

AIDS TREATMENT UPDATE

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Testing times

UK conference hears new findings on interpretation of early viral load test results

BY ANNA POPPA

Identifying the failure of anti-HIV treatment as soon as possible is critical in preventing resistance and preserving future options, but how early can failure be identified? Limited data are available which suggest that the speed at which viral load declines after a new regimen is started predicts future success – the faster the fall, the more likely it is that treatment will have a durable effect on viral load. It is argued that early and frequent viral load monitoring when starting treatment should therefore identify people who will do less well on treatment, and so will be candidates for an early switch to a new regimen. However, there is no consensus on this issue, and recent new data highlight a need to be cautious in interpreting the results of early viral load tests.

EXPERT OPINION I: BHIVA GUIDELINES

The British HIV Association (BHIVA) do not make any explicit recommendation about when to monitor viral load in the UK treatment guidelines (see www.aidsmap.com/bhiva). Their recommendation is to change a first-line therapy if viral load is above 50 copies at 24 weeks, or earlier than this if viral load was initially below 50 copies and a rebound is confirmed, or if virological response prior to 24 weeks is “inadequate”, a term which is not defined. BHIVA recommend that virological response be checked at four to eight weeks, but advice on the exact frequency of monitoring is a little unclear.

EXPERT OPINION II: IAS GUIDELINES

The International AIDS Society (IAS) updated their treatment guidelines in January this year (see the

Journal of the American Medical Association, January 19th, 2000). They advise that viral load “should decrease rapidly after therapy is initiated; a minimum 1.5 to 2.0 log decline should occur by four weeks. Precise data are not available regarding optimal frequency, but in general, [viral load] should be monitored within one month of therapy initiation or change, monthly until the goal of therapy is reached, and every two to three months thereafter”.

Experts agree that people who begin HAART with high viral load, e.g. above 100,000 copies, may take longer to suppress viral load below detectable limits. In addition the IAS suggest it is “reasonable” to continue with therapy if the trend at sixteen weeks is downwards, even if viral load is detectable.

EXPERT OPINION III: US GUIDELINES

US treatment guidelines prepared by the Department of Health and Human Services are currently out for consultation. They suggest that a reduction in viral load of less than 0.5 to 0.75 log at four weeks, or less than 1.0 log at eight weeks should prompt consideration of a change in therapy, as should a failure to reduce viral load below 50 copies at four to

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six months. Patients with baseline viral load of 100,000 copies and above may be slower to respond and might choose to continue on therapy which has stabilised viral load below 10,000 copies after six months.

For patients on therapy, the US guidelines advise that viral load testing be performed at two to eight weeks after beginning treatment for the purpose of making an initial assessment of drug efficacy and a decision on whether to continue.

RISK OF REBOUND IS UNPREDICTABLE

At a recent AIDS conference in San Francisco, US researchers presented information on the relationship between early viral load test results and subsequent treatment response after 24 weeks of therapy (see Mellors J, 7th Conference on Retroviruses and Opportunistic Infections, San Francisco abstract 451, 2000). The study team analysed viral load test results using a test with a cut-off of 200 copies, whereas current standard of care is to reduce viral load below 50 copies. This historical anomaly makes these data slightly difficult to interpret.

Participants came from three clinical trials: ACTG 343, ACTG 368 and ACTG 359, and had varying degrees of exposure to anti-HIV drugs. Study 343 was open both to people who were new to antiretroviral therapy and to people with a little drug experience. Participants in ACTG 368 had previously taken dual nucleoside analogues, whilst ACTG 359 included people with experience of a protease inhibitor.

A typical virological response to effective anti-HIV therapy involves two phases; one where viral load drops rapidly, and a second where the decline continues, but at a slower rate. In ACTG 343, which involved the greatest number of treatment naïve participants, just 3% of 455 patients experienced a viral load rebound within the first four weeks of treatment – a response the researchers called “off-track”. This term was also used to describe those people whose viral load fell unusually slowly.

In ACTG 368 a similar pattern emerged. Just under 7% of the 305 participants were “off-track” at four weeks. In fact most of those who rebounded had displayed a typical fall in viral load in the first four weeks of treatment before viral load sharply rose. In this study, information was available on adherence to medication as reported by patients themselves (which may be a less than perfect measure). Though nonadherence seems a possible explanation for this pattern of sudden virological failure, there was no difference in early viral load response between adherent and nonadherent patients,

Early viral load tests can be important in supporting people who are adjusting to taking a new drug combination.

prompting lead author John Mellors to comment, “Something other than medication adherence is going on here”.

