	14
Tuberculosis (n=1 403)	20	26	1	17	3
Total (n=12 503)	273	352	23	232	60

HIV co-infection was seen in 25.9 % (60/232) of all HTLV-1 seropositive individuals seen. In these 60 HIV/HTLV co-HIV infections, 42 (70.0 %) were with HIV-2, 13 (21.7 %) were with HIV-1 and 5 (8.3 %) were with HIV-1/2. Of the various HIV seropositive groups, HIV-1 with HTLV-1 infection was seen in 4.8 %, HIV-2 with HIV-1 infection in 11.9 % and HIV-1/2 with HTLV-1 infection in 21.7 %.

Conclusion : Statistical analysis shows that HTLV-1 is more often associated with HIV-2 (p=0 ;002) and that co-infections are more frequent among prostitutes than among pregnant women (p>0.001) and hospitalized patients (p > 0.001).

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t. 2, p. 249, PoC. 4028

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Cost-effective diagnosis of HIV-1 infection by recombinant proteins

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Objectives : To evaluate the efficiency of two recombinant expressed env peptides 566 and 996 in distinguishing HIV-1 from HIV-2 infection and to develop a more economical assay using these two recombinant expressed env peptides. We then wished to evaluate the developed immunodot assay's application in the field and compare to standard Western blot results.

Methods : Initial evaluation of recombinant proteins included sera collected from diverse geographical regions, previously serodiagnosed by whole viral lysate immunoblots to HIV-1 (IIIb) and multiple HIV-2 isolates (MS U937), NIH Z and ST), dual positives were confirmed by RIPA. Constructions of expression plasmids have been previously described for 566 (Zweig *et al.*, 1988) and 996 (Zuber *et al.*, 1990) both from the envelope transmembrane portion of HIV-1 and HIV-2 respectively. The recombinant proteins were tested first in Western blot with electrophoresed antigen. A dot-blot technique was then developed using an immunoblot format and the miniblottor apparatus (Immunetics, Cambridge, MA).

Results : Our previous studies with 996/566 have shown that immunoblot assays using both proteins allow for highly type-specific diagnosis. We were able to adapt this technique to dot-blotting antigen and utilizing the miniblottor apparatus. This allowed for type-specific diagnosis in less than 2 hours with 10-20 fold reduction in reagents and an overall reduction in cost to < \$0.40 per sample. The dot-blot technique has been field tested in Senegal and 1 200 samples were concurrently evaluated by standard immunoblot. Concordance between the two assays was greater than 99 %.

Conclusion :

- 1) Recombinant proteins 566 and 996 are useful to distinguish between HIV-1 and HIV-2 infection.
- 2) These peptides can be used in a dot-blot immunoblot assay. We believe this technique will be extremely useful and cost-effective technique for HIV- and HIV-2 diagnosis.

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Laboratory diagnosis of *Haemophilus ducreyi* : Evaluation of culture techniques in Senegal

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Objectives : To evaluate the diagnosis of chancroid by isolation of *Haemophilus ducreyi* using different culture media. To evaluate if train specificity will alter sensitivity and specificity of isolation procedures.

Methods : One hundred and eight male patients presenting with genital ulceration suggestive of chancroid were enrolled between December 1989 and May 1991 in two major hospitals in Dakar. Patients with documented ulcerations by chemical, traumatic origins or recurrent herpetic lesions were

excluded from the study. Three selective culture media were evaluate including : PPLO, Mueller-Hinton (Defibrinated Horse Blood), and GC (Chocolate agar).

Results : Fifty-three isolates were obtained from the 108 patients. Direct microscopic examination was positive in 61 % of the cases giving a sensitivity of 94.4 % and a specificity of 71 % when compared to culture.

All isolates were obtained on MH medium, two of them grew also en GC medium. None of them grew on PPLO media. All the isolates produced beta-lactamases.

Conclusion : This study confirmed the presence of Haemophilus ducreyi in Dakar and allowed us to find an isolation medium adapted to the strains prevalent in our region. Previous studies have failed to report on the isolation of Haemophilus ducreyi. Our results suggest that this may be due to the choice of media employed in the technique. Therefore, medium selection may be critical to the isolation of this agent and should be evaluated and adapted to the particular clinical or research setting. Our study also showed that direct microscopic examination, although not highly specific, is sensitive enough to give a presumptive diagnosis while waiting for isolation results or where culture is not available.

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t. 2, p. 318, PoC. 4439

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Detection of HIV-2-specific cytotoxic T Lymphocytes in seropositive individuals

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Objective : To evaluate the cytotoxic T lymphocyte (CTL) response to HIV-2 in seropositive subjects.

Methods : PBMCs were obtained from six HIV-2 seropositive subjects who are part of an ongoing seroepidemiologic study of HIV-2 infection in Dakar, Senegal, and tested for CTL activity. Target cells for these assays consisted of autologous EBV lymphoblasts infected with recombinant vaccinia virus expressing the HIV-2 ROD and ST env genes, the SIV251 env gene, SIV gag gene, HIV-2 RT gene, and a control vaccinia virus. Effector cells consisted of :

- 1) Fresh unstimulated PBMCs ;
- 2) CD8+ enriched lymphocytes, which had been expanded in vitro with interleukin 2, and
- 3) PBMCs cloned at limiting dilution using a CD3-specific monoclonal antibody as a stimulus to T cell proliferation.

Results:

1) HIV-2 env-specific CTL activity was detected in 4/6 seropositive subjects. In 3/4, no env-specific activity detected in fresh PBMCs or expanded CD8+ cells, although clones were obtained from these individuals which recognized SIV251-env. In 1/4, ST-specific activity was detected in the expanded CD8+lymphocytes, although no clone could be isolated from this subject.

2) In 1/6 subjects, there was marked gag-specific CTL activity, which could be detected using target cells expressing the SIVgag protein. Two epitopes within gag were mapped using synthetic viral peptides, both of which differed from an SIVgag CTL epitope previously identified in macaques. The HLA-restriction of these epitopes is under investigation.

