AIDS UPDATE

Africa —no longer the dark and forgotten continent

By Genevieve Clavreul, RN, PhD

It was a refreshing change to attend the Third International Conference on AIDS and Associated Cancers held for the first time in Africa. This location helped enhance the feeling of cooperation between the African physicians and researchers and those of us from other parts of the world. It was the first opportunity for African professionals to adequately deal with the concerns of AIDS issues which are relevant in their own continent.

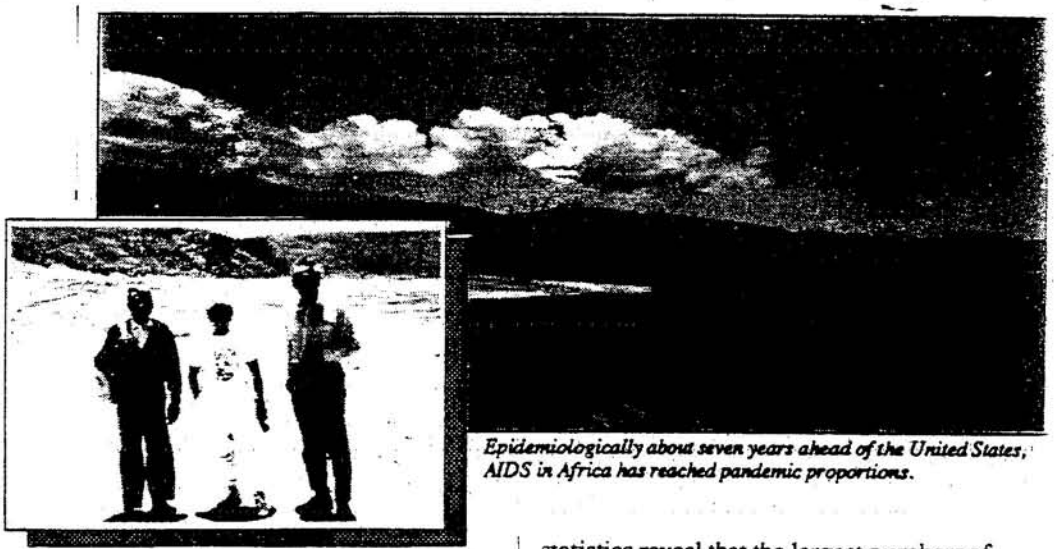
A total of 25 African countries were represented at the conference. It made one aware of the underdiagnosis and underreporting of HIV and AIDS in Africa, lack of funds, inadequacy of trained medical personnel and priority of other public health issues (malaria and malnutrition) to mention but a few. It was reassuring to see the cooperation and quality of the African researchers and physicians; their commitment not to simply ignore AIDS but to wage a full-fledged battle against it.

The following issues, findings and recommendations were discussed at the conference. Three infection patterns of the AIDS virus are apparent from analyses of both AIDS reports and seroprevalence data worldwide.

Pattern I is characteristic of industrialized countries with large numbers of reported AIDS cases. However, some non-industrial regions of North Africa also demonstrate Pattern I behavior. It is predominantly found in North and South America, Western Europe, Scandinavia, Australia and New Zealand.

Most Pattern I cases have been diagnosed among homosexual or bisexual males and IV drug users. Heterosexual transmission at this time accounts for a small percentage of the reported cases. However, this is steadily changing and certainly not for the better. It is felt that the HIV virus began spreading extensively in the late 1970s.

While transmission through blood transfusions and blood products occurred between the late 1970s and 1985, this mode has been all but eliminated due to routine and effective testing of blood donors. Unsterile needles are not considered a significant mode of transmission except for those used by IV drug users.



Epidemiologically about seven years ahead of the United States, AIDS in Africa has reached pandemic proportions.

Relatively few women in Pattern I areas are infected, except for those practicing high-risk behavior. Also, perinatal transmission is not common. The percentage of the population infected with AIDS varies from one to 50 percent based on which risk factor group the individual falls into. Pattern I accounts for the majority of reported AIDS cases to date.

