EQUAL treatment

Magazine of the Treatment Action Campaign June 2011

DRUG RESISTANCE

My struggle with resistance: Mzi's story

HIV drug resistance: The science made simple

Patent wars: Fighting for future ARVs

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CONTENTS

Issue 38 – June 2011

Photo by Faizel Slamang.

Editorial

Medicines are developed to attack particular kinds of germs. But over time germs change; they evolve; they mutate. Sometimes they change sufficiently so that the medicines that are supposed to be effective against them stop working. This is natural; it's the way the germs work. It is true of the TB bacterium; it is true of the AIDS virus and it is true of all viruses and bacteria that infect people and animals.

So there is no reason why people with drug-resistant TB or HIV should be stigmatised. They simply have an illness and we have to do our best to treat their illness with the limited choices available. Nevertheless, when patients adhere to their drug regimens and when health systems are run well without drug stock-outs and bad prescription practices, resistance takes a much longer time to develop. Some very adherent people appear to be able to take the same antiretroviral regimen for decades, maybe even their whole lives, without having to switch because of resistance. But sometimes even very adherent people will develop drug resistance. And for the great majority of people, sticking to treatment every day of your life is simply difficult.

HIV

In South Africa, unluckily we have the most people living with HIV in the world, but luckily, in contrast to America and Europe, very few people have drug resistant HIV. In 2010, only about 3% of people in the public health system had switched to second-line antiretrovirals because they had drug-resistant HIV. Nevertheless with time, more people will develop drug-resistance. The problem is that the more drugs you become resistant to, the more expensive your options become.

For example, the South African government buys the standard first-line regimen of tenofovir, emitricitabine and efavirenz for about R150 per patient per month. But if you switch to a second-line regimen that contains lopinavir (which boosted with ritonavir is branded as Kaletra), the price of just this product is over R300, or more than double the cost of the entire first-line regimen.

But it gets much worse. The pharmaceutical company Roche manufactures a drug called raltegravir, which is not yet available in the public sector. This is a very important drug with relatively few side-effects compared to many older antiretrovirals. It is called an integrase inhibitor because it stops a protein called integrase inserting the genetic code of HIV into the human DNA. It works differently to the other antiretrovirals used in the public sector, so people who are resistant to the current public sector drugs will likely benefit from raltegravir. In the private sector it costs a whopping R2,400 per month! Not too many people in South Africa need this drug yet, but many will need it in future.

TB

Each year, several thousand people are diagnosed with drug-resistant TB in South Africa. Although it is fashionable to suggest that people who contract drug-resistant TB are not adherent, many of those who contract it are diagnosed with TB for the first time. So it cannot be due to non-adherence in their cases! Trying to blame people for having a drug-resistant germ is simply not helpful.

The situation for people with drug-resistant TB is much more complicated than for people with drug-resistant HIV. There are many good HIV drugs now, but only a few good TB ones. People with drug-resistant TB have a much higher chance of dying. The good news is that new TB drugs are being developed. One of these is called TMC207 and it is manufactured by Tibotec, a subsidiary of Johnson & Johnson. The drug still needs to be tested more but results from early clinical trials show that it is likely to be effective against multi-drug-resistant TB.

TAC's work in the next few years is therefore clear: we have to help secure access to drugs like raltegravir and TMC207 for people with HIV and TB. Making these drugs accessible will save many lives.

Nathan Geffen, TAC treasurer

Illustration based on photo by Marius Potgieter.

Resistance FIGHTER

By Mara Kardas-Nelson

When Mziwethu Faku isn't working, he is at the gym or spending time with his new wife. He took a break from his busy schedule to tell us about his life with HIV and the fight against antiretroviral drug resistance.

Mzi was born in Cathcart, Eastern Cape, in 1977. By his mid 20s he had moved away from his hometown to pursue life in big city Jo'burg. Despite Mzi being quite sick in 2001, the local doctors he saw did not know what was wrong. "None of the doctors could figure out exactly what I had until I got home," he says. "A doctor [in Cathcart] advised me to go for an HIV test. The results came back positive.

"I stayed at home trying to deal with the situation, and thought of committing suicide, all of those kinds of things, nê? I was wondering what would happen to my child. I decided I had to live just for her. I had no other hope, really. I knew nothing about the virus and just thought I would die – I didn't know what to do.

"So I decided to learn about HIV. I joined an organisation in town, doing awareness workshops, but we didn't speak much about antiretrovirals (ARVs) because we didn't know a lot about them then. In 2003, a woman from the Treatment Action Campaign (TAC) came from Cape Town, and she recruited me to [join] TAC. I later went to a treatment literacy workshop where I learned about antiretrovirals. I was so surprised to see men and women toyi-toying and saying there was hope. I soon began working with TAC.

"In 2004 my CD4 count went down [to 17] and I started antiretroviral therapy. […] TAC's Treatment Project […] organised medication for me, which was Triomune, only one pill a day, consisting of nevirapine, lamivudine (3TC), and stavudine (d4T). TAC got it from India and brought it all the way to East London.

"In 2008 I noted [signs of] resistance, which I honestly didn't understand because I was using a condom and taking the drugs as prescribed. But [thanks to] treatment literacy I knew that sometimes even if you take your

First-line and second-line

First-line treatment is the combination (regimen) of drugs people receive when they start antiretroviral treatment in the public health system. These drugs were chosen for first-line regimens because they are effective, safe and affordable.

If first-line drugs stop working, patients are switched to second-line treatment. Second-line treatments are also safe and effective, but they attack HIV in a different way to first-line drugs and are often more expensive.

The public health system currently offers no third-line regimens and there is little hope for patients who develop resistance to second-line treatment. These patients often have to keep taking drugs to which they have some resistance or they have to pay very high prices for third-line drugs in the private sector. The drugs that can be used as third-line treatment are much more expensive than first- and second-line drugs. (See pages 22-25 for more on how we can bring down these prices.)

Photo by Marius Potgieter.

treatment it doesn't always work. After six months I went for baseline tests and the doctor said that my CD4 cell count had dropped to 180 from 300. We agreed that there was drug resistance and that I needed to change medicines.

"I started taking Alluvia (lopinavir/ritonavir) and Inverase (saquinavir), which are both protease inhibitors* so normally wouldn't be prescribed [together]. But my doctor said I had no choice because I was resistant to all the available drugs in our country except for these two.

"[…] Six months later my viral load was undetectable and my CD4 was up. The following year, unfortunately, I was retrenched from TAC and my medical aid was cut. I decided to continue with the medication. Even though Alluvia was available in the public sector, Inverase wasn't, and [it cost] R820-R850 for a month's supply. It got to a point where I couldn't afford it. I was paying rent, I had a car, I had to eat, I had to support my family and work didn't pay me well enough to afford all of this.

"Finally, with the help of Dr. Francois Venter from the University of the Witwatersrand, I got [a new drug regimen of] Alluvia, lamivudine (3TC) and tenofovir (TDF), all of which are available in the public sector. I started these in January 2011 and got my test results. My viral load is undetectable and my CD4 is up to 461."

Mzi now lives in East London, a place he's called home since beginning a job with South Africa Partners in 2009. He visits Cathcart often to see his ten-year-old daughter, who lives with his grandmother. He and his wife hope to have a child. "I'm well," Mzi tells me. "I'm really, really well."

The support of his family has been central to ensuring that Mzi adheres to treatment. "I finally accepted my HIV status in 2003, and the first person I talked to was my big brother. I came to East London for a workshop and called him to my hotel and told him, and he said, 'Brother, it's not the end of the world. You're not alone.' And he hugged me and was glad that he finally knew what was happening.

"Those close to me know I am living with HIV, and this helps me to adhere. The people around me know that I must take my medication at 9 o'clock. If I'm at home at 9 my wife reminds me that I must take my ARVs."

Mzi is grateful for the life he has now, but he calls on civil society and government to increase access to new and existing ARVs. "I'm worried because when you look at our country the regimen I'm on is the last one you can get," he says. "A friend of mine has a CD4 count of four and she's on a second-line regimen. She went for a test and [discovered that] she is resistant. But she's fortunate because she's on medical aid. What about those of us who do not have medical aid and who become resistant to second-line regimens? How do we get resistance testing [without] medical aid? And if we do manage to get tested, the third-line drugs we need won't be available in the public sector."

* Protease inhibitor: A type of antiretroviral that blocks the action of protease, an enzyme that is needed to make copies of the virus.

Adherence Tip

"I keep my pillbox on top of my TV and I make use of TV shows as reminders. I take my treatment at 21:00 and that is the time *Muvhango* starts. When the show is not on, e.g. on Friday and over the weekend, I can rely on my phone's alarm going off at exactly the same time."

Kelebokgile Kabanyane, Treatment Action Campaign, Ekurhuleni

Photo by Luckyboy Mkhonwane.

Photo by Marius Potgieter.

ARVs available in the public sector

First-line

All new patients, including pregnant women, must receive

tenofovir + lamivudine/ emtricitabine + efavirenz/nevirapine

Patients currently on a stavudine-based regimen, with no side-effects must receive

stavudine + lamivudine + efavirenz

Those who experience d4T side effects can switch to the option on the left.

Patients with kidney problems (for whom tenofovir is unsuitable) must receive

zidovudine + lamivudine + efavirenz/nevirapine

Second-line

Patients who fail on a tenofovir-based first- line regimen must receive

zidovudine + lamivudine + lopinavir/ritonavir

Patients who fail on a stavudine or zidovudine-based first-line regimen must receive

tenofovir + lamivudine/ emtricitabine + lopinavir/ritonavir

the science of
DRUG RESISTANCE

When a drug stops working we often say that the infection (whether a virus, bacteria or fungus) has become resistant to that drug. In this way HIV sometimes develops resistance to first-line treatment. People then have to switch to second-line treatments that are currently much more expensive. But why does HIV become resistant in the first place?