3) RT-specific CTL activity was not detected in any subject, and in 2/6 subjects there were no detectable CTL, against any gene using these methodologies.

Conclusions : HIV-2-specific CTL directed at the gag and env proteins are part of the host immune response to this retrovirus. The cross reactivity between HIV-2 and SIV at the CTL level further

underscores the relatedness of these viruses. Further evaluation of the CTL response to HIV-2 should help to define the potential role of these cells in the immunopathogenesis of HIV-2 infection.

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t. 2, p. 37, PoA. 2204

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Decreased infectivity of HIV-2 compared to HIV-1 : mathematical model.

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Objective : To use maximum likelihood estimation theory to estimate and compare the infectivity of HIV-1 and HIV-2 in a sexually-active high-risk population.

Methods : Data was collected in a prospective study (1985-1990) of registered prostitutes from Dakar, Senegal providing information about average number of partners per week, prostitutes registration date and HIV-1 and HIV-2 status at approximate six month intervals. We used this data to model the probability of the prostitutes being positive with either HIV virus as a function of the number of sexual partners, the prevalence of the virus in the partner population, and the male-to-female infectivity per contact. Using maximum likelihood estimation theory, we estimated and compared the infectivities of HIV-1 and HIV-2. Estimates of HIV prevalences in the partner population were required for the model, we, therefore, carried out two analyses : one assuming a high risk prevalence (estimated from Senegalese prostitutes) and one assuming a low risk prevalence (estimated from blood donors and pregnant women).

Results : We found that the estimated risk of HIV-1 infection per sexual act to be at least, five times that of HIV-2 (p-value < 0.013). These results were unaffected by assumptions about partners prevalences. Graphical goodness of fit methods showed that our model fits the data well.

Conclusions : Although both HIV-1 and HIV-2 have been associated with AIDS, the natural history clinical latency and incidence of HIV-2 appears to differ from HIV-1. Our mathematical model supports the biological studies indicating a decreased infectivity of HIV-2 compared to HIV-1

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t. 1, p. 57, WeC. 1064

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Cases report of TB patients HIV-2 positive with clinical multidrug resistance

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Objectives : We have evaluated in our record of cases of TB patients with HIV-2 infection the result obtained by the therapeutic follow up to establish the quality of the result of the chemotherapy (Cth.) and the adherence of patients at the therapeutic regimen.

Methods : We have studied 37 females and 42 males, mean age 40 y (R3-70) positive for HIV-2 (Western blot) during the TB. The criteria for case definition of TB were :

- 1) presence of acid-fast bacilli (AFB) in the smear (Ziehl-Neelsen),
- 2) clinical symptoms (cough, fever, weight loss), and/or
- 3) chest radiography showing pneumonia and/or

4) clinical positive response to antituberculosis T. The pts have been treated with short-course (4 months) Cth. (Ethambutol, Rifampin, Isoniazid, Pirazinamide) and after for 4 months (Thiacetazone, Isoniazid). The pts who remain AFB smear positive 4 months after the start of chemotherapy continued the intensive, treatment for 4 months adding Prothionamide to the mentioned drugs and the maintenance T. is continued for 4 months more with Rifampin ; Isoniazid, Pyrazinamide (3 times week). A sanitary assistant looked for the pts. who didn't want to come to the checkup. The average period of observation since the diagnosis is of 11 months (R 1-29).

Results : In 67 cases the diagnosis was pulmonary TB AFB smear positive, in 11 cases pulmonary TB AFB smear negative, in 1 case lymphonodal TB. 7 pts. have presented side effects during the therapy. 60/67 pts. had AFB smear negative after on average 76 days (R 18-180); 7/67 pts. had AFB smear positive after on average particularly 102 days (R 60-120) and particularly 4 (6 %) were positive. also after 160 days ; 3 pts. are death 2 or 3 months after the diagnosis. The pts. death are 21 with an average survival of 8 months (R 1-26), the pts. in drop out are now 30 with an average observation of 4 months (R 2-14). 13 pts. are still alive after 24 month from the TB diagnosis and 15 in observation haven't yet reached 2 years of survival.

Conclusions : This study shows it's necessary to improve our social and sanitary supervision during the Cth. follow up to avoid the abandonings we have verified up to now. The pts. remained AFB positive in the smear have been cured and checked in Hospital and therefore it's probable they have been victims of mycobacteria multi-drug resistant.

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t. 2, p. 102, PoB. 3095

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Évaluation d'un programme de prévention du sida en milieu scolaire (Kaolack, Sénégal)

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Problème : 70 des 134 cas de MST, référés au Centre de Surveillance Sentinelle du sida étaient des élèves, dans une ville qui a le taux de séropositivité chez les prostituées, le plus élevé du Sénégal (29 %). Même si aucun cas de séropositivité n'avait été rapporté chez ces malades ou chez les élèves donneurs de sang bénévoles, un programme d'information des élèves sur le sida a été jugé nécessaire.

Description du programme : Avec l'aide du Centre Régional d'Éducation pour la Santé, de Professeurs de Sciences Naturelles et d'Économie Familiale, de Comités de Prévention du sida des Lycées, d'Associations Sportives et Culturelles Religieuses ou Laïques et d'Animateurs de la Chaîne Régionale de la Radiodiffusion, le programme de prévention a pu être exécuté même si ce n'est qu'en partie pour des raisons financières.

Résultats : Une évaluation 12 mois après, a montré une augmentation de la connaissance de la maladie (38 à 95 %) et de l'utilisation du préservatif (30 à 85 % chez les actifs) et une diminution des cas de MST (70 à 18)

Leçons : De tels programmes gagneraient à être multipliés.

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t. 2, p. 406, PoD. 5116

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Perinatally acquired HIV infection in Dakar : preliminary results

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Objectives : To identify the risk factors of vertical transmission for HIV-1 and HIV-2, and to better understand the natural history of perinatally acquired HIV infection.

