AIDS IN AFRICA

By AMY CHOUIJARD

AIDS in Africa, like any deadly disease, has its share of villains. At present, it is not clear who introduced the virus into the continent, though some suspect that it came from Africa's apes. In any case, it has now spread across the continent, affecting men and women alike. In fact, AIDS is spreading more rapidly in Africa than anywhere else in the world.

In Africa, heterosexual intercourse is by far the most common route of infection, with prostitutes considered to be a high-risk group. But the virus has been slow to move into the heterosexual population in North America. The spread of the disease from Africa to the United States is slow at present, but the potential consequences are enormous.

According to Dr. Ronald, who now spends 10 months of the year in Nairobi, the findings of his group and others indicate that the surface glycoproteins (the envelope) of the AIDS virus are highly variable, while the core protein of the virus is the same throughout the world. Envelopes of AIDS viruses isolated in Zaire and Kenya, for example, have been observed to be markedly different. According to Dr. Ronald, the ability of the AIDS virus to alter its envelope is some 100 times greater than that of another highly variable virus, influenza A. Vaccines are designed to induce the human body to mount its own natural defense against specific diseases. But to be effective the body's immune system must have a consistently recognizable target on the virus to attack. Envelope variability, then, constitutes a hurdle to the development of an effective AIDS vaccine.

Although its origin is still uncertain, clearly the AIDS virus is new in Africa and the prognosis for those infected with it appears bleak as for their counterparts in North America. Within the AIDS belt across Africa, for every million Africans aged 16-45 years, 50,000 to 150,000 (5 to 15 percent) will suffer from AIDS within five years, according to Dr. Plummer. The toll in suffering and death will be enormous.

Kenya was the first country in Africa to acknowledge officially the presence of AIDS. In 1986, introducing a national policy aimed at preventing the spread of the disease, and
setting up an AIDS committee for control and investigation.

The AIDS research at the University of Nairobi is part of a larger project on sexually transmitted diseases (STDs), the sixth largest public health problem in Kenya and other countries of sub-Saharan Africa. The Kenyan government provides the bulk of the financing, with IDRC funding part of the Kenyans' work and part of the Canadians'. The Canadian team also receives funds from the Medical Research Council of Canada (MRC) and the Canadian International Development Agency.

CONSULTATION WITH CANADIANS

The Kenya-Canada collaboration began with a study of genital ulcers in conjunction with the microbiology department of the University of Nairobi. It has since expanded to include all sexually transmitted diseases, involving personnel from the Kenya Medical Research Institute, the Nairobi Department of Health, and the Kenyan Ministry of Health. Elizabeth Ngugi, the country's Chief Nurse, assists the research team. Since 1982, she has been devoting half a day each week to the battle against STDs, organizing a group of about 600 prostitutes to minimize their health risks. (Nairobi has an estimated 5000 to 8000 prostitutes.)

The research group has been working in four or five clinics, treating and advising patients as well as collecting samples of blood and genital smears. The clinics are mainly for maternal and child health, but one deals specifically with STDs.

The results of sample analyses document clearly the introduction of the AIDS virus and its spread among prostitutes in Nairobi. The data from men attending the STD clinic show that a past history of chancroid is closely associated with the virus.

Of blood samples collected from prostitutes in 1981, six percent showed evidence of infection. By 1984, the figure had jumped to 65 percent. In 1981, no evidence of the virus was found in blood from women in labour in Nairobi. In 1985, two percent of 1000 women in labour showed signs of infection.

Detecting the AIDS virus itself is difficult and expensive. Fortunately, there is a less sophisticated test available that detects AIDS-specific antibodies in the blood. The presence of these signals that an individual has been infected.

The time lag between exposure to the AIDS virus and development of the AIDS antibodies is uncertain, but estimates are that some individuals may be infectious for up to three months before they test positive.

It is also uncertain what proportion of infected people (i.e., those in whom AIDS antibodies are present) will later exhibit signs and symptoms related to AIDS. Epidemiologic data from follow-up tests on the infected Nairobi prostitutes a year later revealed that four percent had signs of AIDS or AIDS-related complex (ARC)—for example, persistent shingles. In the USA and Canada where epidemiologic data have been collected longer, 25 percent of infected people exhibit symptoms of AIDS or ARC within five years.

INTERNATIONAL PESSIMISM

According to Dr Ronald, the best information from the international meeting held in Paris in June 1986 led to pessimism. "There is no evidence that, if people become infected, but live for a number of years without symptoms, they won't eventually die of the disease," said Dr Ronald. "The consensus was that all infected individuals will eventually die of AIDS. Once the signs of the disease have emerged most people die within two years."

Reports of the epidemic elsewhere in Africa are alarming. In studies in Zambia and Uganda, AIDS antibodies were detected in as many as 14 percent of pregnant women tested. In Kinshasa, Zaire, seven percent of 24 000 hospital workers had the antibodies, and in Rwanda, 18 percent of blood donors (45 percent of rural donors) were likewise infected.

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Overall in North America the ratio of male to female victims is 13:1. In a screening of 300 000 personnel in the U.S. armed forces, the ratio was 1.5 to 1. The armed forces study has been criticized because it did not control for cases in which the victims were users of intravenously administered drugs. It does, however, provide strong evidence that the worst predictions about AIDS are true—any man or woman who has sex with multiple partners is at risk of the disease.

The data from studies in Kinshasa support the conclusion that intercourse is the main route of transmission. In one study of 40 AIDS cases in that city, 75 percent of the victims' spouses were infected, whereas the figure was 12 percent (mainly infants) for other household members.

Several months ago, a French scientist reported that as many as 50 insect species collected in Zaire harboured an AIDS-like virus. However, data on transmission of AIDS, as well as what is understood about the viability of the AIDS virus, indicate that insects are not acting as vectors. "No epidemiologic evidence supports this mode of transmission," says Dr Ronald. "Even the French researcher who reported the findings agrees."

The chances for an AIDS cure are grim as the virus is integrated into the victims' chromosomes. A great many drugs react against the virus when tested in the laboratory, but most have been disappointing in real-life tests. An exception to this is azidothymidine (AZT), which was originally developed in 1964 as a possible cancer drug. Recently tested in the United States, AZT appears to prolong the life of AIDS victims. But little is known of the long-term effectiveness of the drug.

The focus, then, must be on prevention of the spread of AIDS through the use of condoms or other measures. A change in sexual habits is another solution, say the doctors from Manitoba. In the next phase of their work, they will be collaborating with the Kenyans to evaluate, among other things, the use of spermicides as prophylaxes. They will also attempt to determine at what point in time the virus is spread from infected mother to child.

A preliminary survey of prostitutes in Nairobi provides some cause for optimism about the potential for control. From a group reporting virtually no use of condoms a few months ago, the current reports are a phenomenal 80 percent usage. Condoms are freely available in Nairobi and elsewhere in the world at family planning clinics. The hope is that they will begin to be widely used and that word about AIDS will move faster than the disease.

AIDS is often called 'slim' disease because of victims' severe weight loss.

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