

AIDS in Colombia

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Between January 1984 and December 1987 a total of 178 AIDS cases were reported to the Colombian Ministry of Health. The location of these cases suggests that the human immunodeficiency virus (HIV) is widely distributed in Colombia. Most of those afflicted (97%) have been adult males. HIV seroprevalence studies of selected population groups revealed the highest antibody prevalence (5.65% in females, 22.5% in males) among individuals involved in high-risk behaviors who participated in a free AIDS testing program. High prevalences (from 0.6% to 3.9% in females, and 14.6% to 15.9% in males) were also found in patients (primarily female prostitutes and male homosexuals) attending clinics for sexually transmitted diseases in several urban areas. The number of AIDS cases in Colombia has doubled or tripled annually since reporting began in 1984, a pattern similar to that observed worldwide.

In 1983, after the first case of acquired immunodeficiency syndrome (AIDS) was diagnosed in Colombia, the Ministry of Health established a national program against AIDS (Programa Nacional de Lucha contra el SIDA) and made a commitment to control the spread of human immunodeficiency virus (HIV) throughout the country. As a result of this program, starting in 1984 AIDS was made a notifiable disease and screening of blood donors became compulsory in blood banks nationwide. At the same time, Colombia's National Institute of Health in Bogotá began seroepidemiologic studies designed to provide the Ministry of

Health with up-to-date information on the prevalence of HIV infection in the country.

MATERIALS AND METHODS

Since 1983 the Health Ministry's Directorate of Epidemiology (Dirección de Epidemiología) has collected nationwide data on reported AIDS cases. Clinical AIDS cases have been diagnosed following the criteria established by the United States Centers for Disease Control (CDC) in Atlanta, Georgia (1).

HIV seroprevalence surveys have examined sera collected from voluntary blood specimen donors in the following groups:

- Female prostitutes and male homosexuals attending State Health Service clinics for sexually transmitted disease (STD).
- High-risk individuals coming to the National Institute of Health in Bogotá for free AIDS testing.

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- A total of 762 Amerindians living on reservations located within the Orinoco and Amazon river basins.
- Voluntary blood donors to the Colombian Red Cross in Bogotá.
- A total of 753 individuals from both high-risk and low-risk groups in the city of Villavicencio, Meta, Colombia.

All of the survey specimens were initially screened for HIV antibodies using the Abbott enzyme-linked immunosorbent assay (ELISA) HIV-recombinant kit. Sera found repeatedly positive by ELISA were submitted to the Virus Laboratory at the National Institute of Health (Bogotá) for confirmation by indirect immunofluorescence assay (IIFA) and Western blot analysis.

The IIFA was performed as described by Gallo *et al.* (2) using HT and H9 continuous cell lines (3) kindly provided in 1987 by Dr. Paul Feorino, Chief of the Virus Laboratory, AIDS Program, at the CDC in Atlanta. Sera were tested at both 1:10 and 1:50 dilutions.

Western blot antigen was kindly provided in 1987 by Dr. Charles Schable, Chief of the AIDS Diagnostic Laboratory at the CDC in Atlanta, and Western blot antigen strips were prepared at the Virus Laboratory (National Institute of Health, Bogotá) following CDC procedures (4). Test sera were incubated with the strips at a 1:100 dilution, and antigen-antibody reactions were detected with commercial enzyme-conjugated anti-human globulins reacted with appropriate chemical substrates. We considered a serum positive if it reacted with one of the core proteins (p15, p18, p24) and one of the envelope glycoproteins (gp41, gp120). Sera reacting only with core or envelope proteins were considered equivocal (following CDC criteria), and therefore the test was not considered confirmatory.

RESULTS

AIDS Cases

Between January 1984 and December 1987 a total of 178 AIDS cases were reported to the Colombian Ministry of Health. Figure 1 shows the geographic location of cities where AIDS cases were reported. Of the 178 cases, 57.3% came from the nation's three largest cities: Bogotá, Medellín, and Cali. However, it is apparent from Figure 1 that AIDS cases have occurred in most major Colombian cities, suggesting that HIV-1 is already widely distributed in the Republic.

