

## HEALTH

# Search for Aids cure renews interest in prostitutes with unique immunity

Women from Nairobi slum have antibodies capable of stopping virus before it attacks

by ARTHUR OKWEMBA

Puzzled by a group of prostitutes who had resisted HIV infection even after being exposed to it, a group of scientists decided to study the unique women from Majengo slum in Nairobi.

From 1987, the researchers studied the women for over five years to find out what made them safe from the disease.

By 1992, they concluded that the women's immune system could produce cells known as cytotoxic T-lymphocyte (CTL), also called killer T-cells that could destroy cells infected with HIV before the virus could multiply in the body.

Buoyed by these findings, donors in 1996 gave the researchers funds to establish conclusively why these women resisted HIV infection. However, it was not until 2000 that the women were found to generate killer-T cells, which disabled the virus before it could infect new cells.

## Suffered setback

With this knowledge, the scientists rushed to the laboratories to develop a vaccine that would produce similar responses. They suffered a setback when 11 of the prostitutes became HIV positive.

Further investigations indicated that the women had stopped prostitution for about six months and only got infected after going back to the trade.

"A break from sex work was associated with a loss of HIV-specific CD8+ responses," said the scientists in their 2000 report titled "Late seroconversion in HIV-resistant Nairobi prostitutes despite pre-existing HIV-specific CD8+ responses".

According to the study, the prostitutes were only able to produce the killer T-cells after continually being exposed to HIV.

## Under attack

"Their bodies felt they were constantly under attack as the women slept with between three and six men every day, some of whom were infected with HIV," says Prof Omu Anzala, the director of Kenya Aids Vaccine Initiative.

When the women quit prostitution, their immune systems assumed all was well and reduced the production of the killer T-cells. By the time they went back to it, their bodies could not mount another defence immediately to counter HIV. They got infected.

The development raised fundamental questions on whether the vaccine based on the research was going to work, and if it did, how many times a person had to be vaccinated before he could be considered to be safe from the disease.

This meant that if the vaccine worked, an individual was going to be vaccinated on a regular basis to keep the immune system active. Such an approach, however,

Researchers also paying attention to immune systems of individuals who have lived with HIV for the past three years without using anti-retroviral medicine

had drawbacks as it would not only be expensive, but would also have health implications, especially when one has to receive several vaccines over a short period.

The project was eventually shelved in 2006 after the vaccine failed to produce the killer T-cells in sufficient amounts that could convince scientists of its possible efficacy.

A few years later, another vaccine based on the same cellular immune response concept was tried in South Africa in what has come to be popularly known as the STEP Trial. This too failed.

Then came the Merck vaccine, which failed after entering the most advanced stage of the clinical trials.

But as these trials aborted, the active prostitutes in Majengo and other parts of Nairobi had little to worry about as they continued to resist the virus, confounding the scientists even further.

"We went back to basic science to understand why these women continued to have an excellent immune system," says Dr Joshua Kimani, the clinical director of research for University of Nairobi and University of Manitoba.

Despite the drawbacks they have faced over the years, the researchers did not give up on the Majengo women.

Now, millions of shillings are being spent on fresh research to follow the



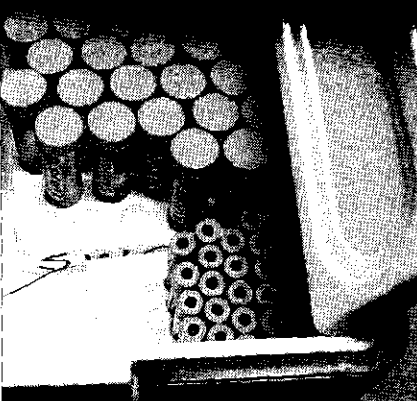
## 1987

The year in which scientists first started to study the unique women of Majengo

special breed. Many of the researchers, including Dr Kimani, still believe the solution to getting an effective vaccine lies with these women.

This quest for answers has seen researchers from University of Nairobi and University of Manitoba open up new centres in Korogocho and Kangemi to study more prostitutes there. The research will go on until 2010 and is expected to shed more light on resistance to HIV infection.

The women being recruited now are HIV negative prostitutes, who will then be studied for a period of three years to monitor their responses to HIV or any other sexually transmitted disease. So far, five per cent of them have been found to have the ability to resist HIV.



Aids, which has no known cure. Inset: Some of the samples collected for analysis as part of an ongoing research into a potential vaccine. Photos/FILE AND

work we need to undertake in this situation," says Dr Wayne Koff of International Aids Vaccine Initiative.

In an interview with the *Daily Nation*, Dr Koff said his group had identified four antibodies that could neutralise the virus.

## Immune systems

In this quest, the researchers are also paying attention to immune systems of individuals who have lived with HIV for the past three years without using anti-retroviral medicine. Some of them are believed to possess the neutralising antibodies.

Also to be studied are discordant couples — where one partner is HIV negative and the other positive.

Scientists are yet to decipher why one partner is able to remain negative for close to 10 years despite having unprotected sex with a HIV-positive spouse. They believe that unlocking this mystery could help them solve the HIV puzzle.

## Male sex workers hard-hit by HIV due to high number of partners

A new phenomenon is taking shape in Nairobi night clubs: The number of male prostitutes is on the increase.

Men who engage in this trade are now easier to come by than was the case in the past, says Dr Joshua Kimani, whose research work has put him in contact with some of them.

Most of the prostitutes, who cut across ethnic and race divides, are aged between 12 and 60 years. Their clients include the rich and even married men. It is estimated that there

are over 500 male prostitutes in Nairobi, compared to 1,000 in Mombasa.

This is causing increased friction between male and female prostitutes as they compete for clients.

The biggest worry among experts is the rising HIV prevalence rate among these men. Doctors whose clinics provide health services to this group say that for every five male prostitutes, three are HIV positive.

HIV PREVALENCE IS ESTIMATED to be as high 40 per

cent. And the rate at which they are acquiring the virus is believed to be even higher than that of female prostitutes.

Experts have attributed the trend to lack of information and lack of access to health services to help them prevent HIV and other infections. HIV and Aids messages, whether delivered by the Government or NGOs, do not target this group. Clinics offering services to these men are too few and lack expertise on how to handle the varied cases. Some male prostitutes also

fail to seek medical services due to stigma.

"Majority of them are concerned about the confidentiality of the HIV prevention centres they are expected to consult," says Dr Kimani. The researcher is the clinical director for the University of Nairobi and the University of Manitoba. Dr Kimani says that male prostitutes have been sending emissaries to his clinic on River Road, which is popularly known as Swop — the acronym derived from Sex Workers Outreach Programme. Dr Kim-

ani and his team are now having discussions with the representatives of the male prostitutes to find ways of making the clinic friendlier to them.

"THE OTHER THING WE HAVE decided is to train our staff on is how to handle these men once they start knocking on our doors," he says, adding, male prostitutes are more vulnerable to infections because they have more partners.

— ARTHUR OKWEMBA