

By Jacqueline Emodok

HIV prevention and treatment trials in Uganda started in the 1990s. The first trial was on the lowest effective dose of a drug called Zidovudine (AZT), which was the first antiretroviral therapy (ART) drug to be used in HIV treatment.

The drug was initially used in the Western world to treat cancer, before experts discovered it could also be used to treat HIV.

"However, they did not know in what dose it should be administered, therefore, a study was conducted in 1992 and Joint Clinical Research Centre (JCRC) participated in it," Dr Henry Mugerwa, the head of research at JCRC, explains.

The study registered good results and a dose was developed for AZT. However, with time, experts discovered that although the drug was effective, the virus quickly became resistant to it since it was taken as a single dose.

Myth demystified

Around this time, new ARVs had started infiltrating the market. JCRC took part in a study to ascertain what combination of drugs worked effectively for the treatment of HIV.

Despite Africa's participation in these studies, ARVs were a reserve for the Western world, until the DART (Development of Antiretroviral Therapy in Africa) study demystified the myth that ARVs could not be administered in the developing world.

"The Western world imagined that we did not have the intelligence to use the ARVs well," Mugerwa recalls.

"For example, during a conference, an expert argued that the drugs had to be taken at specific times but Africans did not have clocks. He said we were still using shadows and cocks to tell time, which was not the case. This showed how misinformed the Western world was," he adds.

The experts also argued about the Africans' ability to handle the side effects of ARVs. However, the DART study indicated that the drugs could be taken in developing countries without use of sophisticated tests and equipment.

"During this time, one had to do various tests, such as CD4, viral load, liver function and kidney function prior to being put on ARVs. These were good tests but not reason enough to deny us ARVs, and the DART study proved that," Mugerwa explains.

The success of the DART study led to a similar study on the use of ARVs by children dubbed ARROW (Anti-Retroviral Research for Watoto).

Opportunistic Infections

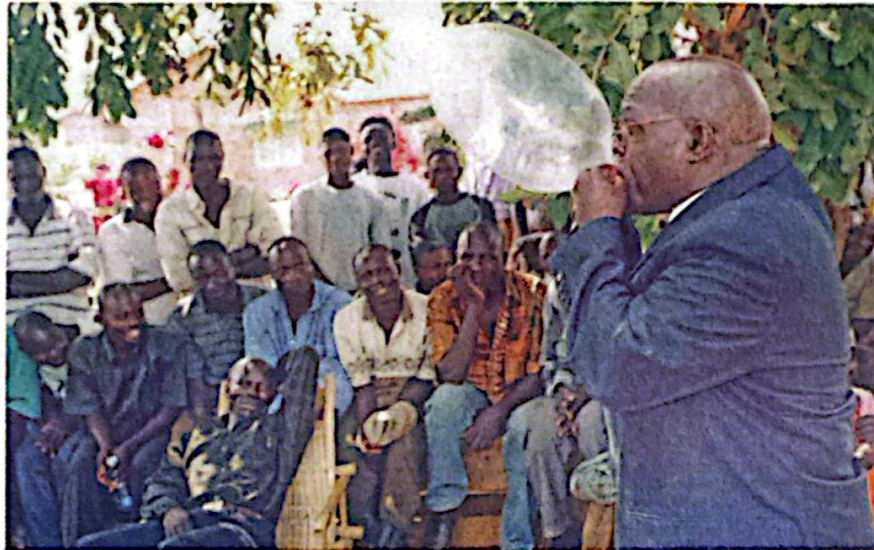
JCRC has been recently involved in research on drugs before they are released into the market.

These specific studies have been laboratory-based, which is a prerequisite for clinical research.

Besides studies on the treatment of HIV, Uganda has also conducted and participated in studies on opportunistic infections that come with the virus through partnerships with Gilead Sciences.

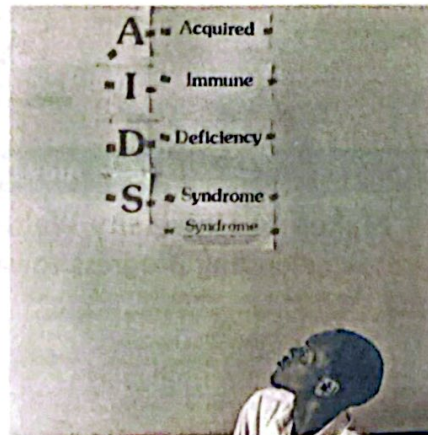
Remarkably, HIV does not cause death but affects the immunity system, leaving one vulnerable to infections.