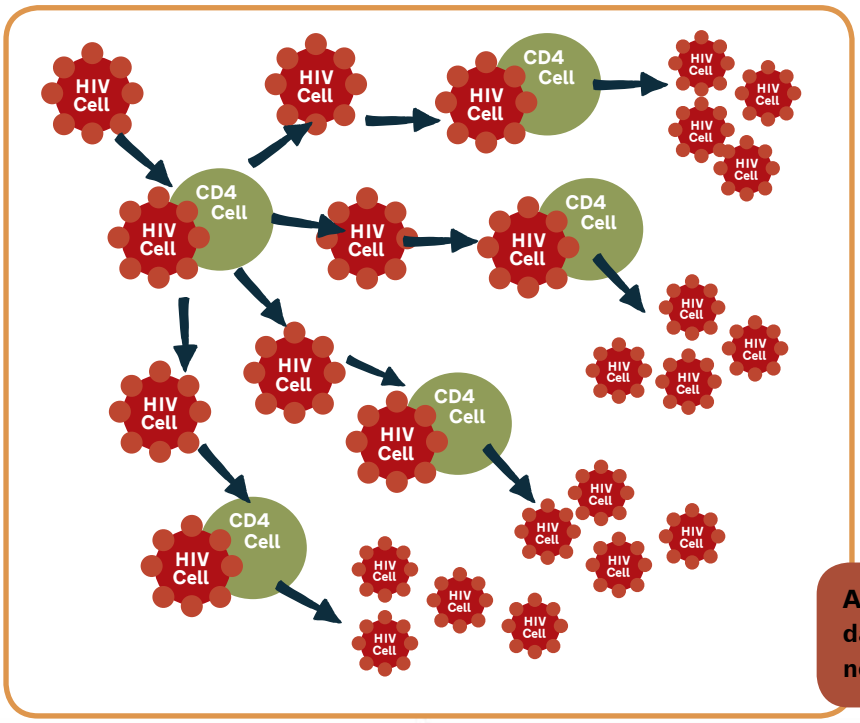
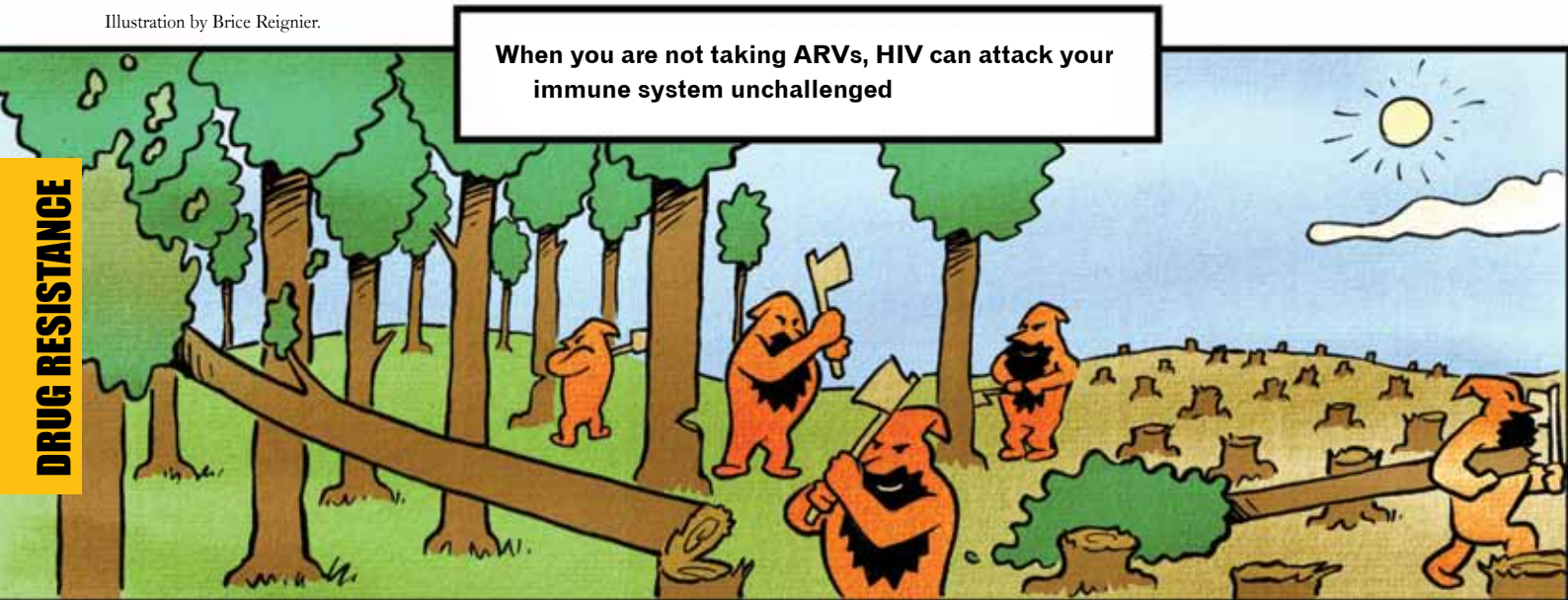


Illustration by Brice Reignier.

A fast multiplier

- The human immunodeficiency virus (HIV) enters white blood cells and hijacks them.
- It uses these cells to make more HIV – perhaps 300 more from each cell.
- These new copies of HIV then infect other white blood cells and the process starts all over again.
- HIV is very good at multiplying itself. That is why people who are not on treatment often have tens of thousands of copies in a single millilitre of their blood.

An HIV-infected active T cell only lives for about a day and a half. In this time it makes several hundred new copies of the virus before it dies.



Not just one strain

When HIV makes copies of itself inside a cell, it often makes small mistakes called mutations. These mutations mean that some of the new HIV is slightly different from the virus that first infected the cell. Most of these mutations make the virus weaker and do not survive for long.

The strain of HIV with which most people are infected is called wild-type virus. The wild-type virus is very good at damaging your immune system when you are not taking treatment. However, once you take antiretrovirals (ARVs) regularly, the wild-type virus has great difficulty surviving in the body.

However, even when a person takes ARVs the virus keeps mutating, although at a much slower rate. Essentially, the virus continues mutating in different ways until it accidentally stumbles upon a mutation that helps it overcome the antiretrovirals. The moment one of these mutations occurs, the newly-mutated strain will multiply faster than other strains because it is better at overcoming the specific ARVs that the person is taking.

The power of triple therapy

Antiretroviral therapy is the only proven way to suppress HIV (bring down viral load) and help to boost the immune system (increase CD4 count). Antiretrovirals do this by intervening to stop HIV from hijacking cells. As you'll see on pages 16 -17, various classes of HIV drugs intervene at different stages of the infection (hijacking) process.

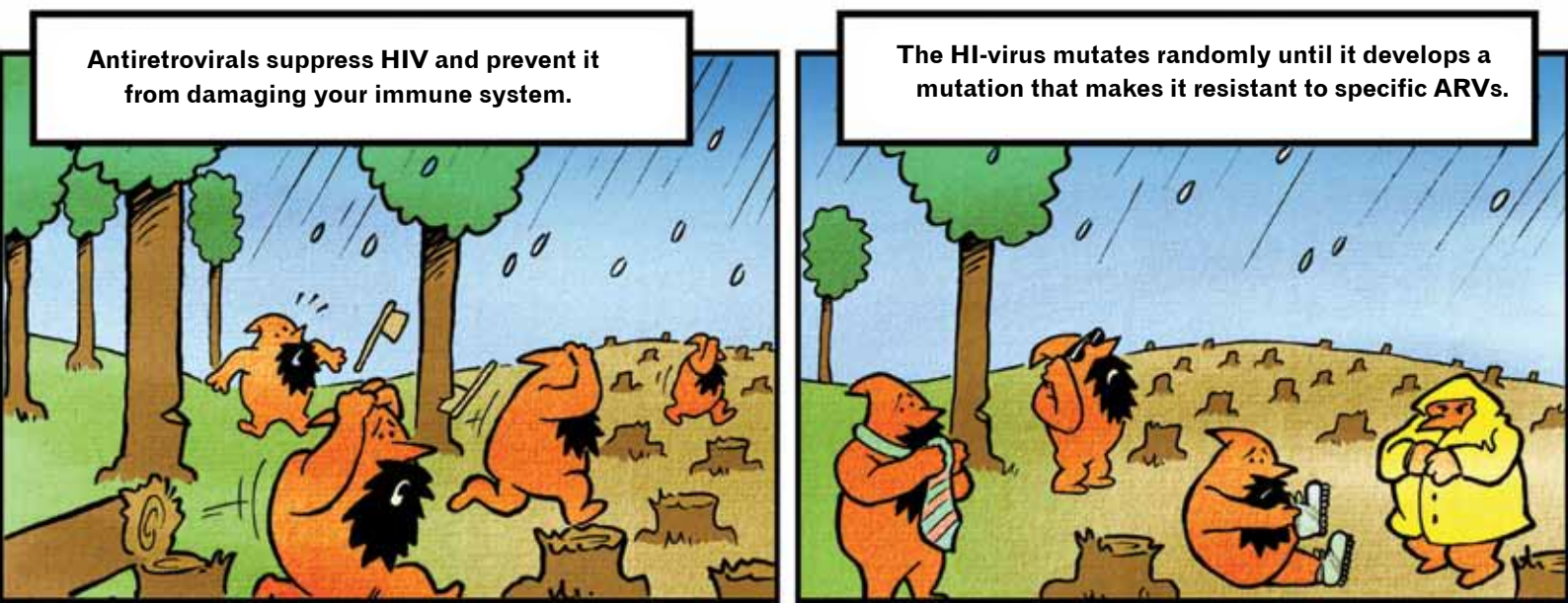
If you use only one drug to attack a virus, it can be relatively easy for the virus to mutate and develop immunity to that drug. But, if you attack the virus on three different fronts, it becomes much harder for the virus to mutate. This is because even if the virus develops a mutation that can beat one attack, the other attacks will still control it. This is why highly-active antiretroviral therapy (HAART) usually consists of three antiretroviral drugs.