Pattern II is predominantly found in Africa, the Caribbean and some areas of South America, countries where the spread of AIDS has occurred almost exclusively among heterosexuals. It is felt the ratio of infected males to females is probably 1:1. Because the number of infected women is extremely high, perinatal transmission is also quite common. The number of cases of AIDS based on homosexual behavior or IV drug use is not considered significant.

Pattern III is typical of Eastern Europe, North Africa and the Middle East, Asia and the Pacific (excluding Australia and New Zealand). This new pattern has been predominantly observed in individuals who have traveled to Pattern I and II areas and been involved in sexual encounters with infected individuals. Also, in these countries statistics reveal that the largest numbers of AIDS cases reported are related to contamination due to imported blood and blood products. It is felt that the HIV virus was probably introduced in Pattern III countries in the early to mid-1980s.

The epidemiology of AIDS in Africa has been found to vary greatly from country to country and is extremely complicated. HIV-1 appears more common in central and east Africa, whereas HIV-2 tends to be more common in west Africa. The difference in the natural history of HIV-1 and HIV-2 infections also partially explains the regional differences in the epidemiology of AIDS which has occurred. Marked differences have been documented in the epidemiology of HIV-1 even within one region. The risk of development of AIDS subsequent to HIV-2 infection appears lower at this time than that for HIV-1 infection.

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Another factor that must be taken into consideration is the difference in "high risk" behaviors which has been identified between the different African countries and which varies significantly from country to country. In spite of the conspicuous regional differences, heterosexual transmission has remained the most prevalent mode of transmission within Africa.

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To date 43 countries in Africa have reported cases of AIDS infection. The World Health Organization (WHO) has reported that half of the over five million asymptomatic HIV-infected individuals live in Africa. Not surprisingly, a higher number of cases have been reported in urban areas versus rural areas.

Cluster sample surveys were conducted in four Central African countries: Chad, Cameroon, Equatorial Guinea and Gabon. From these areas, 5016 individuals were randomly selected from 1986 to 1988 within several rural and urban areas. Prevalence rates among males and females ranged from 2 percent in Chad up to 12 percent in rural areas (Southern Cameroon, Equatorial Guinea and Gabon).

The first reported cases of AIDS in Tanzania occurred in late 1983 and the number of cases since has dramatically risen to over 3,000 by the end of 1987. The preliminary evidence suggests that the frequency of HIV infection varies from 0 percent to 16 percent in some regions of Tanzania.

A population-based survey conducted in 1987 in the Kagera region of Tanzania, was used to determine the magnitude of HIV-1 infection and the associated risk factors in Tanzania. The highest prevalence rate was found in urban areas (32.8 percent), whereas the lowest prevalence rate was found in rural areas (0.6 percent) with an overall prevalence rate among adults of 11.9 percent. The corresponding prevalence rates for children were 1.3 percent overall, 3.9 percent in urban areas, and 0.0 percent in rural areas. A higher prevalence rate was found among adults between the ages of 25 to 34 years old (41.3 percent) and children below the age of one (21.4 percent). Prevalence was higher among females in urban areas.

In a study conducted in April 1987 among a rural population sample in the Mwanza Region of north Tanzania, 64.4 percent of patients with clinical suspicion of AIDS tested positive for the HIV-1 antibody and those patients admitted for pulmonary tuberculosis tested positive at a rate of 25 percent. In a sample of 189 patients who were seen on an outpatient basis, HIV infection was prevalent in 12.5 percent of those patients with a history of sexually-transmitted disease and 10.6 percent in those with no history of STD. In subjects who were experiencing no health problems, 6 percent of 332 pregnant women surveyed tested positive for the HIV-1 antibody and 4.5 percent of 155 blood donors were positive. The sample was drawn from subjects who had no apparent risk factors for HIV infection and were mainly of the peasant class. This leads to the conclusion that HIV-1 infection is prevalent among the populace of rural Tanzania.