Methods : All the women attending the Maternity service at Le Dantec Hospital in Dakar, Senegal were systematically tested for HIV antibodies. All seropositive women giving birth to a live child were included in the study along with two seronegative mother-infant couples matched by age, parity and matrimonial status. A clinical and biological follow-up of the mother-infant pairs began at birth. Evaluations at 30d, 45d, 60d, 90d and every 3 months thereafter are scheduled.

Results : 4 699 women have been tested between April 1991 and February 1992. Thirty-three of them were positive : 23 HIV-2, 9 HIV-1 and 1 dually reactive. Nineteen of them gave birth to live babies and were the basis of our cohort for these 10 months, along with 38 negative couples.

The birth weight mean was lower for children born from HIV-1 mothers (2 700 grams) than from HIV-2 mothers (3 340 g). Three children born from HIV-1 infected symptomatic mothers had low birth weight and early clinical signs of AIDS including oral thrush, weight loss and recurrent bronchopulmonary infections.

Conclusion : These results confirm the higher prevalence of HIV-2 in Senegalese populations. However, HIV seroprevalence remains low (0.70 %) and stable in pregnant women in Dakar. We are still early in the follow-up of our mother-infant pairs, although 3 infants borne to HIV-1 infected mothers appear to have AIDS. The comparative biology of HIV-2 perinatally exposed infants is under study.

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t. 2, p. 285, PoC. 4240

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HIV-2 infection in Portuguese patients

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Objectives :

- 1) To have a better knowledge of social characteristics and risk behaviors among HIV-2 infected individuals ;
- 2) To analyze the natural history, clinical manifestations and the efficiency of HIV-2 transmission to stable heterosexual partners.

Methods : Retrospective study, which enrolled all individuals infected with HIV-2, seen at the Infectious Diseases Clinic, University Hospital of Coimbra. HIV-2 antibodies were demonstrated by ELISA and confirmatory Western blot assays.

Results : Twenty-five HIV-2 infected individuals were seen between March 1987 and February 1992. There were 18 (71 %) male and 7 (29 %) female with a median age of 40 years (12-66). Ninety two per cent had a steady occupation, and two (8 %) had no employment. The majority were manual workers ; only 16 % patients had secondary studies and none had a university degree. All women were of Portuguese nationality and they haven't travelled outside Portugal. There were three black men of African origin, the remaining being Caucasians of Portuguese nationality. Thirteen male patients lived in Africa, were 10 served as soldiers (8 in Guinea-Bissau, 1 in Guinea-Bissau and Angola and 1 in Mozambique). They had no other risk behavior than occasional heterosexual relations with native free women. There was no evidence of drug use or homosexuality/bisexuality. Association with other sexually transmitted diseases was self-reported only in 4 cases and the seromarkers of syphilis and B Hepatitis were positive only in 5 patients. The main period from the last exposure to a presumable infecting relation or blood transfusion and diagnosis (possible to determinate in 14 patients) was 19 and

13 years respectively. At initial visit individuals were classified into group II CDC (16) and group IV CDC (9). We emphasize the inclusion of 12 asymptomatic individuals identified by screening done to all blood. Three of them had criteria for AZT therapy and would benefit of surveillance. There was no statistical difference in respect to lymphocyte count, quantification of T cells subsets, T4/T8 ratio and β 2 microglobulin among CDC II and CDC IV groups. Mean time of follow-up was 18 months, and progression of disease was seen in 2 patients. Ten of these patients had, presently, a stable marriage, although they didn't use condom, there was no case of seropositivity among their wives, after a mean period 18 years of follow-up. The opportunistic infections documented were: tuberculous lymphadenitis in 5 cases, *Pneumocystis carinii* pneumonia in 2, oesophageal candidiasis in 1, CMV retinitis in 1 and *Cryptococcus meningitis* in 1.

Conclusions : In this population of HIV infected individuals, the risk behavior identified were : unprotected heterosexual relations with black African single women, and blood transfusion before 1987. Screening with sensitive assays for HIV-2 antibodies must be done in all blood-donors in our country. As no case of seropositivity was screen in wives of HIV infected patients with stable marriage, in spite of unprotected vaginal sex, the infectivity rate must be low.

HIV-2 infection in Portuguese patients. *VIIIth International Conference on AIDS / III STD World Congress, Amsterdam, 19-24 July 1992*. t. 2, p. 265, PoC. 4122

Claire Mulanga Kabeya¹, A. Hatzikis¹, Souleymane Mboup², G. M. Gershy Damet³, K. Knigge⁴, P. Wu⁴, Phyllis Kanki⁵

The prevalence of indeterminate HIV-1/2 results by Western blot and automated dot blot assay among blood donors in Dakar, Senegal

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Objectives :

— To determine the prevalence and to define the pattern of indeterminate HIV-1/2 result by Western blot and by an automated dot blot assay (MATRIX HIV-1/2, ABBOTT) in a random sample of blood donors, in Senegal.

— To compare the rate of indeterminate results of a Western blot assay with an automated dot blot assay.

Method : Sera from 250 consecutives Senegalese blood donors, were screened for detection of HIV antibodies by Western blot HIV-1. CDC criteria were used to interpret the WB results. All the samples were also screened by an automated dot blot assay. The MATRIX assay consisted of 6 highly purified proteins of HIV-1 (gp120, p66, p41, p31, p24, p17) and 3 proteins of HIV-2 (gp105, p36, p26). Any reactive pattern that does not meet the criteria of MATRIX positivity were interpreted as indeterminate. Selected cases were also tested by HIV-2 Western blot.

Results : The overall prevalence of HIV-2 infection by MATRIX HIV-1/2 was 1.6 % (4/250). No sample interpreted as positive for HIV-1 by MATRIX or Western blot.

33.6 % (84/250) of the sample and 22.6 % (57/250) were indeterminate by Western blot and MATRIX respectively. The frequency of reactivity to different proteins in samples with indeterminate results is shown in the following table :

Reactivity	WB HIV-1 N°. (%)	MATRIX HIV-1/2 N°. (%)
GAG only	68 (81 %)	41 (71.9 %)
POL only	5 (6 %)	4 (7 %)
ENV only	2 (2.4 %)	9 (15.8 %)
GAG+POL	9 (10.7 %)	3 (5.3 %)

31 out of 68 samples reactive to GAG only by WB HIV-1 and 21 out of 41 samples reactive to GAG only by MATRIX HIV-2 were positive to p24 only.