If you think of suppressing the virus as being like a soccer match, you can say that you are more likely to stop the virus if your defenders have different strengths. You might need a fast defender to cover the wings, a tall defender to head away the crosses, and a smart defender to anticipate what the attackers are planning.

How drug resistance develops

Taken correctly, triple-drug treatment is very good at controlling HIV. Treatment often sees a patient's viral load drop from many thousands of virus copies per millilitre of blood to less than 20.

Unfortunately, we don't yet know how to get rid of every single copy of the virus to cure someone of HIV. Even with the best available treatments taken exactly as they should be, some HIV always remains in the body – mainly by hiding out in sleeping CD4 cells. These are referred to



as the cellular reservoirs. HIV may also be in other tissues but the main concern for people researching a cure, is the sleeping cells.

As soon as treatment is stopped, HIV can come out of the virus reservoirs where it was hiding and start to multiply freely again. This is why currently HIV treatment is lifelong.

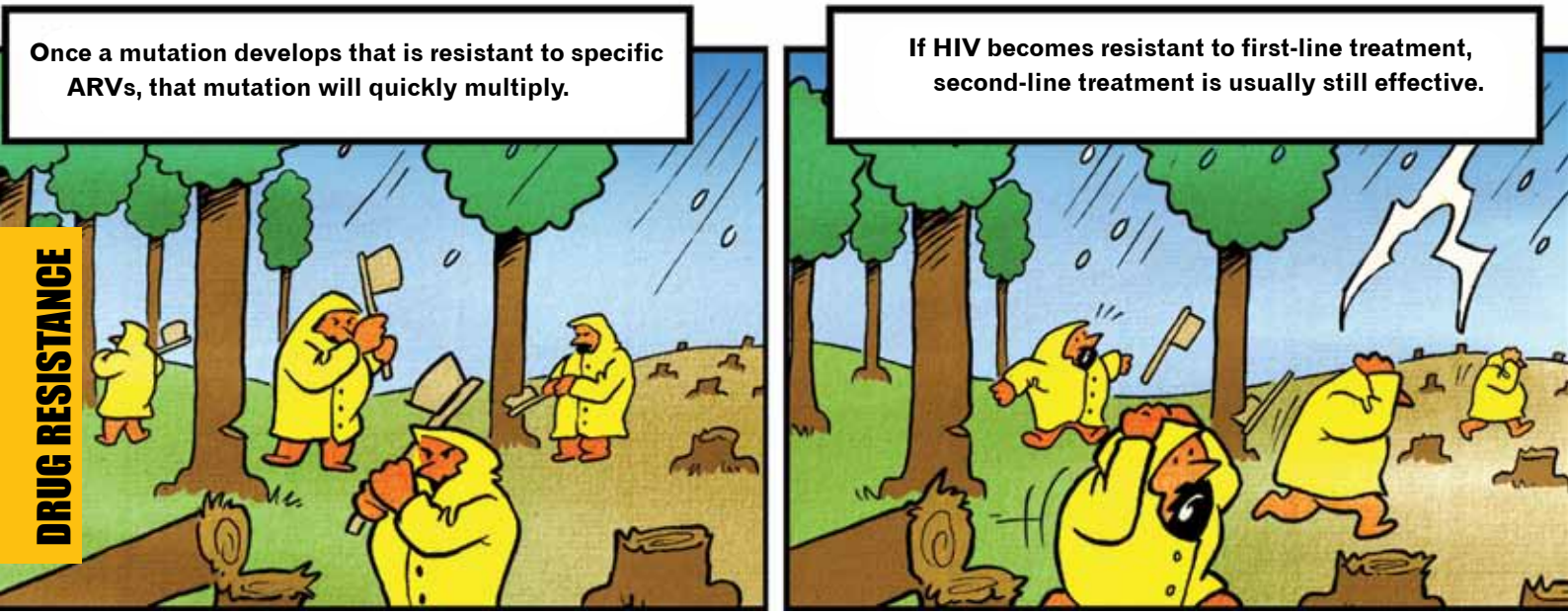
If you stop taking treatment the virus will use that gap to multiply and to mutate more freely. Within a few days your viral load will be detectable again and within a few weeks it can be back in the thousands. This is why treatment stock-outs are such a worry. A few years ago it was thought that taking a break from treatment might be possible, but a large trial found that people who took a treatment break were much worse off than people who did not. One reason for this is that breaks from treatment allow the virus to mutate more freely.

For example, a slightly mutated form of the virus might be under control, but because a patient stops taking treatment this mutated strain might develop into an even more drug-resistant form of HIV. If the patient then starts taking the same treatment as before, it may no longer work. The older strains would still be suppressed by the drugs, but the newly-mutated strain would not be controlled and would multiply, becoming the dominant strain in that person's body. In such a case the patient would have to switch to a new combination of ARVs to which that strain of HIV is not yet resistant.

Can drug resistance be transmitted?

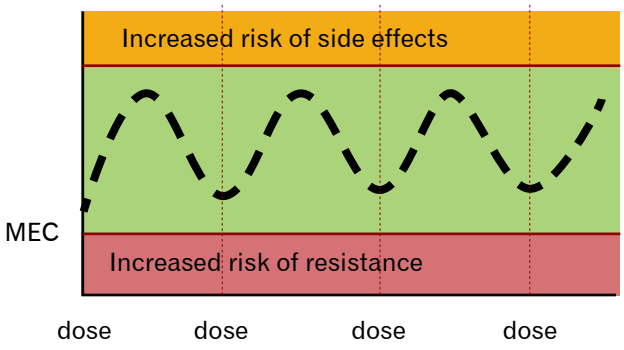
When a person infected with a drug-resistant strain of HIV transmits the virus to another person, the newly-infected person will have the same drug resistance. In this way a newly-infected person can be resistant to certain drugs from the day of infection. Unfortunately we do not have a very clear idea of how big a problem drug resistance is in South Africa. According to various rough estimates, less than 5% of new HIV infections involve drug-resistant strains.

In some wealthy countries resistance testing is available to newly-diagnosed patients. These tests help predict which drug may or may not be effective. However, resistance tests are not currently available in the South African public health system due to their relatively high cost and the fact that the public health system uses standardised regimens rather than tailoring treatment to every individual.



Graph A: Drug levels and resistance

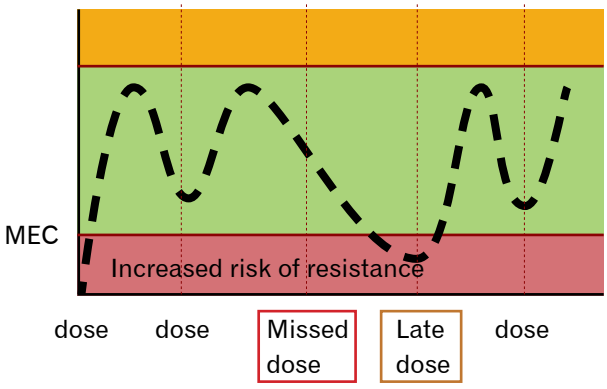
The target drug level needs to be above the MEC to avoid resistance but not so high as to cause side effects.



MEC = Minimum Effective Concentration

Graph B: Drug levels and resistance

If you miss a dose or are late taking it, drug levels can drop to a point where resistance can occur.



Illustrations based on graphs from HIV i-Base.

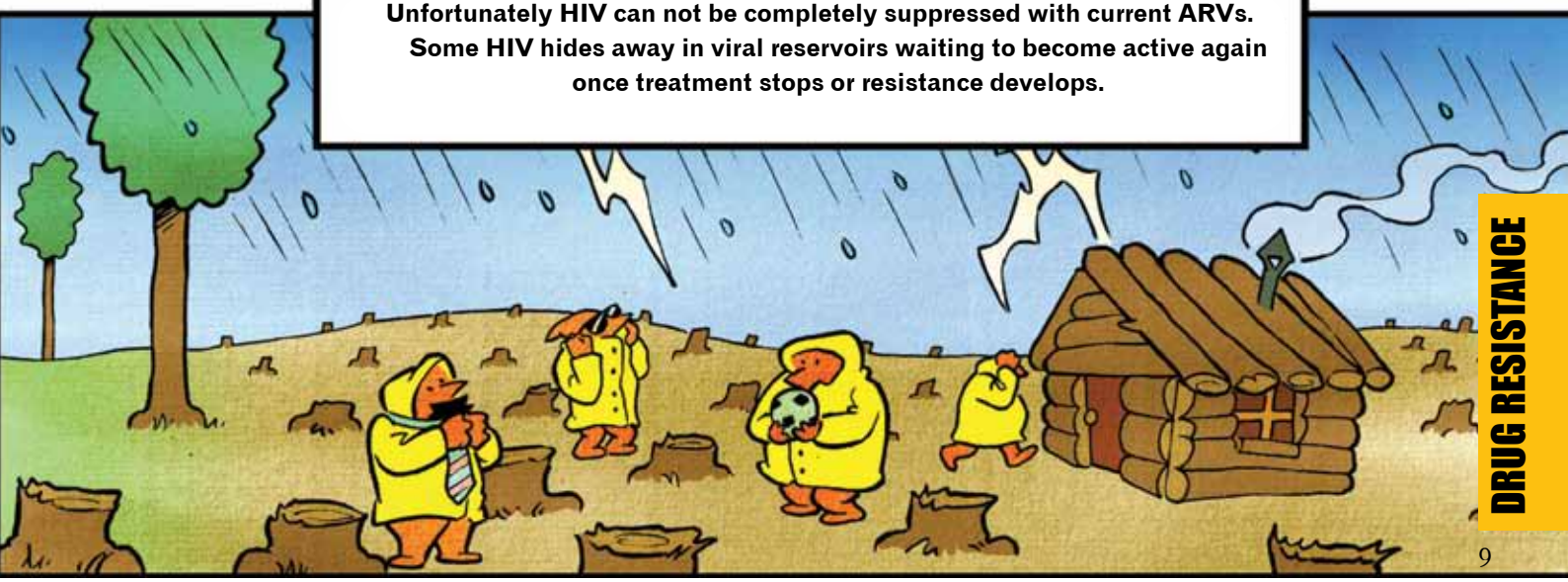
Adherence Tip

"You can put your treatment in a place where you are most likely to be when it is time to take it. For example, if you brush your teeth first and last thing in the morning, putting your treatment next to your toothbrush acts as a reminder."