How HIV clinical trials have fared



HIV/AIDS activist Rubaramira Ruranga demonstrates to builders that a condom has no perforations

DR HENRY MUGERWA, THE LEAD RESEARCHER AT JOINT CLINICAL RESEARCH CENTRE (JCRC), BELIEVES THAT AN INDIVIDUAL CAN BE IMMUNISED AGAINST HIV, JUST LIKE ONE IS IMMUNISED AGAINST MEASLES, WHICH IS ALSO A VIRAL INFECTION



These infections are termed as opportunistic infections and they pose danger to people living with the virus.

"As you treat HIV, you have to treat other diseases and conditions that come with it and the major one is tuberculosis (TB). Therefore, we have conducted studies on finding the effective treatment for such infections," Mugerwa explains.

The studies conducted sought to establish what drugs could effectively treat TB in a person living with HIV because some of the drugs did not work well together; one drug could inhibit another or heighten its side effects.

Other studies

Another monumental study was the EARNEST study, which focused on choices for a second line of treatment after cases of

people failing on the first line were registered.

The understudy recruited over 2,000 people and the results guided experts on what options of drugs could be used in the second line of treatment.

Unfortunately, some of those on second line treatment developed resistance, therefore, a study was conducted for third line treatment.

CD4 count

Uganda also participated in the START study, which recruited over 4,000 people across the world and changed the policy on how to treat HIV.

"It showed that it is better to start someone who has tested positive for HIV on treatment immediately instead of the initial policy, where medical personnel had to wait for someone's CD4 count to drop to

200 and below," Mugerwa says.

The CD4 count is a measure of someone's immunity. While there is no standard measure for all people, the recommended count is above 500 to 1,700. However, when one contracts HIV, the virus starts killing off the cells.

"The initial thinking was that as long as the CD4 count has not dropped, the person is not in danger, therefore, there is no need to start them on ARVs. However, the lower the CD4 count drops, the more susceptible one is to infections, such as diarrhoea and meningitis," Mugerwa says.

Experts questioned why they had to wait until someone was suffering from these infections in order to give them the ARVs. As a result, the recommended CD4 count was adjusted from 200 to 350. However, this decision was solely

Role of volunteers

The role of volunteers needs to be emphasised when highlighting the success of studies on HIV.

"Volunteers for research are as important as the doctors themselves; without them, we would not have developed drugs, combinations for treatment and interventions for prevention," Dr Henry Mugerwa, the head of research at JCRC, says.

Dr Flavia Matovu, the principal investigator at Makerere University-John Hopkins Research collaboration in Mulago, explains that prior to a study, researchers have to ensure the volunteers are a representative of the group the intervention is targeting.

She says volunteers are also given all the information they require about the study so that they can make an informed decision over their participation.

"We have a legal agreement termed as an informed consent form, which they read, ask questions or seek clarification. The form also states that volunteers can withdraw at any time during the study," Matovu explains.

It is important that those enrolled comply with the requirements of the study in order to give the researcher the required information. They should also participate in the research for the stipulated duration.

The volunteers should also be healthy so as to avoid scenarios where deterioration in one's health is attributed to an intervention. This is detrimental to a study, because it can prevent an intervention being licensed and yet it would have improved the health of people living with HIV.

"Before enrollment, volunteers are screened and emphasis is put on the health of their kidneys, liver, CD4 count and haemoglobin levels," Matovu says.

Healthy volunteers are also crucial for follow-up studies.

dependent on expert opinion, since no study had been done to make it acceptable and the START study did just that.

The study led to updating of the WHO guidelines on anti-retroviral therapy and pre-exposure which stipulate that anti-retroviral treatment should be initiated in everyone living with HIV.

Uganda has also participated in HIV vaccine trials conducted by JCRC and the Uganda Virus Research Institute (UVRI).

"We believe that someone can be immunised against HIV, just like one is immunised against measles which is also a viral infection," Mugerwa states.

He says researchers have tried to involve volunteers in the earlier stages of development of the studies. This has been done through Community Advisory bodies.