9 samples were reactive to gp105 ENV protein of HIV-2 and were confirmed by HIV-2 Western blot.

Conclusion : A high prevalence of indeterminate samples was detected in both Western blot and MATRIX HIV-1/2. However a lower rate of indeterminate results is observed with MATRIX. The major indeterminate pattern observed in this population were GAG only. A single p24 seems the most common. More research effort is necessary to elucidate the nature indeterminate patterns such as gp105 only.

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t. 2, p. 317, PoC. 4434

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Simian immunodeficiency viruses from *Tantalus* monkeys : evidence for a new species-specific SIV_{agm}-type

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Objective : Simian immunodeficiency viruses (SIV) are widely present in African Green monkeys (AGM) and may have evolved in parallel with their natural host species. However, information to date is limited to viruses of only three species : the vervet, the grivet and the *sabaeus* green monkeys. We present here a genetic study of lentiviruses of another AGM species, the *tantalus*. We also initiated a first study in *env* of SIV from *sabaeus* monkeys.

Methods : SIV isolates from *tantalus* in Central African Republic and from *sabaeus* in Senegal were selected. Proviral DNA-fragments in *gag*, *pol* and *env*-regions were amplified by PCR. Env amplified fragments were sequenced directly using SIV_{agm}-specific nested primers. The deduced aa-sequences were compared to each other and to all other SIV_{agms} reported so far.

Results : 544bp fragments encoding for the C-terminal half of the EGP of 4 SIV isolates from *tantalus* and 4 viral strains from *sabaeus* were sequenced. The amino acid identity was always greater between the *tantalus* isolates themselves (> 78 %) than between *tantalus* SIVs and viruses from vervet, grivet or *sabaeus* monkeys (< 70 %). The greatest variation was observed between one *tantalus* and one *sabaeus* strain (57.1 %). In addition, alignment of entire gp120 encoding sequences revealed that the first and the fourth variable domains of SIV from *tantalus* are highly divergent in regard to equivalent sequences of previously published SIV_{agms}.

Conclusion : This analysis confirms the existence of species specific SIVs for vervets, grivets and *sabaeus* monkeys and reveals a fourth distinct SIV_{agm} group specific for *tantalus*. Genetic distances between these groups are significant and allow to distinguish SIV types according to each host species. However, enhancing information of SIV_{agms} require additional sequence analysis. Such information on genetic diversity may also be relevant for a better understanding of possible adaptation mechanisms between primate lentiviruses and their natural host in Africa, and their possible consequences on the lack of pathogenicity observed so far in naturally infected monkeys.

VIIIth International Conference on AIDS / III STD World Congress, Amsterdam, 19-24 July 1992.
t. 1, p. 60, WeA. 1079

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HIV infection in pregnant women in Dakar

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Objectives : To determine the prevalence of HIV infection in pregnant women in Dakar, risk factors of vertical transmission, and to compare them between HIV-1 and HIV-2.

Methods : All women attending the maternity service of Le Dantec Hospital in Dakar were systematically tested for HIV antibodies. Samples were tested using envelope recombinant proteins of HIV-1 [566] and HIV-2 [996] provided by Dr. K. Samuels (NCI-FCRDC, Frederick, MD, USA) blotted on nitrocellulose sheet and serving as antigen in a Miniblotter (Immunetics, Boston, MA, USA). All positive reactions were confirmed by immunoblot on both HIV-1 and HIV-2.

Results : Between April 1991 and February 1992, 4 698 women have been evaluated. Thirty-three of them were positive : 23 for HIV-2, 9 for HIV-1 and 1 dually reactive.

	<i>Negative</i>	<i>HIV-1</i>	<i>HIV-2</i>	<i>HIV-Dual</i>
Number (%)	4 665 (99.3)	9 (0.2)	23 (0.5)	1 (0.02)
Age (x±sd)	26.8 ± 6.8	25.9 ± 4.8	29.9 ± 4.1	28
Number of Abortions (%)	766 (16.4)	1 (11.1)	4 (17.4)	0
Number of Stillbirths (%)	593 (12.7)	2 (22.2)	6 (26.1)	0

3 children born from positive mothers were tested at age of 6 months and were positive (1 HIV-1 and 2 HIV-2).

Conclusion : These results confirm the low prevalence (0.70 %) of HIV infection among pregnant women in Dakar and the predominance of HIV-2 in Senegal. There was no correlation between HIV seropositivity and abortion and stillbirth. The HIV-2 population was older than the HIV-1 population in this group as has been observed in other studies. A clinical and biological follow-up of our cohort will allow us to better understand the vertical transmission of these viruses and to compare the natural history of neo-natal infection for these two viruses.

VIIIth International Conference on AIDS / III STD World Congress, Amsterdam, 19-24 July 1992.
t. 2, p. 285, PoC. 4241

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Simplified approaches for diagnosis and treatment of STD in Africa

¹ Comité Sida Sénégal

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Objectives : To improve the accessibility of diagnosis and treatment of STD.

Methods :

- 1) Study on the prevalence of STD, including the importance of antimicrobial resistance.
- 2) Study on the knowledge and feasibility of algorithms for diagnosis of STD.
- 3) Cost-efficacy study on the treatment of STD using drugs from the essential drug programme.

Results :

- 1) High STD prevalences were found among the general population and among high risk groups, such as prostitutes.
- 2) Algorithms performed best for genital discharge and genital ulcer.
- 3) Treatment with essential drugs was successful in most cases.

Clinical algorithms on : 1) genital discharge in men and women and 2) on genital ulcer in men and women have been developed and are most used at the primary and secondary health care level.