Stephen Ngcobo, Treatment Action Campaign, Ekurhuleni

Photo by Luckyboy Mkhonwane.

Unfortunately HIV can not be completely suppressed with current ARVs. Some HIV hides away in viral reservoirs waiting to become active again once treatment stops or resistance develops.



IN THE OPEN

By Mary-Jane Matsolo

How do you tell a child that he or she is HIV-positive?

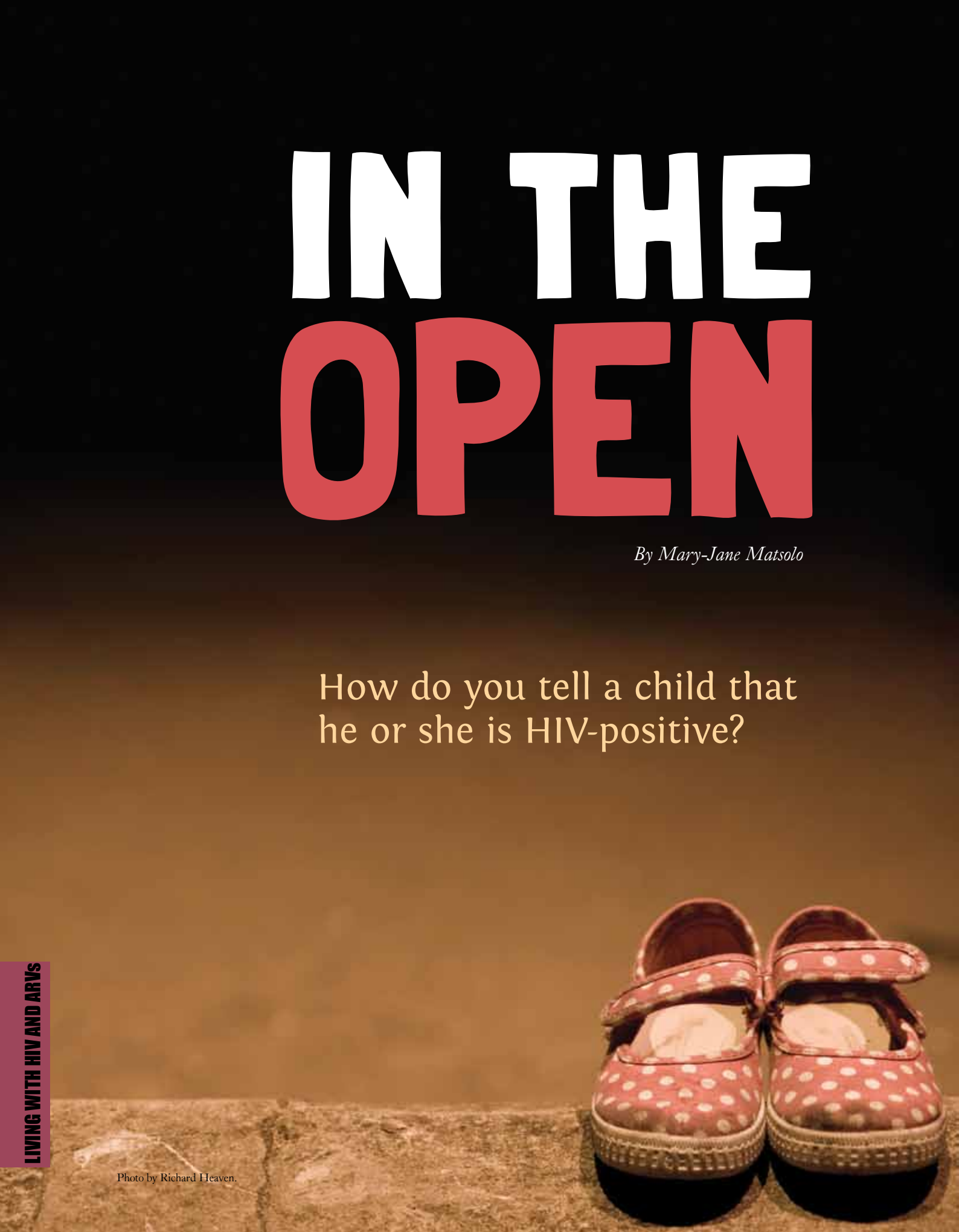


Photo by Richard Heaven.


Photo by Maureen Sill

I check the time on my watch. 15h30. It is a hot lazy Friday afternoon. I walk into the Ubuntu clinic in Khayelitsha hoping that the facility manager—Sis'Mpumie, as she is affectionately known—has not forgotten about our meeting.

In the clinic there is now just a handful of people left in the waiting area, but the room still has the pulse of what was another busy day at the clinic. Sis'Mpumie is inside her office with another nurse. I alert her to my arrival and patiently wait for her to finish her meeting.

About five minutes later she calls me in. Sis'Mpumie's office is filled with pictures of her awards and achievements, alongside a photograph of her wearing an 'HIV-positive' T-shirt symbolising that she is not only the manager of this facility but also an active member of the Treatment Action Campaign (TAC). I can't help but notice that her eyes look exhausted and when I ask she tells me that she is not feeling particularly well. So without further delay we get right down to our interview.

Q. Why do parents find it difficult to disclose to their HIV-infected child that the drugs they are taking are ARVs?

A. Parents vary. There are those who have problems disclosing their own HIV status to others and naturally this type of parent will find it difficult to tell the child about his or her status. Others are still in denial themselves.

Another reason is that [sometimes] no real relationship exists between the parents and their children, there is no bond between [them that would help] the child feel free to talk.

Also, HIV comes with a huge stigma attached to it and parents might want to protect their children from the outside world.

Q. When is the right time to tell a child that he or she is on lifelong ARV treatment?

A. There is no clear-cut answer to this, but what is important is the way in which you [tell the child]. Parents are advised to start informing their children from the age of six years and up.

Q. How should parents go about informing a child of his or her HIV diagnosis?

A. It is important that the person who tells the child about their HIV status is the person closest to their child. [Whether] it is the mother, grandmother or caregiver, it is that person who needs to break the news to the child. Parents should not give their child misleading information. For example, encouraging a child to believe that the medication he or she is taking is flu medication […] could lead the child to lose trust in their parent.

Disclosure needs to take place in steps. The first step is to establish how much information, if any, the child already knows about [the disease]. If your child knows nothing about HIV/AIDS you then need to talk about it and cover everything from infection through to treatment […]. Once the child is clear [about these issues] disclosure can follow afterwards—unless the child has come across the information beforehand, in which case the parent may have to do damage control.

Q. How big is the problem of parents finding it difficult to disclose HIV diagnosis to their infected children?

A. At the moment we have no figures that show the extent of the problem, but the problem does exist. In the meantime we are looking into having a paediatric team in our facilities who would use a checklist or tools to document just how much children do know about HIV/AIDS. We have noted that the risk stage for infection in children lies between the ages of 7-14 years, the early adolescent stage.

TIPS FOR CAREGIVERS

The why, when and how of telling a child that he or she is HIV-positive

By Nokuphumelela Zwane

Why should I tell my child?

- Your child has a right to know their HIV status.
- The child needs to know how to protect themselves and others, especially once they are sexually active.
- Your child may have started asking questions about why they are taking medication.
- The child might be confused or upset because they do not understand what is wrong with them.
- Telling your child about their HIV status allows them to take ownership of it.

When should I tell my child?

- Because every case is different, no specific age is best. You should be guided by the questions your child is asking.
- You need to be prepared for the discussion. Consult a counsellor if you feel unsure.
- If your child refuses to take medication because they do not feel sick, this is an important time to start talking to them about HIV and how antiretrovirals (ARVs) work to keep you healthy.

How do I talk to my child about HIV?

- You should tell your child yourself, but you can use the support of clinic staff, other caregivers, friends or family.
- Disclosing to your child should happen in stages, starting from what your child already knows and moving slowly to what he or she does not know.
- You can give an example of a person who is living well with a chronic illness. This will show them that a good life is possible for people with HIV.
- Explain to your child how they contracted HIV.
- Describe how HIV progresses, the role of antiretroviral treatment (ART) and the benefits of adhering to ART.
- Try to mention the word 'HIV' only towards the end of your discussion. Children have their own ideas about HIV from school, the media and their friends. It is important to explain how the virus works first, when the child is open to listening and is not affected by the stigmas and stereotypes they may have heard.
- Ask your child who else should know about their status. Your child's wishes must be respected.
- Refer your child back to the counsellor for further discussion.

Quick tips:

- Always discuss with the counsellor the questions your child asks.
- If you are HIV-positive, and especially if HIV was transmitted from you to your child, you should be prepared for unwanted disclosure of your own HIV status.
- If HIV was transmitted from you to your child, your child might blame you for infecting them. This may be temporary, but you must prepare yourself for dealing with this.
- You should be careful that your own fears of what your child or others may do, do not stop you from telling your child about their HIV status or from providing support.
- You should be a role model of good treatment adherence and defuse the myth that HIV is a death sentence.