Seroepideiological studies were conducted in Guinea-Bissau, West Africa for the prevalence of HIV-1 and HIV-2 antibody. Heterosexual individuals living in both urban and rural areas were surveyed. As usual the urban areas showed a higher seropositive rate (10.1 percent) than the rural areas (7.0 percent).

During August 1987, a study was conducted in two communities outside of the capital city of Kampala, a semirural area of Uganda. The HIV infection rate overall for the sample group was 10.2 percent, although in females and males the actual infection rate was 12 percent and 8.4 percent respectively. The infection rate was more prevalent for those individuals who had reported cases of STD and multiple partners, and the rate increased with the number of partners.

A number of herpes zoster cases (329) were diagnosed from 1983 to 1987 at two hospitals in Brazzaville, Congo. The herpes zoster patients were tested for anti-HIV antibodies: 73 percent were positive. The AIDS and HIV positive patients (10 percent and 23 percent respectively) in Brazzaville had histories of herpes zoster during the last five years. The increase of herpes zoster has been significantly correlated with the spread of HIV infection. The lesions associated with herpes zoster and HIV infection also showed a tendency to be more necrotic and pluri-metameric.

AIDS has reached pandemic proportions in Africa, the continent hardest hit by the AIDS epidemic. All three patterns of infection can be clearly seen, although not all three patterns exist in each African country. Each country has its own particular epidemiology.

AIDS ranks as one the Africa's major health concerns, especially in central and eastern Africa. Many of the urban centers of the Congo, Rwanda, Tanzania, Uganda, Zaire and Zambia have reported that 5 to 20 percent of the sexually-active age group are already infected. Rates of infection among some prostitutes range from 27 percent in Kinshasa, Zaire, to 66 percent in Nairobi, Kenya, and 88 percent in Butare, Rwanda. Roughly half of the patients in hospitals in these cities are already infected with HIV. Ten to 25 percent of childbearing-age women are also infected; this translates into an increase in child mortality of about 25 percent. The adult mortality rate will be doubled or tripled by the early 1990s due to the AIDS virus.

The World Health Organization report of September 1988 showed the following ranking of African nations on the global AIDS World Map:

Congo	4th	57.3%
Burundi	6th	28.2%
Uganda	7th	25.8%
C.A.R.	12th	15.6%
Rwanda	13th	15.2%
Zambia	14th	13.9%
Kenya	16th	9.5%
Malawi	17th	7.8%
Tanzania	24th	6.9%
Guinea Bissau	34th	3.2%

It could however be much worse. The AIDS epidemic seems to be contained mainly in the urban areas, which account for only 10 to 20 percent of the population versus the rural areas which contain the majority of the population. An estimated 100,000 cases of AIDS have been reported as of mid-1988. Unfortunately, present health care systems in the developing African countries cannot cope with the current patient load. Even with the staggering numbers of cases already reported, underreporting of positive HIV diagnosis is extremely common in many of the African countries. This may be due to the low

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prevalence of the disease and the masking effect of other public health priorities. This advocates the need of increased awareness at all levels about the potential magnitude of the problem. Where HIV and AIDS infection prevalence is low, the danger then becomes one of complacency and laxity in not taking appropriate preventive measures. Preventive methods are most effective at the pre-epidemic stage of the disease. It should follow that education strategies should be considered and implemented with regard to local medical, social, economical and political conditions.

Due to the spread of the AIDS epidemic, Africa, about seven years ahead of the United States epidemiologically, is no longer the dark and forgotten continent. We can never ignore Africa again. AIDS in Africa is a frightening reality—one we must face and learn to deal with properly to avoid this situation in the United States. ■

About the Author: *Genevieve M. Clavreul, RN, PhD, is the Executive Director and founder of the World Immunological Network Foundation, established in 1987 for the purpose of disseminating the latest AIDS research information through a computerized data network and hotline, known as WIN-AIDS.*