Conclusions : Such a study is necessary and must be conducted in all developing countries experiencing difficulties in establishing a proper diagnosis and affordable treatment for STD. Using clinical algorithms, the health worker at the primary level can cope with more than 60 % of the STD in developing countries.

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t. 1, p. 60, WeA. 1084

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HIV-2 in people over 50 years in Bissau. Prevalence and risk factors

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³ Projecto de SIDA, Bissau

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Objectives : In Bissau, in a community study involving all age groups, high HIV-2 seroprevalences were found in older age groups. This study was defined to determine the HIV-2 seroprevalences in people of 50 years or more, and to investigate risk factors for infection.

Methods : In the study area defined in the community study, a list of all persons of 50 years or older was drawn from the census lists. During 1990/91 each person was approached at home, explained the aim and practical details of the study, and those who consented were interviewed extensively about possible risk factors for HIV infection, and capillary blood was taken by fingerprick. The blood samples were analysed for antibodies to HIV-1 and HIV-2 by ELISA and Western blot, as appropriate.

Preliminary results : Of the first 388 persons who participated, 15.2 % were HIV-2 seropositive. (men : 13.3 %, women : 16.7 %). The seroprevalence according to year of birth :

Year of birth	No of HIV-2+		No of participants :		Total	%
	men	%	women	%		
-1909	0/7	0.0	0/4	0.0	0/11	0.0
1910-1919	1/21	4.8	3/25	12.0	4/46	8.7
1920-1929	5/57	12.3	6/51	11.8	13/108	12.4
1930-1939	15/80	18.8	25/122	20.5	40/202	19.8
1940-	0/8	0.0	2/13	15.4	2/21	9.5

Factors *not* associated with HIV-2 seropositivity : Travels outside of Guinea-Bissau. Having been bitten by or killed a monkey. Having prepared or eaten monkey meat. Sexual debut before the age of 20 years was a risk factor for men. More will be presented.

VIIIth International Conference on AIDS / III STD World Congress, Amsterdam, 19-24 July 1992.
t. 2, p. 250, PoC.4032

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L. Diakhaté¹, L. C. Sarr¹
National AIDS control programme in Senegal. Results of activities 1990-1991

¹ Comité Sida Sénégal

Objectives : To control the AIDS epidemic and to promote preventive attitudes and behavior.

Methods :

- 1) Establishment of a National Committee Against AIDS to implement a medium term National Program (NP),
- 2) Evaluation of this Programm.

Results : 1) *Activities* :

<i>Items</i>	<i>Realized</i>	<i>Degree of satisfaction</i>
Management/coordination :	92 %	M : 67 % ; C : 80 %
IEC :	65 %	44 %
Lab and blood bank :	L : 92 % ; B : 68 %	33 %
Clinic, counseling :	64.5 %	100 %
Surveillance, epi. :	82 %	66 %

2) *Budget* :

<i>Estimated</i>	<i>Announced</i>	<i>Obtained</i>	<i>Used</i>	<i>Realized</i>
4 169 391	3 150 105	1 624 940	1 384 450	85.2 %

Discussion : The overall result was positive. However, it was weakened by lack of logistics, staff and available resources.

Conclusions :

- 1) The further evolution of the AIDS epidemic will depend on the efficacy of the NP.
- 2) STD and AIDS control activities must be further integrated to have more impact.
- 3) It is necessary that developing countries find their own resources.

VIIIth International Conference on AIDS / III STD World Congress, Amsterdam, 19-24 July 1992.
t. 1, p. 78, ThD. 1566

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Sentinel surveillance of STDs, and its implications for AIDS control in Senegal

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² AIDS Task Force Belgium

Objectives : This program was implemented to improve HIV and STD diagnosis in remote areas of Senegal. We wished to investigate the prevalence of HIV and STDs in these populations and study the relationship between STD and HIV infection

Methods : Laboratories were established and equipped. Personnel were trained in STD and HIV diagnosis and laboratories were regularly visited to supervise and quality control the laboratory methods.

Results : Since May 1989, a sentinel surveillance program for HIV and STDs has been started in five networked clinics in Senegal. Data collected included a routine clinical examination : Direct microscopy of smears, culture for *Neisseria gonorrhoeae*, *Chlamydia trachomatis* antigen detection, HIV and syphilis serology.

<i>Population</i>	<i>Gonococcal infection</i>	<i>T. Vaginalis infection</i>	<i>Bacterial Vaginosis</i>	<i>Vulvovaginal Candidiasis</i>	<i>Chlamidia infection</i>	<i>Syphilis infection</i>	<i>HIV</i>
Pregnant Women n=781	1.2%	15.9%	5.6 %	24.3 %	8.1%	5.6%	0.3%
Gynecologic Consults n=795	1.7 %	16.1 %	30.3 %	23.3 %	8.0 %	14.4 %	0.1 %
Male STD Patient n=4019	36.9 %	14.5 %	—	—	13.4 %	12.1 %	1.8 %
Female Prostitutes n=397	13.1%	17.6 %	31.6 %	5.9 %	17.1 %	40.3 %	12.2 %

Conclusion : These preliminary results have allowed us to improve national treatment guidelines for STDs and have facilitated their application at a local level. Syphilis, a cofactor for HIV infection is very common among prostitutes who have the higher HIV prevalence. Improved STD detection and treatment have increased the awareness of local authorities on the importance of the STD and AIDS and have stimulated initiatives in order to prevent transmission of AIDS in all groups implicated in the survey.

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t. 2, p. 299, PoC. 4328

R. Sarge-Njie ², M. B. Jallo ², L. Peters ¹, K. K. Manneh ², F. S. J. Oldfield ², M. K. Cham ¹
Post test counselling of HIV + blood donors

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² Royal Victoria Hospital, Banjul, The Gambia

Objectives :

- 1) To assess the impact of post counselling ;
- 2) To evaluate the attitude of blood donors and their initial response to being positive.

Methods : Donors were include in the study as they registered for donation : the Blood Bank of the Royal Victoria Hospital (RVH). Post-test counselling was preceded by pre-test counselling. All donors, 4 270 number, who registered between the period January 1989 to December were pre-test counselled. Thirty-four to be sero-positive for HIV were followed-up and counselled. The initial reactions of such subjects on being told that they were infected were observed and recorded.