Figure 2 shows the total number of AIDS cases and deaths recorded each year since reporting began. Four cases were reported in 1984, 25 in 1985, 50 in 1986, and 99 in 1987. Most (97%) of these cases have occurred in males, yielding a male to female ratio of 32:1. The five reported female AIDS patients were all prostitutes.

An attempt was made to determine the sexual preferences of patients with the 99 AIDS cases reported during 1987. This study showed that 67% of the cases afflicted homosexual males and two cases afflicted heterosexual females (both prostitutes). The sexual preferences of the remaining 31 patients could not be determined.

Figure 3 shows the age distribution of 84 Colombian AIDS patients. The exact ages of the remaining 95 AIDS patients are unknown. Most of the 84 cases afflicted people between 20 and 39 years of age. However, one case of pediatric AIDS occurred in a three-month-old child secondary to blood transfusion.

HIV-1 Seroprevalence

Table 1 shows the prevalence of HIV-1 antibodies among selected population groups in Colombia. The sera used in



Figure 1. A map of Colombia showing cities where AIDS cases were reported in 1983–1987.

these studies were collected between 1985 and 1987. The highest antibody prevalence was found among high-risk individuals who participated in a free AIDS testing program offered by the National Institute of Health in Bogotá. A relatively high HIV-1 antibody prevalence was also found among patients attending STD clinics in Bogotá and several other urban areas. Most of the patients attending these clinics were female prostitutes or male homosexuals. In each of the three

groups classified by sex that are shown in Table 1, the HIV-1 infection rate was significantly higher in males than in females.

For comparison with the results obtained among these high-risk groups in Bogotá and other major urban areas, we examined sera from 753 persons living in Villavicencio, Meta Department. This is a medium-sized commercial city with 174,000 inhabitants that is located in the eastern plains (Llanos Orientales) region.

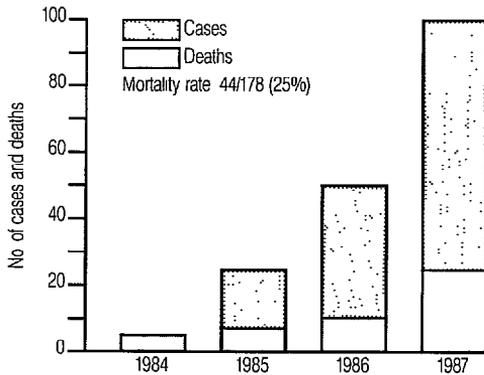


Figure 2. AIDS cases and deaths reported to the Colombian Ministry of Health, by year. Cases were recorded as AIDS if they met the CDC clinical criteria and yielded a positive ELISA test for HIV antibodies.

Three out of 60 (5%) of the tested homosexual/bisexual men in Villavicencio had HIV-1 antibodies, but no member of the other groups tested (female prostitutes, prisoners, and health service employees) was found to be infected. Likewise, only one of 762 Amerindians living in the remote eastern regions of the country was found to have HIV-1 antibodies.

Table 2 shows the prevalence of HIV-1 antibodies among volunteer blood donors in Colombia during 1985, 1986, and 1987. Relatively few donors were tested by the Red Cross in 1985 and 1986, but all were negative. During 1987, 32 of 38,077 donors tested (0.08%) were found to have HIV-1 antibodies. All of the positive donors were males.

DISCUSSION

The results of our studies indicate that HIV-1 infection and AIDS are widely distributed in Colombia and probably occur in most urban areas of the country. To date, the pattern of infection seems similar to that observed in Europe and North America, with most of the AIDS cases occurring among males in the 20-39 year age range.

Infection of these men has probably resulted mainly from homosexual activity. However, there is also evidence of heterosexual transmission of HIV-1 in Colombia, since AIDS cases and HIV-1 antibodies have also been found among