Nokuphumelela Zwane works for the the Reproductive Health and HIV Research Unit (RHRU), University of the Witwatersrand.

RHRU's portfolio includes reproductive health, HIV research and health service interventions. In October 2010, RHRU merged with ECHO (Enhancing Children's HIV Outcomes), another University of the Witwatersrand research unit specialising in HIV in children. ECHO runs a range of services providing support, information and representation for infants, children and adolescents infected or affected by HIV.

Treatment Diary

This diary will help you remember to take your drugs at the right time each day. You can then tell your doctor how well you are adhering to your treatment. Write the name of each drug in separate boxes in the top row. Write the time you need to take the drug in the second row. Make or draw a copy of the diary so that you can keep using it. Use your diary everyday – tick off the box and write the time after each dose.

WEEK OF _____

	AM			PM		
Drug						
Time						
Monday						
Tuesday						
Wednesday						
Thursday						
Friday						
Saturday						
Sunday						

Know your A

Read up on the different kinds of antiretrovirals and how they work. You can also use this chart to check availability by using the colour coding:

- Available in public and private sectors
- Available in private sector only
- Not registered in South Africa but registered in the United States
- Experimental

Drug prices are South African as quoted in May 2011. Amounts represent monthly cost per adult.

Non-nucleoside Reverse Transcriptase Inhibitors (NNRTI) – 'Non-Nukes'

In order for HIV-infected cells to create new copies of HIV, HIV must copy its own genetic code into the cell's DNA. HIV uses a reverse transcriptase enzyme to do this.

Like 'nukes', 'non-nukes' (NNRTIs) also stop cells from producing new copies of HIV. But instead of tricking HIV's reverse transcriptase enzyme, they attach themselves to the reverse transcriptase enzyme and prevent it from converting HIV's genetic code into DNA.

Efavirenz (EFV)
30 x 600mg tablets: R40.11 (Public) R134 (Private)

Nevirapine (NVP)
60 x 200mg tablets: R23.42 (Public) R62.07 (Private)

Etravirine
120 x 200mg: R1005.48 (Private)

Delavirdine (DLV)
FDA approved. Not registered in South Africa.

Lersivirine
Experimental

Rilpivirine
Experimental

Nucleoside Reverse Transcriptase Inhibitors (NRTI) – 'Nukes'

NRTIs or 'nukes' prevent the HIV-infected cell from producing new viruses.

In order for the HIV-infected cells to create copies of HIV, HIV must copy its own genetic code into the cell's DNA. HIV uses a reverse transcriptase enzyme to do this. 'Nukes' help to prevent the HI-virus from reproducing by tricking the reverse transcriptase enzyme into using faulty building-blocks for building DNA.

Zidovudine (AZT/ZDV/Retrovir)
60 x 300mg tablets: R62.07 (Public) R228 (Private)

Didanosine (DDI)
60 x 50mg tablets: R108.29 (Public) R222.30 (Private)

Lamivudine (3TC/Epivir)
Oral solution (240ml bottle): R15.79 R15.79 (Public)
60 x 150 mg tablets: R20.49 (Public) R44.40 (Private)

Stavudine (d4T)
200ml bottle: R19.36 (Public)
60 x 30mg capsules: R12.84 (Public) R34.18 (Private)

Emtricitabine (FTC)
30 x Emtricitabine 200mg and Tenofovir 300mg tablets: R104.95 (Public) R483.78 (Private)

Tenofovir (TDF)
30 x 300mg capsules: R54.82 (Public) R204.06 (Private)

Abacavir (ABC)
240ml bottle: R71.12 (Public)
60 x 300mg tablets: R128.14 (Public) R531.24 (Private)

Amdoxovir (AMDX)
Experimental

Apricitabine (ATC)
Experimental

Apricitabine (Beta-L-Fd4c)
Experimental

ARVs

Protease Inhibitors (PIs)

When HIV infects a CD4 cell (T cell) in a person's body, it copies its own genetic code into the cell's DNA. The CD4 cell is then 'programmed' to make new HIV genetic material and HIV proteins. The proteins must be cut up by the HIV protease – a protein-cutting enzyme – to make new HIV particles.
PIs block the protease enzyme and prevent the cell from producing new viruses.

Ritonavir/Lopinavir
Lopinavir 200mg and Ritonavir 50mg x 120 tablets: R308.27 (Public)
Lopinavir 80mg and Ritonavir 20mg/ml oral solution, 5 x 60ml bottle: R285.47 (Public) R308.27 (Private)

Darunavir
120 x 300mg tablets : R977.72 (Private)

Saquinavir
270 x 200mg tablets: R797.18 (Private)

Atazanavir
60 x 200mg tablets: R434.72 (Private)

Indinavir (IDV)
FDA approved. Not registered in South Africa.

Fosamprenavir (FPV)
FDA approved. Not registered in South Africa.

Atazanavir (ATV)
FDA approved. Not registered in South Africa.

Nelfinavir (NFV)
FDA approved. Not registered in South Africa.

Integrase inhibitors (IIs)

In order for HIV to successfully take over a CD4 cell's machinery so that it can produce new viruses, HIV's RNA is converted into DNA by the reverse transcriptase enzyme ('nukes' can block this process).

After the 'reverse transcription' of RNA into DNA is complete, HIV's DNA must then be incorporated into the CD4 cell's DNA. This is known as integration. Integrase inhibitors work by blocking this process. So integrase inhibitors stop HIV's DNA from being incorporated into the T cell's DNA.

Raltegravir
60 x 400mg tablets: R2,396.44 (Private)

Elvitegravir
Experimental

Dolutegravir
Experimental

Entry Inhibitors (includes fusion inhibitors)

Entry inhibitors work by preventing HIV from entering healthy CD4 cells in the body. They work in a different way to many of the approved anti-HIV drugs, which are active against HIV after it has infected a CD4 cell.

Entry inhibitors work by attaching themselves to proteins on the surface of CD4 cells or proteins on the surface of HIV. In order for HIV to bind to CD4 cells, the proteins on HIV's outer coat must bind to the proteins on the surface of CD4 cells. Entry inhibitors prevent this from happening.

HIV-positive people who have become resistant to PIs, NRTIs, and NNRTIs will likely benefit from the entry inhibitors because they are a different class of drugs. This is good news for HIV-positive people who have tried and failed many of the currently approved anti-HIV medications.

Maraviroc
FDA approved. Not registered in South Africa.

Enfuviritide
FDA approved. Not registered in South Africa.

Vicriviroc
Experimental

Ibalizumab
Experimental

SEX WORK AND HIV

Diputo Lety , a sex worker from Hillbrow, tells Elsa Oliveira about her story of living with HIV and staying healthy.

Photo by Market Photo Workshop/ Working the City 2010.

I became infected with HIV as the result of a rape. In 2004, I was coughing and losing a lot of weight so I went to the Sex Worker Project in Hillbrow to be tested for sexually-transmitted infections (STIs). Since this clinic opened in 1997, sex workers have had a safe place to go for health treatment and preventive care. During this visit I discovered out that I was HIV-positive. When the nurse told me my HIV status she announced it in the clinic hallway, in front of everyone. I felt angry and embarrassed, but I did not realise at the time that I could report her insensitivity. Fortunately, my experience of health care has improved since then.

At that stage, I knew nothing about what it meant to be HIV-positive. I did not know what I needed to do to take care of myself. All I remember is feeling a lot of fear, and being reluctant to start antiretroviral (ARV) treatment. Looking back, it is clear that being humiliated in front of people at the clinic did not encourage me to learn more about my treatment options. I was not ready to go on ARVs, so instead I took vitamins and tried to eat plenty of fruits and vegetables.

In 2008, I became a peer educator at RHRU (Reproductive Health & HIV Research Unit, which runs the Sex Worker Project). As a peer educator, I taught other sex workers about prevention and STIs, and persuaded them to use the Sisonke Sex Worker Movement* for support services. During this time, I began to learn more about HIV and realised that my life was not over. I discovered that it is possible to be healthy and to live a long life. In 2009, I began ARV treatment. I was ready. Thanks to the support of Sisonke, caring nurses at the Sex Worker Project, and my work as a peer educator, my fears about the stigma of being HIV-positive were replaced by the desire to live a healthy life. Although my family does not know that I am a sex worker, or how I contracted HIV, they are very supportive. Both my parents are hospice workers who care for patients with HIV, so they understand better than most people what it means to be HIV-

positive. They really encourage me to stay healthy and to take my treatment. In fact, they call me every day to remind me to take my ARVs. This kind of support is wonderful and I feel blessed to have them in my life. It would be much harder if my family were not supportive. When I do not feel well I go back home to rest and recuperate, which makes a big difference. My spirits are high because of their love and encouragement.

As a sex worker, I make sure to protect my clients and myself by wearing condoms. After all, my body is my business! When clients do not want to wear a condom I use a female condom. Many do not know about STIs so if I see that one of them has an STI, I encourage him to go to the clinic for testing. Some clients tell me that they are afraid to go, and others say that they do not care about their health. I have sometimes gone with clients to the clinic so that they can be tested for HIV. I support them in this way because I know from experience that it is not easy to go alone.

I have been taking ARVs for two years now. While at times the side effects are hard to deal with, I take the pills anyway, because I know that they help me to stay healthy and strong. I continue to eat well and get enough rest because all of these efforts help my body and my treatment to work together effectively. I also work as a peer educator for Sisonke, teaching other sex workers about health and human rights and about why it is so important to decriminalise sex work. Many sex workers are afraid of HIV testing because of the stigma attached to their work. They are scared that health workers may discriminate against them. As a peer educator, a sex worker, and a woman with HIV I have the opportunity to challenge myths about the virus by sharing my personal experience and telling others– specifically sex workers–that they should not be afraid to test for HIV and to seek treatment.