Results : 31 males and 3 females were studied, subjects had an average age or 30.0 years with a standard deviation of 8.7 years. Thirty-two persons showed a combination of fear and denial. Fear and guilt were observed in 18. The rest showed shame, shock, denial or guilt. Of the 34 subjects, 15 agreed to contact tracing and follow-up. 25 % of these were assessed as having a positive attitude while 75 % were considered negative in attitude. 47 % have been retained to regular counselling.

Conclusion : Attitude of those still on counselling has changed so that they now have a much more positive attitude towards their condition. There is a significant relation between continuing counselling & initial reply.

VIIIth International Conference on AIDS / III STD World Congress, Amsterdam, 19-24 July 1992.
t. 2, p. 225, PoB. 3805

R. Sarge-Njie ¹, E. G. Sarr ¹, K. K. Manneh ¹, F. S. J. Oldfield ¹, M. K. Cham ², L. Peters ²
The role of donors in HIV transmission

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² Ministry of Health, Banjul

Objectives : To achieve the desirable safety of blood supply by combining Laboratory Screening with effort to exclude all individuals with recognised risk factors (Pre-test counselling).

Method : Between October 1987 and December 1991 a total of 8 398 donors were screened for HIV and 7 534 for Syphilis. Various test kits for HIV, evaluated before introduction into our system at some stage, were used. All positive vere confirmed by Western blot or our developed dilution technique VDRL and TPHA were tests used for Syphilis.

Donors were recruited as they present themselves at the Blood Bank and also through mobile bleeding sessions. A Pre and Post Test Counselling Service was established in January 1989.

Results : The prevalence of HIV among donors as shown by study is 0.7 % and predominantly HIV-2 (0.6 %). Year 1990 and 1991 showed an increase in HIV-1. However, positivity rate on the whole shows a decline probably due to our well established Pre and Post Test Counselling Service. The study had also showed a variation in the total discard rate (true and false positive) as new test kits were used.

Conclusion : The problem of transfusion transmitted virus imposes a considerable strain on blood transfusion. Testing donations adds to cost and decrease number of donors. Efforts to ensure an adequate and safe blood supply should include striving for optional use of blood and blood products. The AIDS epidemic has brought the uses and dangers of blood transfusion into focus which is valuable for all concern.

VIIIth International Conference on AIDS / III STD World Congress, Amsterdam, 19-24 July 1992.
t. 2, p. 502, PoD. 5683

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Natural, history of HIV-2 vs. HIV-1 : Clinical and immunological study in a cohort of female sex workers

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Objective : To compare the clinical and immunological evolution HIV-2 vs. HIV-1 infection.

Methods : Since 1987, asymptomatic sex workers visiting the National STD clinics in Senegal have been enrolled in a prospective study including clinical follow-up, T-cell subsetting in the later 2 years of study and tuberculin skin testing.

Results : With 353 women enrolled in the study, complete follow-up rate is 80 % and active follow-up has produced vital status information on another 10 %. Clinical outcome is summarized utilizing person-years observed (PYO) and incidence rates (IR). Dual reactive individuals are currently excluded.

Outcome	HIV-2 (88 women with 292 PYO)			HIV-1 (24 women with 69 PYO)			Seronegative (237 women with 888 PYO)		
	N	P	95 % CI	N	P	95 % CI	N	P	95 % CI
AIDS	1	0.3	(0.1-2.0)	3	4.3	(0.9-12.0)	0	—	—
CDC IV-not AIDS defining	7	2.4	(1.0-4.9)	5	7.2	(2.3-16.9)	1	0.1	(0.1-0.6)
Death	1	0.3	(0.1-2.0)	3	4.3	(0.9-12.0)	2	0.2	(0.1-0.8)

Rate ratios of HIV-1 : HIV-2 were significantly greater than 1 for AIDS, CDC IV and death when incidence rates of disease outcomes were compared. Immunologic parameters, abnormal T-cell subsets and skin test anergy were intermediate for the HIV-2+ women when compared to seronegative and HIV-1+ women, although enrolment values are not available prior to 1989.

Conclusion : For the first time, significant difference can be shown in actual disease progression rates between HIV-1 and HIV-2. Seroincident cases need to be accumulated within this cohort to more precisely determine disease outcome rate difference.

VIIIth International Conference on AIDS / III STD World Congress, Amsterdam, 19-24 July 1992.
t. 1, p. 57, WeC. 1066

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Impact of cultural aspects on AIDS prevention in Africa

¹ ENDA-Tiers Monde, Dakar, Sénégal

Objectives : Culture is one of the most important values in societies. It can however represent a constraint in AIDS prevention, because the disease questions different aspects of life : sexuality, motherhood, solidarity, family etc... No doubt that any section with communities should respect their cultures in order to be successful but it is always positive to accept all cultural practices and values in the context of AIDS prevention ? Which acceptable alternatives can be given to encourage behaviour change ? This paper will raise some issues related to the problem.

Methods : As african cultures are various and multiple and studies on the topic very issue, our presentation will be based on field experience and analysis of specific bibliography. Our presentation should raise discussion on the subject.

Results :

Sexual transmission : Many traditional cultures are permissive, and several sexual partners are allowed while sexual and social education of the young people was made by elder and same age-class friends ; actually we observe a social dislocation characterised by the decline of the sexual education of the youth and the loss of the social references ; sex work has become a way of survival or a mean to access consumer goods. Moreover condom use faces often cultural and religious constraints.

Blood : Blood takes part in symbolic acts such as its exchange to sign a friendly or brotherly agreement.

Pregnancy : Traditionally, the social status of a woman is closely linked to her ability to give birth ; so even seropositive, woman would assume the risks of an HIV transmission and get pregnant. The fact that the infection doesn't show primarily symptoms encourages such a behaviour.

Tools : Traditional practices such as male and female circumcision, tattoo, etc. are still operated with soiled materials, and contribute to the spread of the virus.

