medscheme
Integrated Care Division

Aid for AIDS

SERVICE PROVIDER NEWSLETTER
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HIV VIRAL LOADS FOR DUMMIES

Measuring HIV viral genetic material (RNA or DNA) directly is one way of determining the quantity of virus in the body fluid measured. This measurement can be achieved in various ways, and is known as the " VIRAL LOAD".
The most common mode of assay is the polymerase chain reaction (PCR). This amplifies viral RNA, allowing calculation of approximate levels of viral RNA in the sample. Other methods of testing viral load are Branch Chain DNA, and Nucleic Acid Base Sequencing.

When to do Viral Loads:

1. Once prior to commencing ARV therapy
2. On ARV therapy every 6 months
3. Repeat if elevated Viral load > 1 log from previous level

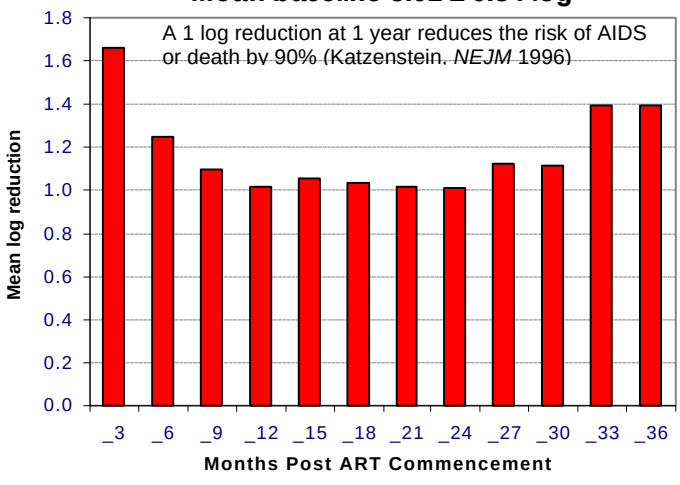
How to do Viral Loads:

1. Send 1 EDTA tube (full) purple top – same day to laboratory
2. Always use the same laboratory for follow up tests.
3. Send sequential samples as close to the same time of day as possible
4. Do not do viral load assays while the patient:
   a. is acutely ill
   b. has recently had a vaccination

   as these greatly increase the viral load (wait two weeks).

Virological response

Mean baseline 5.01 ± 0.84 log



Viral load measures are calculated and reported in copies/ml, as well as in $\log_{10}$ values. Because of the logarithmic nature of viral replication, it is important to interpret absolute values with caution, using changes in logarithmic figures to assess response to therapy. When using PCR, the mean error of the test is $\log_{10}$ 0.6. Any viral load measurement less than $\log_{10}$ 0.6 higher or lower than the last is not a significant change.

NB: Changes to antiretroviral therapy should not be made on the basis of a single viral load result. Where possible, the result should be confirmed by a second test a week later.

Drug interaction OF THE MONTH

Beware of using anticonvulsants such as carbamazepine and phenytoin with NNRTI and PI agents. The anticonvulsants induce enzymes responsible for metabolism of the PI and NNRTI agents. This can lead to a loss of virological control.

Alternative agents for:

- Epilepsy - sodium valproate
- peripheral neuropathy - amitriptyline

SOME INTERESTING OUTCOMES:

- Currently there are more than 15 000 people registered on the programme, two thirds of whom are on antiretroviral therapy.
- Viral load outcome data confirm the effectiveness of triple therapy with an increase in the viral load reduction.
- There are more than 200 patients registered on our internet programme!
- The Aid for AIDS Programme has been launched in Swaziland and will soon be available to employees of BP in Malawi and Zambia.

PERIPHERAL NEUROPATHY

Peripheral neuropathy is common in HIV infection. It may present at any stage of the illness, but becomes more common in late disease occurring in about a third of AIDS patients. It presents as a symmetrical mixed sensorimotor neuropathy in a typical "glove and stocking" distribution. It is slowly progressive. Symptoms and signs are similar to those of diabetic neuropathy with paraesthesiae, depressed ankle jerks and vibration sense in early disease progressing to loss of sensation. Mild peripheral weakness may occur. It is important to exclude toxic neuropathy due to drugs. The drugs which most often cause peripheral neuropathy in HIV medicine are isoniazid and the antiretrovirals stavudine (Zerit®), zalcitabine (Hivid®) and didanosine (Videx®).

Neuropathy complicating these drugs is more common in advanced disease, reaching frequencies of 20-30% for the most neurotoxic drugs (Zerit® and Hivid®). Hydroxyurea potentiates the neurotoxic effects of Zerit® and Videx®. The management of peripheral neuropathy should commence with a course of B complex vitamins (or pyridoxine alone with isoniazid). The most effective drug for paraesthesiae is amitriptyline in low doses of 10-100 mg at night. Carbamazepine should be avoided as it has many drug interactions with antiretroviral therapy.

Regular simple analgesia is also helpful. Neuropathy induced or exacerbated by drugs generally reverses if the drug is stopped, but this is often not necessary and undesirable as there are limited antiretroviral therapy options available. Mild cases of neuropathy due to these drugs can be treated as for HIV neuropathy and the drug continued. In most patients the neuropathy does not progress.

DEALING WITH COTRIMOXAZOLE INTOLERANCE

This is common, particularly in late disease. It is sometimes possible to add an antihistamine if the only problem is a mild rash. If there are systemic symptoms or mucosal ulceration the drug should be discontinued and not be reintroduced. In the absence of these symptoms desensitisation appears to be safe and should be considered, particularly if the CD4 count is less than 200, in order to reduce the incidence of PCP and toxoplasmosis.

Both rechallenge and desensitisation should be done under antihistamine cover starting the previous day, with careful observation. A simple desensitisation regimen is as follows, using cotrimoxazole syrup (240 mg/5 ml):

Day 1	Day 2	Day 3	Day 4	Day 5	Day 6
1.25 ml daily	1.25 ml bid	1.25 ml tid	2.5 ml bid	2.5 ml tid	1 tablet (480 mg) daily

Information extracted from:

Leoung GS, Stanford JF, Giordano MF, et al. Trimethoprim-Sulfamethoxazole (TMP-SMZ) dose escalation versus direct rechallenge for Pneumocystis carinii pneumonia prophylaxis in Human Immunodeficiency Virus infected patients with previous adverse reaction to TMP-SMZ. J Infect Dis 2001;184:992-997.

PLEASE REMEMBER:

1. Any member of a contracted medical scheme who is HIV-positive should be registered on the programme as soon as possible, even if they do not meet the criteria for antiretroviral therapy. This is important to assist with regular monitoring and to enable the speedy approval of ART when needed. The patients will also have access to our nurse line for advice and help.

2. Please ensure that the results of follow-up CD4 counts, viral loads and other investigations are sent through to AfA timeously. This is important to enable us to assist you in monitoring your patients.

3. Resistance testing (Genotyping) must be pre-approved.

4. Look out for the 4th Edition of our Clinical Guidelines. Any suggestions for inclusion in the guidelines are welcome!

The success of our programme depends on collaboration with you, the provider. If you have any suggestions or comments, please do not hesitate to contact us.

Practice point OF THE MONTH

Efavirenz (Stocrin®) is teratogenic in primates. Two cases have recently been reported of neural tube defects after women conceived whilst taking Stocrin®. It is essential that adequate contraception (barrier methods plus either oral contraception or injectables) be taken by women given Stocrin®. Termination of pregnancy should be offered if pregnancy occurs on Stocrin®. If the woman elects not to terminate then Stocrin® must be stopped and level 3 ultrasound done at around 18 weeks.

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