My story is just one example, but I hope that it serves to show how sex workers are uniting to support one another. It is my wish that this story will contribute to social and political change for sex workers, and that South Africa will roll out more sensitive, non-judgmental health services.

*The Sisonke Sex Worker Movement is a Hillbrow-based organisation, founded in 2003 and led by sex workers. The movement aims to unite sex workers, improve their living and working conditions, and advocate for equal rights.

Photo by Market Photo Workshop/ Working the City 2010.

Adherence Tip

"My parents are both hospice workers for people living with HIV. They tell me that it is okay and that I must just take my medicine. When I am home, my daughter always knows when it is time for me to take my ARV treatment. When it is 8pm she yells, 'Mama! Take your medicine!' For this I am thankful because they are supportive and don't treat me differently because of my status."

Diputo Lety, sex worker from Hillbrow

DON'T STOP NOW

Why people interrupt their ARV treatment

Even though ARVs save many, many lives, some people struggle to take them as prescribed. Thandeka Vinjwa in Lusikisiki, Nondumiso Hlwele and Elizabeth Mills in Cape Town investigate why people sometimes default from treatment.

Transport

People often have to travel long distances to their nearest health facility, on poor roads with many potholes. Some walk these great distances because transport is unavailable or too expensive.

Photo by Thandeka Vinjwa.

Photo by Thandeka Vinjwa.

Long queues

Once patients reach health facilities they often face lengthy queues. This can be demoralising and make it impossible to work on days they visit the clinic. Taking a day off work to get antiretrovirals (ARVs) can also force people to reveal their HIV status to their employer.

ARV stock-outs

Sometimes drug shortages in health facilities mean that patients are simply turned away. The Treatment Action Campaign (TAC) regularly monitors stock-outs in the Lusikisiki area.

"Now I am defaulting my treatment because I didn't get my monthly supply [of pills]. When will I get them again? What about the days when I will not be taking them?"

(HIV-positive woman, Lusikisiki).

Photo by Samantha Reinders.

Side effects

Some people experience side effects on ARVs, especially stavudine (d4T). Speak to your doctor about changing your treatment regimen, as side effects can often be eliminated.

"...for me it's side effects... it has been hard for me because of the sudden change in my body shape, and sometimes I would not take my meds."

(HIV-positive woman, Cape Town).

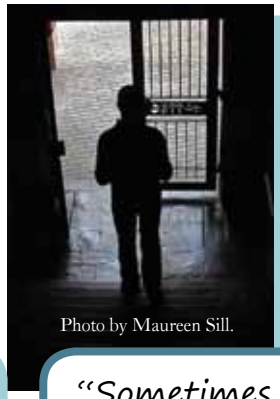


Photo by Maureen Sill.

Poverty and alcohol

If you can't afford food or transport it is very hard to maintain treatment. That is one reason why TAC supports the idea of a Basic Income Grant – a small amount of money every month – for everyone in South Africa.

"Sometimes a person does not have as much food as he or she needs to take the ARVs because they make you hungry. And also those who are using too much alcohol, they just forget."

(HIV-positive woman, Cape Town).

Myths and misinformation

In some areas people believe that traditional healers can cure HIV. They stop taking ARVs and use traditional medicines instead, which do not suppress HIV. Others still believe misleading stories that ARVs make you die early, or that it is possible to cure HIV through religion.

Disclosure and stigma

Fear of stigma often causes people with low self-esteem to feel ashamed about using ARVs. Joining adherence or support groups helps deal with these difficulties.

"If you have not disclosed to [the people who] are closest to you it will be difficult for you to take the medication. You have to explain why you are taking them and you end up not taking them."

(HIV-positive woman, Cape Town).

Remembering to take ARVs

Reminders, like setting your phone alarm or using the start of a TV programme to jog your memory, can help you remember to take your ARVs. If you disclose to the people you live with, they can also remind you.

"Being a busy person who sometimes attend meetings, you know my challenge is that I would have them inside my bag and just forget to take them, because I did not set a reminder on my phone...."

(HIV-positive man, Cape Town).

'Taking a rest'

When people on antiretroviral treatment start feeling better they sometimes stop taking medication. This allows the virus to multiply freely. When those people get sick again the same ARVs may no longer work due to drug resistance. With both HIV and TB it is extremely important to take your treatment – even if you feel perfectly healthy.

"Some people decide to take a rest [from ARVs] and when they get ill they decide to go back again. [But then] the medication does not work for them because of resistance."

(HIV-positive woman, Cape Town).

Photo by Adam Malapa.

Tracing defaulters

By Adam Malapa

Francinah Chauke is one of 20 Prevention Treatment Literacy Practitioners (PTLPs) working for TAC in Mopani District, Limpopo. A PTLP is a community-based educator at a health facility who teaches patients about treatment and prevention.

One of the roles of PTLPs is to trace treatment defaulters – people who have recently failed to collect their medication. Chauke needs to understand why a person has defaulted, and convince him or her to start treatment again. Unfortunately, for some this process occurs too late as HIV or TB may have done too much damage in the time that they have been off treatment.

"The main [reason for defaulting] is a social grant", says Chauke. "Most people […] told me that they felt their grant was going to be terminated if their health improved, so they [would] rather stay unfit to maintain the social grant."

Oscar Mabela is a TAC PTLP at Dr C N Phatudi Hospital, Limpopo. "The major problem in my area is transport," he says. "[…] People […] have to use public transport to get to the facility while they don't even have food to eat at their homes." This problem links with the difficulty that Francinah noticed: when people have no food and no money for transport, many would rather stay at home until they are unwell and then apply for a social grant.

"People working on farms mostly do not have the time free to […] collect their treatment," says Masingita Mavodze from Rotterdam. "They would rather not even ask permission from their bosses […] because they need to protect their jobs". Some people who migrate from one place to another for work do not even consider getting transfer letters that would allow them to obtain treatment close to their next job.

In light of these findings, TAC Mopani assigned Chauke to work on local farms, educating people about the importance of taking treatment correctly and on time.

Facility

Your local clinic might not reorder medicines in time and could run out of stock. The clinic might not manage its staff and resources well, or it might be understaffed.

Solution: Locate other health facilities near you, as a backup. Even if these clinics are further away, they might be able to help you in an emergency.

Home

Treatment can be confusing and difficult, especially if there is no support. Sometimes side effects can be really unpleasant, and you would rather avoid them.

Solution: Find a treatment buddy or club. You and your treatment supporters can remind each other to take your medication, and discuss the highs and lows of treatment. Let your health worker know if you have serious side effects so that your regimen can be changed.

Community

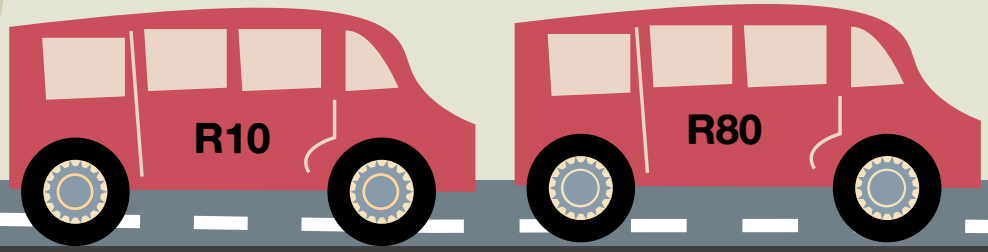
Discrimination exists because there is a lack of education and understanding about HIV treatment.

Solution: Ask about sensitivity training for your colleagues and counselling resources at your work. Disclosing to family and friends will also help you build a support network. Try joining a support group or adherence club.

Intellectual property

Intellectual property (IP) rights often put company profits over patients' right to health. Patents, a form of IP which can last for decades, allow drug companies to charge high prices that some governments cannot afford. This means that even if an innovative, life-saving drug is introduced, it may be years before the people who need it most have access to it. Generic companies may be unable to produce the drugs until the original patent expires.

Solution: Learn about intellectual property law. The Treatment Action Campaign's (TAC's) work on intellectual property law has played an important part in reducing antiretroviral (ARV) prices in South Africa. TAC and the South African government must keep up the pressure for access to new life-saving ARVs. (Learn more about this in the next article.)



The Road to good adherence

Personal

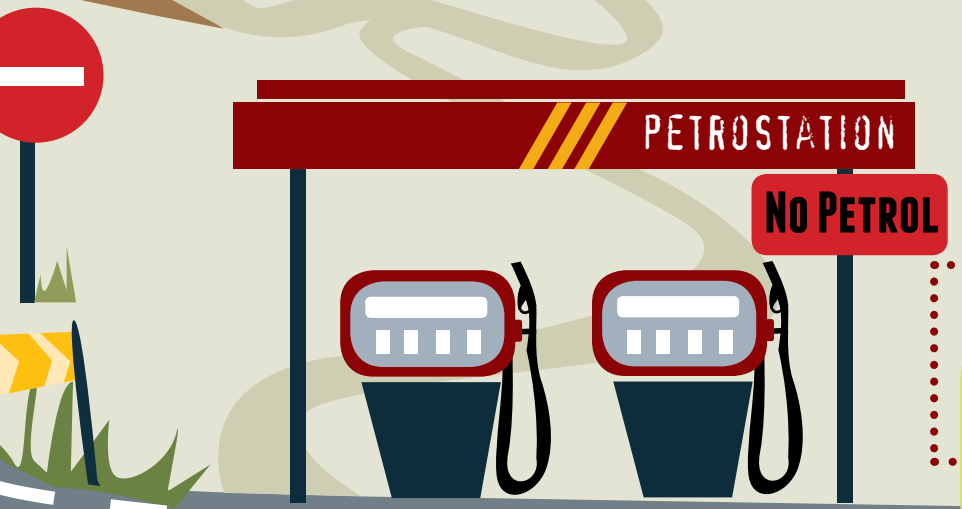
You might forget to take your medication because you are too busy or you have had a few drinks.