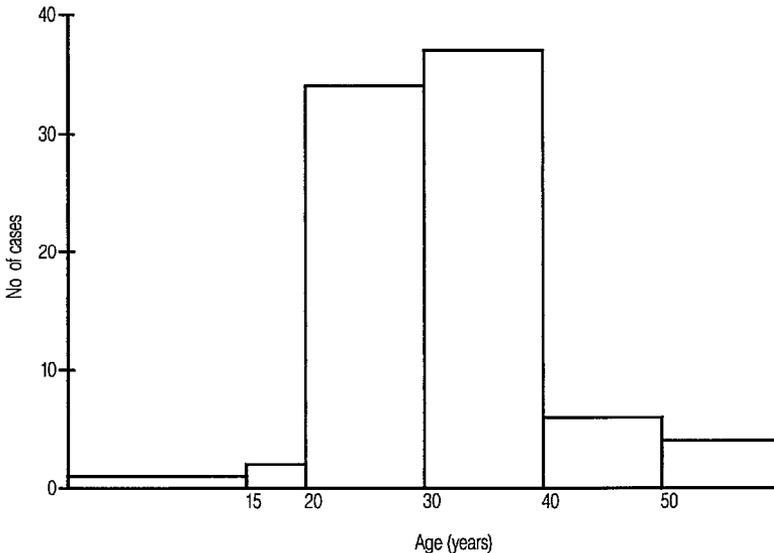


Figure 3. Distribution by age group of 84 Colombian AIDS patients whose cases occurred between January 1984 and December 1987.

Table 1. Prevalences of HIV-1 antibodies among selected population groups in Colombia (1985-1987).

Population sampled	Sex	No. positive ^a	Total tested	% positive
Amerindians (eastern Colombia)		1	762	0.1
Voluntary blood donors to Red Cross		32	39,690	0.08
STD clinic patients from the Bogotá Health Service	{M	137	936	14.6
	{F	1	159	0.6
STD clinic patients from several state health services in urban areas	{M	46	289	15.9
	{F	12	305	3.9
High-risk individuals requesting free AIDS testing at the National Institute of Health, Bogotá	{M	53	235	22.5
	{F	4	71	5.6
Homosexual/bisexual men (Villavicencio)		3	60	5.0
Health Service employees (Villavicencio)		0	201	0.0
Female prostitutes (Villavicencio)		0	287	0.0
Prisoners (Villavicencio)		0	205	0.0

^aPositive results with ELISA (Abbott HIV recombinant kit) confirmed by positive IIFA and Western blot analysis.

prostitutes. Cases associated with intravenous drug abuse have not been reported in the country. Aside from these two high-risk groups, the prevalence of HIV-1 infection in the general population is still quite low, as shown by the antibody rates among blood donors and other low-risk population groups (Table 1).

The total number of reported AIDS cases in Colombia has doubled or tripled every year since reporting began in 1984 (Figure 2). This pattern, essentially the same as that observed worldwide, points up the urgency of developing control

measures to halt the spread of HIV-1 infection. In Colombia, these control measures have included public education about AIDS, mandatory testing of blood donors, establishment of HIV-1 diagnostic laboratories, and provision of free AIDS testing services for high-risk persons.

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Table 2. Prevalences of HIV-1 antibodies found among volunteers donating blood to the Colombian Red Cross in 1985, 1986, and 1987.

Year	Sex	No. positive ^c	No. tested	% positive
1985 ^a		0	804	0
1986 ^b		0	809	0
1987 ^a	{M	32	24,673	0.13
	{F	0	13,404	0

^aData based on ELISA results from seven major cities.

^bData based on ELISA results from Bogotá only.

^cAccording to ELISA results obtained with commercial kits.

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Research and Funding to Fight AIDS in the Caribbean

Several research projects are being conducted in the Caribbean area with the support of the National Institute of Allergy and Infectious Diseases (NIAID) of the U.S. National Institutes of Health, in collaboration with PAHO. In one project, NIAID scientists are working together with their Haitian colleagues to identify the epidemiologic patterns of HIV transmission in Haiti. In Trinidad and Tobago, another group of scientists is studying the genetic and social factors that influence the acquisition of HIV infection and the onset of AIDS. Likewise, with the help of the NIAID, PAHO's Caribbean Epidemiology Center (CAREC) has established specialized research installations to support epidemiologic studies on the natural history of AIDS in the 19 member countries of CAREC.

To secure funding for AIDS prevention and control programs, a donors meeting was held in December 1988 in Barbados, sponsored by the WHO Global Program on AIDS, the Caribbean ministers of health, and other organizations. The meeting resulted in US\$15 million being pledged for support of the programs of 13 countries in the Caribbean area. The funds will be used for such activities as public education, care for HIV-infected persons, assurance of safety of donated blood and blood products, and surveillance and prevention of perinatal transmission of HIV.