This, added to other constraints of developing countries (illiteracy, various communities and languages, etc...) affects most of the prevention strategies.

Conclusion : To be efficient, the messages and information on HIV must be conceived by and with the communities ; so, an optimal understanding can be reached and therefore a consequent choice of their own solutions. At term, this is probably the best way towards behaviour change. To reach this aim, ENDA developed collaboration with urban and rural based communities, which become actors and not only passive listeners. However, all this will be a success only if support — in different form — is given to ensure sustainability.

VIIIth International Conference on AIDS / III STD World Congress, Amsterdam, 19-24 July 1992.
t. 2, p. 472, PoD. 5514

Asse Sy ¹, C. Etchepare ¹, M. Etchepare ¹, A. Bacha ¹, L. Djigaly ¹

Prevention strategies at community level : the example of ENDA actions in West Africa

¹ ENDA-Tiers Monde, Dakar, Sénégal

Objectives : To be efficient, the messages and information on HIV must be conceived by and with communities to address their needs ; so an optimal understanding can be reached and therefore a consequent choice of their own solutions. At term, this is probably the best way towards behaviour change. The purpose of this paper is to relate on ENDA activities with communities, and share experiences with other community-based approaches.

Methods : To reach this aim, ENDA developed strategies and actions with urban and rural based communities, which become actors and not and not only passive listeners. Wherever actions are supported, three steps are set :

- identification of basis group (NGO or associations) known for their dynamism and their involvement at the grass roots level on education or health and social promotion issues ;
- training of persons chosen by these groups, and putting at their disposal IEC materials on HIV ;

— supporting the actions of prevention that the community decides to set with their trained representatives.

Results : During the last year, 120 AIDS education activities occurred on the field, gathering nearly 85 000 persons living in popular districts or rural areas. The channels they chose (theater, songs, carnival, shows, ...) were culturally appropriate. On request, we propose video films and documents on AIDS translated in local languages, as well as a debate with an AIDS specialist of the ENDA Health team.

Conclusion : Even if the outcome of these actions on knowledge — and above all on behavior change — is basically difficult to measure (no methodology allowing the evaluation of impact of this specific strategy alone), we do find that more and more community leaders come to us and ask for such activities. Future KABP surveys should facilitate an appraisal of the impact of this strategy. However, this mean is the only one which allows to reach people living outside of the usual communication networks. In particular, we do reach women, young people, and illiterate people (who never go to school), the knowledge of whom is the poorest in a survey conducted in Dakar in 1991

VIIIth International Conference on AIDS / III STD World Congress, Amsterdam, 19-24 July 1992.
t. 2, p. 439, PoD. 5316

Oumar Tandia ¹, A. Seck ², M. H. Mottin-Sylla ², K. Samb ²
Prostitution, poverty, AIDS and economic alternatives

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² ENDA-SYNFEV, Dakar Sénégal

Objectives : What kind of support for people who engage in prostitution in LCDs ?

Methods : Accompagny-and-staying-in-tune activities with people who practice prostitution in suburbs of Dakar, on-going trustfull relationships, common analysis of the situations, the difficulties, the opinions about the different ways for improving the living conditions, either in the current practice of their activities (improvement of the personal security, reduction of sanitary risks : AIDS & STDs, support to families), either by the identification of sustainable alternatives to prostitution (economic activities).

Results : Especially in developing countries, most of the prostitutional activities are due to social and economic constrained situations, even if prostitution is obviously not performed on a forced basis, on a large scale (trafficking of people, traditional or modern, is not widespread, although it is on an institutionalisation process). The people who engage in prostitution is doing so, mostly in a context of “constrained choice”, especially due to broken family and parental situations, and economic urge. The perception of the risks linked to prostitution is more or less clear (especially in terms of AIDS), but the condition for overcoming these risks are not established (social stigma, low group-consciousness and negotiating power, economic crisis).

Conclusions : Although prostitution may result of a free choice, for most of the prostitutes in the LCDs, the willingness to reduce the risks linked to prostitution is important, but their profound desire is to find sustainable alternatives to prostitution. The challenge is to identify such sustainable alternatives, in a socioeconomic context penalized by under-development conditions. For them, would not the AIDS prevention be only a “second choice alternative” for the improvement of their status ?

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Seroreversion of low titer syphilis antibody in Senegalese sex workers

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Objective : Screening for syphilis antibodies in high risk populations, combined with presumptive therapy, is important in preventing transmission and late stage disease. Loss of specific antibody to *Treponema pallidum* (MHA-TP) is unusual in healthy individuals but has been reported in HIV-1 seropositive male homosexuals in the United States. We evaluated the persistence of specific treponemal antibodies in HIV positive and HIV negative female sex workers, showing no clinical immunodeficiency.

Methods : We performed a retrospective analysis using available serum from 276 women who receive regular health care and had routine serial testing that included syphilis (RPR, MHA-TP), HIV-1 and HIV-2 as part of an ongoing cohort study in Dakar, Senegal. All MHA-TP seropositives are treated at the clinic site. All samples were tested using in-house Western blots for HIV-1, HIV-2 and commercial kits for RPR and MHA-TP.

Results: This population has a prevalence of MHA-TP seropositivity of 54 % estimated over a 2 year interval. Average time between samples tested was approximately 15 months. HIV serostatus was not associated with MHA-TP ($p > .05$). Among the HIV seronegative women, 94/184 were MHA-TP positive and 17/94 (18 %) seroreverted to negative. Among the HIV-2 seropositives, 46/72 women were MHA-TP positive, and 6/46 (13%) became negative. Among the HIV-1 seropositives, 8/20 were MHA-TP positive and 1/8 (13%) seroreverted. MHA-TP seroreversion was *not* associated with HIV-1 or HIV-2 seropositivity (p values $> .05$) in this population, loss of specific treponemal antibody (MHA-TP) occurred in (13-18 %) of individuals following treatment, especially in those with a low RPR titer suggestive of either recent or remote infection. Of these 24 MHA-TP seroreverters, 10 were initially RPR negative and 12 were RPR positive at titer $< 1:4$. At the date of documented MHA-TP seroreversion, all 24 samples lacked RPR reactivity. Potential reasons for this loss of test reactivity include effective treatment with biologic loss of antibody, anti-idiotypic antibodies, undetected immune complexes and false positivity on initial testing.