Solution: Set a personal alarm clock on your phone and make treatment part of your daily routine. Carry your medication with you, so that you can maintain treatment even when you are not home. Moderate your alcohol consumption. For more pointers on remembering to take your antiretrovirals, see the adherence tips spread throughout this magazine.

Logistics

Having to travel long distances, on poor roads, or pay expensive taxi fares might stop you from getting to a clinic.

Solution: Find out if taxi vouchers are available to get from your house to the clinic or community support group. Check if your clinic has shuttle buses or if they send medical workers out into the community. Call on government to support a decentralised model of care in which clinics are built and supported at the local level.



Supply

Poor financial management, inadequate planning, and health budget limits mean that provincial drug depots could face stock-outs.

Solution: Monitor drug supplies and stock-outs in our communities. When stock-outs and shortages do occur, report them immediately to community-based organisations, health workers, and local, provincial and national government.

Policy

Despite much progress, our government has not invested sufficient money in antiretrovirals or done enough to ensure that future ARVs will be affordable. South Africa still has not incorporated TRIPS (the Agreement on Trade Related Aspects of Intellectual Property Rights) flexibilities into national legislation or used a compulsory license. A compulsory license means that government can force the holder of a drug patent to allow generic manufacture of the drug.

Demand a more transparent tender process, and lobby government to use its strong buying power to purchase ARVs at better prices. Oppose restrictive new trade agreements, such as the EU-India Fair Trade Agreement (see page 23).

ADHERENCE

In our homes, at work and in our communities we can help break down the barriers that get in the way of taking treatment as prescribed.

PATENT WARS

By Catherine Tomlinson

As more and more people develop HIV drug resistance in the coming years, we will need new treatments to help keep those people alive and healthy. Yet new trade agreements are threatening to destroy the mechanisms that make ARVs affordable. If we don't stop these trade agreements now, many lives may be lost needlessly.

Why are generic drugs cheaper than patented drugs?

A patent (a form of intellectual property) is an exclusive right given to an inventor for a set period of time that allows the inventor to decide how their invention is used. During this time the inventor can generally charge whatever he or she likes for the product. This is why medicines under patent are more expensive than generic medicines.

Generic medicines have the same active pharmaceutical ingredients, making them the same, or bioequivalent (having the same ingredients and effects), to patented medicines. The only difference is that generic medicines are not manufactured and sold by the patent holder, but by another company. This company has either been licensed to sell the medicine by the patent holder or is in a country where the patent is not upheld.

Generic options lower the price of medicines because they introduce competition to the market, which drives down prices. The more companies there are selling a drug, the more the price of that drug falls. If only one person in your community is allowed to sell milk, that person can charge a very high price because he or she knows that you can't buy milk elsewhere. However, if ten different people sell milk in your community, the price of milk will be much lower.

* Intellectual property (IP) can be defined as human ideas that have commercial value and may be protected by law.

Before 2005 middle-income countries like South Africa were able to produce generic versions of medicines that were under patent in wealthy countries. This is because the international laws affecting the trade in medicines did not yet require middle income countries to uphold these patents.

These generic medicines drove down the prices of antiretrovirals, making them affordable for public health facilities across Africa.

However in 2005, middle-income countries were required to introduce laws that would provide the same patent protection as in wealthy countries. As a result, today it is more difficult for countries like India, South Africa and Brazil to produce newer medicines.

The consequent lack of generic versions of newer medicines is the reason why third-line treatment remains unaffordable and unavailable in our public health system. In the coming years this is likely to cause many avoidable deaths and to increase costs for our government and others.

Despite the huge challenges poorer countries face in accessing affordable versions of newer medicines, wealthy countries are now pushing for new laws to further protect intellectual property beyond the limits of TRIPS (Trade-Related Aspects of Intellectual Property Rights) regula. These so-called TRIPS-plus measures threaten the ongoing supply of the medicines on which we already rely. They also stifle innovation in life-saving medicines such as TB drugs, paediatric ARV formulations, and ARV fixed-dose combinations.

Photo by Samantha Reinders.

The EU-India Free Trade Agreement (FTA)

The European Union (EU) is currently negotiating a trade agreement with India that could damage India's ability to manufacture and export generic medicines. This is because the EU is pushing India to make its patent laws even stricter than those currently required by international laws such as TRIPS.

India is the main supplier of generic medicines and active pharmaceutical ingredients to Africa. Therefore if adopted this agreement would harm access to medicines in Africa and across the developing world. It would also pave the way for other, strict international trade laws that block access to drugs and harm public health.

Through this agreement, the EU is pushing for:

Border measures

These would allow the EU to seize shipments of drugs that cross EU borders if those drugs are under patent in an EU country. Even if the final destination is a country like South Africa in which there is no patent on those drugs, the EU will be able to confiscate the shipment.This requirement would cause stock-outs in our

The international law governing the trade in medicines and other products is known as the Trade Related Aspect of Intellectual Property Rights, or TRIPS.

Illustration by Sizwe Nguqe.

Wealthy countries are seeking to expand their profits at the expense of our lives!

Say no to expanded patent protection in trade agreements!

Photo by Luckyboy Mkhonwane.

clinics and interrupt the supply of drugs to the developing world.

Investment chapter

The European Council of Ministers has yet to vote on whether or not the EU-India negotiations could call for intellectual property (IP) to be included in an investment chapter of the FTA. If included, this would allow companies to go to great lengths to protect the investments made in their IP, including the production of medicines. While currently only countries can take legal action against other countries, the investment chapter could allow companies to sue countries directly. In order to do so, they would only have to go through a court of arbitration rather than a court within the country's government. For example, if a European company felt that Indian law was hurting their IP, for example by allowing for generic companies to make a patented medicine as allowed under international trade law, that company could sue the Indian government in an international court, blocking the government's action. Such provisions could prevent governments from protecting public health if their actions were seen as infringing on IP.

* The EU is also negotiating an Economic Partner Agreement with SACU (the South African Customs Union, which includes South Africa, Botswana, Namibia, Lesotho and Swaziland) as well as Mozambique and Angola. However the details of this agreement are not transparent. Because of the EU's strong negotiating position and the use of strict language surrounding intellectual property protection in the EU-India proposal, there are real fears that the EU will bully South Africa into accepting stricter patent protection.

The Anti-Counterfeiting Trade Agreement (ACTA)

The Anti-Counterfeiting Trade Agreement (ACTA) is a proposed multi-country agreement that countries can sign onto 'voluntarily'. While the agreement is voluntary there will be considerable pressure from wealthy countries for others to sign the agreement. It may be required by trade agreements.

A counterfeit medicine is a fake or false medicine that does not contain the same active pharmaceutical ingredients as a patented or generic medicine. Counterfeit medicines can be harmful and dangerous. It is and should be illegal to sell or purchase them.

ACTA claims to be a mechanism that will stop the sale of counterfeit medicines. However

ADHERENCE

Adherence Tip

"You must have a treatment buddy who will remind you to take your treatment. This doesn't mean that you and your treatment supporter have to be living in the same place because nowadays almost everybody has a mobile phone, so the treatment supporter can send you a text message or call you a few minutes before you are supposed to take your treatment and remind you."

– Maria Khambule, Treatment Action Campaign, Ekurhuleni

it is also an attack on the generic medicines on which we rely. The agreement promote the interests of pharmaceutical companies by interrupting the supply of legitimate generic medicines.

This is because in some cases ACTA expands the definition of counterfeit to include generic medicines.

Under ACTA rules, border authorities and governments will be allowed to seize and destroy shipments of medicines that they believe are in violation of a patent. They will be able to do this without even contacting the patent holder to verify whether the drugs are genuine. This could be done without a judicial process and the potential for abuse and corruption is enormous.

Allowing border authorities to seize and destroy medicines will interrupt the supply of legitimate drugs to our clinics, causing stock-outs and forcing patients to interrupt their antiretroviral or other treatment.

* ACTA is not the only anti-counterfeiting legislation currently under development. A number of similar legislations are under development or have been adopted around Africa including Kenya, Uganda, Burundi, Tan zania and Rwanda.

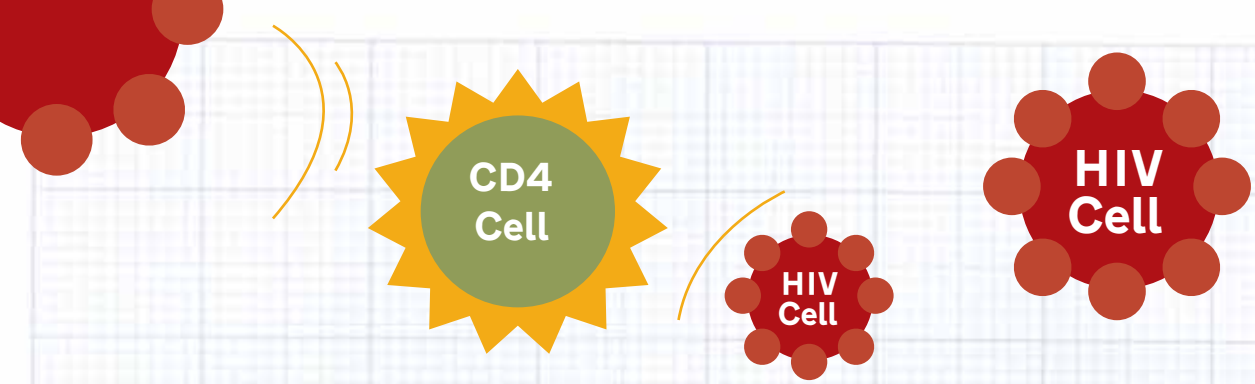
Adherence Tip

Photo by Edwin Cameron.

