INTERVIEW

An AIDS cure

Global Researcher speaks out on why he cannot predict when it will come

American immunologist and Director at the National Institute of Allergy and Infectious Diseases at the National Institutes of Health in the U.S., **Dr. Anthony Fauci** was a young doctor when he saw his first HIV/AIDS case. This was in 1981, and they were treating a strange illness that had no name. The now 78 year old and colleagues moved to treating opportunistic infections until 1987 when he took part in the study that gave the world the first HIV drug. He recently spoke to *The Independent's* **Flavia Nassaka** on the sidelines of the Global Biomedical Research for HIV Prevention conference in Madrid, Spain.

You have headed the National Institute of Allergy and Infectious Diseases at the National Institutes of Health (NIAID) that oversees research into infectious diseases globally since 1984. This means you have been involved in the AIDS journey since its infancy. How has it been like?

I first learnt about HIV in June 1981 when a weekly report came in at the office showing five gay men from Los Angeles had reported to the clinic with strange symptoms of severe pneumonia. These symptoms were not new. We were already seeing them in cancer patients that had suppressed immune systems. But, the numbers kept increasing. When another report came out a month later, they were 26 and all gay men but this time from New York and San Francisco too. We were scared; we wondered what this strange illness was. We realised we needed to act and very fast because our patients would die only in a matter of weeks. That marked the beginning of my close relationship with HIV/AIDS.

We stormed the laboratories in panic with very little knowledge and after about five years of trial and era, Zidovudine or AZT, the first antiretroviral drug was approved for treatment of HIV in 1987. Patients first used it as a single drug but with more research, drug combinations were also proven to work and approved. That is how we moved into rolling out antiretroviral drugs to different parts of the world. By 1996, even developing countries like Uganda could now access treatment either in clinical trials or those who could afford to buy their doses. That closed the dark age of HIV, people started

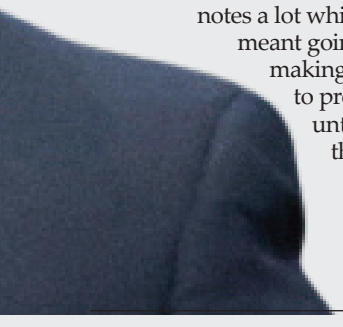
opening up, and there was scientific evidence of what really causes infection and how to avoid it. We started telling people that everything is under control and here we are now speaking about innovations such as Dapivirine rings, Carbotegravir injections and we are telling people that you can have a HIV positive partner but you will remain negative.

With so much research into prevention and the new devices that have been proved to be effective, what's challenging policy makers in Uganda now is dividing up the little resources to ensure both treatment and prevention are catered for. What choice would you recommend that they make?

They should try to strike a delicate balance because you to can't choose to do one and ignore the other. There is PEPFAR and the Global Fund providing some of these interventions but countries should make more investment in treating and preventing infection in their own countries. They can't pick one against the other but have to do more of both.

You are one of the global researchers considered very instrumental in the establishment of PEPFAR. What exactly was your role?

Even as antiretroviral drugs were quickly becoming available for all, many Africans were still dying in the 1981 strange style. So in 2002 I was asked by President George W. Bush to go to Africa to put together a proposal for a program to fight AIDS there. He was specific. He needed something that would offer both treatment and prevention. I spent most of that year putting together mathematical models to help us execute this assignment. We knew there would be a lot of questions, so we had to work out a procedure to determine things like cost, which countries to benefit and why and whether to focus more resources on prevention or treatment. We had to do a lot of consultations with people already doing something in these countries. When we came to Uganda, we consulted a researcher called Peter Mugyenyi. He already had a model for providing treatment where he had come up with a central core of treatment but with affiliated clinics to provide care on behalf of the center. We compared notes a lot which of course meant going back and forth, making presentations to president Bush until he accepted the proposal for making a contribution of $15 billion over five years. Our initial focus was to provide treatments to high prevalence countries.



We started looking for a vaccine in 1987 all of which failed. It's impossible to make a prediction because it's a scientific unknown

One of the newest additions to the treatment plan in Uganda is a new combination drug – TLD that was launched in September but, already, in other African countries like Kenya it was abolished shortly after its introduction. In Botswana, studies have showed some evidence of it being harmful to pregnant women. This comes at a time when there's talk of Africans being used as guinea pigs to test new medicines. What would be your views about this drug?

Dolutegravir is an intergrase inhibitor. It's one of the best drugs being used around the world including in the U.S. in combination with Truvada and it's just a good regimen. The World Health Organisation and other institutions have carefully looked at it and approved that it's good. I am puzzled by those who think it's not a good regimen.

One of the problems we have faced over the years and is not specific for Uganda is that whenever therapies are developed; especially by the western world to be used in the developing world, because of many years of history of oppression, there's always lingering distrust. The only problem is that you have got to make sure that this distrust doesn't get in the way of major benefits for the country. To say that they are being used as guinea pigs I would say is understandable but is just not true. One of the things one has to know is that all therapies that are proven elsewhere to be important is not taking advantage of the country that is helping.

You have been in the laboratory for 30 years trying to find an HIV vaccine. Why has it taken you so long to find an effective one?

It's a scientific problem. Vaccines for HIV are one of the most difficult scientific challenges that we have because of the following reasons. When you look at all the other vaccines that we have developed for hepatitis, polio, small pox or measles, what happens is that you use the natural infection as a proof of concept. So we know that whether you get infected with polio; that even though there is degree of morbidity and mortality, at the end of the day most of the people recover and they have an immune response that contains the virus. With HIV unfortunately, that's not the case. The body doesn't make an adequate protective response against natural infection. So it's difficult to get a vaccine that can do what natural infection can't. But, what we are trying to do right now with a vaccine is trying to get parts of the HIV virus in a form that the body recognises it and makes a response better than the response that it would make against natural infection. We say that we have to do better than natural infection because this is very unique from the viruses that we have been dealing with.

So when do we get a HIV cure?

We don't know. It's impossible to predict when you don't have a scientific answer. There is a lot of activity that is going on around the world but there are two major studies taking place in South Africa. One is using Clade C which is a predominant HIV sub type in Africa mostly among women and the other is the Imbokodo vaccine candidate both being tested to see if they will be able to work. We started looking for a vaccine in 1987 all of which failed. It's impossible to make a prediction because it's a scientific unknown.

And it's still costing the world billions of dollars trying to find. Why can't researchers abandon it and put all your energy and money in innovations that have been proven to work?

We can do both because clearly even with the non-vaccine prevention methods we are not decreasing incidence dramatically even as science has given us the tools we need to change the course of the pandemic and ultimately end it. Any argument that this cannot be achieved because we do not have evidence-based tools is no longer valid. Science has given us the tools. They must all be applied because ending the pandemic is a multifaceted challenge, but we know it is possible. Yet it will not happen spontaneously. It will require a global commitment of countries, governments and communities to strengthen their health-care systems and build the capacity to provide both treatment and prevention. IPL