Conclusion: In this sexually active population, loss of treponemal specific antibody was seen at a substantial rate, and was not associated with HIV serostatus or clinical immunodeficiency. Observations regarding sequential syphilis serology may be distinct in sex workers in Africa. The performance characteristics of microhemagglutination assays for treponemal antibodies need to be further evaluated in these settings.

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Current practices in management of STDs and cost of treatment, in primary Health care centres in Pikine, Senegal

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Introduction: Strengthening of appropriate management of STDs has been a priority of the AIDS control programmes of Senegal and the EEC AIDS Task Force. Recurrent cost of STD management may be too high for many developing countries. Therefore, a study was organized to analyze the recurrent cost of STD control integrated in PHC services within the existing cost recovery system in Pikine, the largest urban agglomeration of Senegal. Within this system, a contribution of 0.57 Ecu is foreseen per consultation, for any disease period in adults (1 Ecu = 1.27 US\$).

Objective: Assess the existing quality and cost of STD management in PHC services, in order to analyze the possible impact on quality and costs (for patients and health services) by introducing management protocols for STDs.

Methods: A third of all consultations for STD related syndromes in were recorded during one month urban health posts. The direct costs for patients and the health centre (including drugs, materials, payment for consultation and laboratory examination) was calculated per disease episode. For patients with urethral discharge, quality of treatment was assessed by an estimation of efficacy following earlier prevalence and sensitivity studies.

*Results :*The total number of STD patients reported was 267 of which 108 were male and 159 female. Principle reasons for consultation : vaginal discharge (35.8 %), urethral discharge (31.9 %), genital ulcer (7.8 %), and low abdominal pain (7.4 %). Male patients payed on average 4.80 Ecus (ranging from 0.57 to 25.70 Ecus) and female patients 12.10 Ecus (ranging from 0.57 to 38.57). The treatment of 34 % of the 82 patients with urethral discharge was appropriate. 16 % had moderate efficacy, and 50 % received ineffective treatment. No relation was found between cost and efficacy of treatment. Principle reasons for inappropriate management were lack of training, unavailability of appropriate drugs, lack of involvement of some clinical staff in ordering of drugs, lack of supervision, and preference for specific prescriptions of drugs. Treatment guidelines, based on earlier prevalence studies among STD patients, using the drugs available within the existing PHC programme were agreed by all staff involved in this study. Direct costs of proposed management protocols range between 0.57 and 1.70 Ecus per episode (including drugs, materials and overheads for the centres) and can be covered entirely by the present cost recovery system.

Conclusion : There is a marked variability in STD management in PHC services. Although some centres provided appropriate care at low cost, the quality of management was low in the majority of patients and cost was high. Appropriate care can be provided within an existing urban cost recovery system. This would reduce direct cost for patients, but requires the provision of training, supervision and logistic support from the health service.

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Genetic analysis of transmembrane fusion domain of noncytopathic and cytopathic HIV-2 isolates

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Objectives : To search for mutations which disrupt the hydrophobicity of the fusion domain of natural noncytopathic HIV-2 isolates.

Methods : Three noncytopathic HIV-2 strains were studied. One was recovered from an ARC patient from Guiné Bissau and the two others from a second patient, who was developing AIDS, at two different times. Two cytopathic HIV-2 were analysed as controls. DNA from infected PBMC with noncytopathic and cytopathic isolates was used as target for PCR amplification of the transmembrane fusion domain. PCR products were cloned into M13 mp 18/19 vectors and 5 to 8 clones of each strain were sequenced by the M 13 dideoxy method.

Results : A high degree of nucleotide homology was observed between HIV-2 ROD and the isolates studied in this work. In all clones analysed (either from noncytopathic or cytopathic strains), no significant amino acid change was detected in the fusion domain. The degree of hydrophobicity of the fusion peptide in all isolates is similar.

Conclusions: We conclude that in natural noncytopathic isolates studied the fusion domain of the transmembrane glycoprotein is not the determinant of the deficiency in syncytium formation.

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Epidemiologic trends of HIV and HIV2 infection in an endemic area : the senegalese experience, 1989-
1991

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Objectives : To establish network sentinel surveillance to survey the evolution of the HIV epidemic. This will allow a description of the actual status of the HIV epidemic and evaluate the epidemiological trends by serial evaluation.

Methods : Consecutive sampling of all subjects within each sentinel group was employed until the predetermined sample size was reached. This standardized collection allowed yearly seroprevalence rates in six sentinel groups within a site and between four geographic areas to detect time trends.

Results :

	Dakar(%)		Kaolack (%)		Saint-Louis(%)		Ziguinchor (%)	
	HIV-1	HIV-2	HIV-1	HIV-2	HIV-1	HIV-2	HIV-1	HIV-2
Blood donors (n=5 967)	0.2	0.4	0	0.5	0	0.3	0	0.4
Pregnant women (n=4 414)	0.3	1.0	0.4	1.6	0	0	0	1.0
Hospitalized patients (n=1 020)	10.5	3.7	2.8	5.6	0	2.7	0.6	4.4
Tuberculosis patients (n=1 355)	3.7	1.9	1.4	2.8	0	9.1	2.1	2.1
Male STD patients (n=1 834)	1.6	0.3	2.5	1.8	0	0	0	1.5
Prostitutes (n=2 262)	4.4	5.6	11.5	20.4	0	4.3	1.4	29.0

Conclusion : This surveillance network confirms the predominance of HIV-2 in Senegal and the increase of HIV-1 infection among prostitutes, hospitalized and tuberculosis patients. HIV infection differed by geographic area and migration may be a major factor in the spread of infection. These results have already helped in implementation of preventive measures targeted to specific groups and sites.