"I take my three pills (two nevirapine and one Truvada) first thing every morning. So when I get up I put on the kettle for hot water and get out my pill container. It has seven slots, one for each day of the week. I refill it every Saturday. So I can always see if I've skipped a day – which almost never happens, only when I fail to take my pills right away when I get up. So I have trained myself hard to make it the first thing [in] my life and thought every morning, which is right – for without my pills I would have no life.

"I am also an avid cyclist and have completed a couple of endurance cycling races such as the Argus and the 94.7. My goal is to finish the Argus race in 2011 in under four hours. This means that I have to train often, eat healthily and take my ARVs regularly. I have various photos of my cycling taken by my family and friends at my house and on my computer. These remind me of my goals and how my medication keeps me healthy."

Justice Edwin Cameron



NEW RESEARCH

CD4 cells made resistant to HIV

One of the most exciting studies reported at the recent Conference for Retroviruses and Opportunistic Infections (CROI) in Boston involved a ground-breaking new way to fight off HIV.

Six HIV-positive people took part in this trial of a treatment currently being called SB-728. This treatment involves drawing blood, which is then treated in the laboratory with the aim of changing the CD4 cells so that they cannot become infected with HIV. This is done using a form of gene therapy which disrupts the CCR5 gene in the CD4 cells. (Gene therapy involves changing, adding or removing genes from cells in the human body in order to fight illness.) HIV struggles to bind with CD4 cells where the CCR5 gene is disrupted. The treated CD4 cells are then multiplied in the laboratory and implanted back into the patient.

Following this treatment five of the six participants in the trial had CD4-count increases averaging 200. The other participant did not benefit from the treatment. No serious side effects were reported in any of the participants.

In this trial the treatment only enabled a small percentage of CD4 cells to become immune to HIV, but it is encouraging that this small percentage seemed to stay immune for as long as a year. Of course, having a few CD4 cells that are resistant to HIV does not make a person immune to HIV.

Many questions remain about SB-728. We do not yet know if disrupting the CCR5 gene might have negative health consequences in the longer term. Neither do we know if it is possible to treat a significantly higher percentage of cells in this way. There is a long road to travel before we will know if this treatment will ever be more than just an intriguing idea. *Equal Treatment* will be sure to bring you news of the latest trials in this field.

Source: Lalezari J et al. 'Successful and persistent engraftment of ZFN-M-R5-D autologous CD4 T Cells (SB-728-T) in aviremic HIV-infected subjects on HAART.' 18th Conference on Retroviruses and Opportunistic Infections (CROI), Boston, abstract 46, (2011).

A new entry inhibitor

Entry inhibitors are a relatively new class of drugs that prevent HIV from entering CD4 cells. We need more drugs in this new class because they can offer a lifeline to people who are resistant to drugs in other classes. Two entry inhibitors (called maraviroc and enfuvirtide) have already been registered in the United States.

Now researchers have reported that a new entry inhibitor called BMS-663068 has crossed the first of many hurdles on the road to gaining regulatory approval. In a very small trial that lasted only eight days the drug was associated with significant reductions in viral load without any side effects. Further trials on this drug are scheduled to start later this year.

Source: Nettles R et al. 'Pharmacodynamics, Safety, and Pharmacokinetics of BMS-663068: A Potentially First-in-class Oral HIV Attachment Inhibitor.' 18th CROI, Boston, oral abstract 49 (2011).

More potent tenofovir

A new form of tenofovir called GS-7340 has been developed that may be as much as 15 times more efficient at delivering the active compound to lymph nodes and target cells than the tenofovir currently in use. It does not however deliver that much more tenofovir to the kidneys, which is where most of the more serious side effects of tenofovir occur. The hope is that this will allow patients to take far less of the drug and thereby avoid side effects. Only one early study in humans has been done with this drug and it will be a few years before we know if it is safe and effective enough to replace the current form of tenofovir.

Source: Markowitz M et al. 'GS-7340 Demonstrates Greater Declines in HIV-1 RNA than TDF during 14 Days of Monotherapy in HIV-1-infected Subjects.' 18th CROI, Boston, oral abstract 152LB (2011).

Can we afford ARVs for uninfected people?

Two of the most important studies of the last year were the iPrEx and Caprisa 004 trials. The first showed that giving men who have sex with men a daily dose of tenofovir and emtricitabine reduced their risk of contracting HIV. The second showed that a vaginal gel (or microbicide) containing tenofovir reduced women's risk of infection. Both these approaches are forms of pre-exposure prophylaxis, or PrEP, since they involve giving people a pill to prevent infection rather than to treat infection.

It is unlikely that PrEP will become a reality in the public health system within the next year or two. We are still waiting for results from further trials on the safety, efficacy and optimal dosing of PrEP treatments.

However, researchers have now reported on mathematical modelling which found that rolling out PrEP in South Africa is likely to be cost-effective – especially if the price of microbicides or pills can be reduced and if the efficacy of these products can be improved. Much more research and thinking will have to be done around PrEP in the coming years, but at least we now have a strong sign that rolling out PrEP will make financial sense.

Sources: Walensky R et al. 'Cost Effectiveness of PrEP for HIV Infection in South Africa.' 18th CROI, Boston, abstract 37LB, (2011); Hallett T et al. 'ART or PrEP for HIV Prevention in HIV Serodiscordant Partnerships: A Mathematical Modeling Comparison.' 18th CROI, Boston, abstract 99LB (2011).

Viral load screening not essential

How to monitor the health of HIV-positive people is a long-standing question. As the DART trial showed us, it is not necessary to wait until you can provide CD4 and viral load monitoring before making ARVs available. Patients can do pretty well with just clinical monitoring, in other words, when the doctor examines them regularly without getting any CD4 counts or viral load tests done. Two new studies offer some interesting perspectives.

A study conducted in Thailand randomly assigned 716 adults to receive CD4 monitoring plus viral load monitoring, or just CD4 monitoring. After three years the researchers found that there was no significant difference in the CD4 counts and viral load counts of the people in the two groups. This indicates that the absence of viral load monitoring should not be a barrier to starting people on treatment.

A second study from Cameroon randomly assigned 459 people to receive either CD4 count monitoring plus viral load monitoring or neither of them and only clinical monitoring. After two years, participants receiving only clinical monitoring tended to have slightly lower CD4 counts. This study underlines the view that the absence of viral load tests and CD4 monitoring should not prevent the roll-out of treatment. It does however suggest that these tests should be made available where possible. The value of viral load monitoring was underlined by a new analysis from the DART trial, which found an association between viral load increases and the development of certain drug-resistant mutations, or changes, in HIV. This suggests that viral load monitoring could be useful in determining the ideal time to switch treatment regimens.

Sources: 'Jourdain G et al. PHPT-3: a randomized clinical trial comparing CD4 vs viral load ART monitoring/switching strategies in Thailand.' 18th CROI, Boston, abstract 44, 2011; 'Kouanfack C et al. HIV viral load, CD4 cell count, and clinical monitoring vs clinical monitoring alone for ART in rural hospitals in Cameroon: Stratall ANRS 12110 / ESTHER trial, a randomized non-inferiority trial.' 18th CROI, Boston, abstract 45LB, (2011).

All these findings were presented at the 18th Conference on Retroviruses and Opportunistic Infections, held in Boston, U.S.A., earlier this year.

Photo by Luckyboy Mkhonwane.

Stealing ARVS is senseless

On Friday 25 March Treatment Action Campaign (TAC) members picketed outside the Kempton Park Magistrate's Court where three men were appearing on charges of having allegedly stolen R200,000 worth of antiretroviral (ARV) drugs. Police are reported to believe that the men intended to use the ARVs for the production of whoonga, a toxic street drug.

Two of the men were found in possession of two plastic bags each containing about 20 batches of the ARV medicine tenofovir, the Citizen newspaper reported. These two men then pointed out a third man as being involved. The original arrests were the result of a tip-off from a member of the public. The men appeared in court in January for the first time. After the 25 March hearing the case was postponed until 19 April.

"The perpetrators of such crimes are taking away the lives of the people who need these drugs in order to maintain their health," says Luckyboy Mkhondwane of TAC Ekurhuleni. "By so doing, they don't just take away the extra years that can be added when a person who is living with HIV is taking their treatment. But they also put the lives of innocent people in danger by exposing them to drug resistance, as defaulting on your ARVs increases the chances of the virus mutating."

The truth about whoonga

Whoonga is a dangerous street drug that is sold in some communities in South Africa. It can contain a variety of ingredients including heroin and rat poison. Some media reports have claimed that whoonga contains ARVs, but when samples of whoonga were tested at the University of Kwazulu-Natal they were found not to contain ARVs.

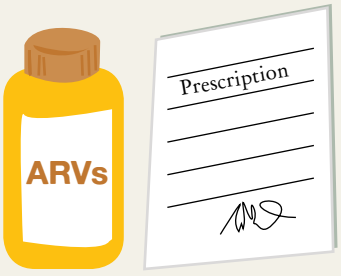
Even if whoonga does sometimes contain ARVs, the ARVs will not give users of the drug a high. An ARV like efavirenz does sometimes have psychological side effects when taken normally, but not when smoked. It therefore makes no sense to add ARVs to whoonga.

It is important to debunk the myth that whoonga contains ARVs or that ARVs make whoonga better. Misinformation like this is spread by drug dealers and can lead to the theft or abuse of life-saving medicines.

MAZE

Equal Treatment 38

Fill your prescription by completing the maze to a stocked pharmacy. Draw a line to trace your path.



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