In ACTG 359, viral load responses were worst, reflecting the greater relative drug experience amongst participants. Here 40% of the 277 study volunteers were “off-track” by week four of treatment. The average time taken to suppress viral load below 200 copies (in those who reached this target) was around five weeks.

Overall, looking at data from all three trials, the average time taken to fall below 200 copies was four weeks. Those who began treatment with a high viral load of 100,000 copies or more took longer to reach this target however, nine weeks on average.

Considering both drug naïve and drug experienced patients together, around 10% to 20% had an unusually slow decline in viral load over the first four weeks of treatment. However, in most cases where viral load rebound occurred, it could not be predicted from the rate of decline in this early period. After the initial four week period, predicting who would rebound remained difficult. Moreover, individual’s self-reported adherence did not explain treatment failure in all cases.

MORE ON RESPONSE IN NAÏVE PATIENTS

Researchers from London and Frankfurt presented an analysis of early viral load response in naïve patients at a recent meeting of the British HIV Association (see Cozzi-Lepri A, 6th Annual BHIVA Meeting, Edinburgh, abstract O19, 2000). Their study involved 335 people starting HAART at the Frankfurt UNI Clinic, and was designed to assess the relationship between viral load test results at four and eight weeks after HAART was started, and the likelihood of having viral

load below 500 copies at week sixteen. All viral load tests in this study used this cut-off.

In contrast to the IAS guidelines, a failure to sustain a two log (99%) drop in viral load at week four of therapy did not necessarily predict subsequent response at week sixteen. 80% of participants who did not achieve this target nevertheless obtained viral load below 500 copies at week sixteen.

40% of the cohort had viral load below 500 copies at the four week point, and 70% by week eight. Of those who had detectable viral load at week four, 80% went on to reduce viral load to below 500 copies at week sixteen. Again, however, individual variation in viral load remained important. Amongst those people whose week four viral load was above 10,000 copies, the likelihood of an undetectable viral load at week sixteen was 50%.

A similar pattern emerged regarding the predictive capacity of viral load results at eight weeks. Those whose viral load at this time point was detectable had a 63% chance of being undetectable by sixteen weeks. However the likelihood was lower (38%) if viral load was above 10,000 copies at eight weeks, and lower still (30%) if in addition to this, the pre-therapy viral load had been higher than 1,000,000 copies.

PREDICTING TIME TO BELOW 50 COPIES

A European group of researchers has recently published the findings of a study designed to measure the length of time taken for viral load to fall below 50 copies in people taking anti-HIV treatment for the first time (see Rizzardì G in *Journal of Clinical Investigation* 105(6):777-782, 2000). 118 patients involved in five separate clinical trials had viral load measured at two weeks and four weeks after treatment initiation, then every four weeks until the 24th week of treatment, and then every twelve weeks thereafter.

The average viral load in the group at the time of beginning treatment was around 60,000 copies. The researchers analysed a number of different virological and immunological measures, including baseline viral load in both the blood and lymph nodes, and the CD4 count, to find which of these best predicted the time of response to therapy. The strongest predictor of the time taken for viral load to fall below 50 copies was viral load in the blood at the time of beginning treatment. Not surprisingly, those with higher viral loads took longer to reach the target than those whose baseline viral load was lower.

Though the average time taken for viral load to fall below 50 copies was 73 days (just over ten weeks), the range of values was between two and 24 weeks. As noted above, current treatment guidelines in both the UK and US suggest that a first-line regimen should be changed if the below 50 copy target has not been reached by 24 weeks. Individual patients, together with their health care providers, may however choose to set an earlier, or later, deadline for reaching this cut-off depending on their viral load at the time of beginning treatment. By plotting viral load responses in the 118 study participants, this European group produced an estimate of the average time of response to therapy according to different baseline viral loads. These are shown in the accompanying table.

INTERPRETING THESE DATA

In an accompanying editorial, US experts Oren Cohen and Anthony Fauci suggest these data could be used as a benchmark for patients and doctors in considering response to a first-line combination. However, there are a number of caveats to bear in mind. Firstly, these data are derived from just 118 people, which is not a very large number on which to base recommendations. In particular, only

Estimated speed of viral load response in people new to anti-HIV treatment

Viral load at time of starting treatment	Estimated number of days to reach below 50 copies
1,000 copies	15 days, give or take 20 days
3,200 copies	31 days, give or take 15 days
10,000 copies	48 days, give or take 10 days
32,000 copies	64 days, give or take 7 days
100,000 copies	81 days, give or take 6 days
317,000 copies	97 days, give or take 10 days

Source: Rizzardì G in *Journal of Clinical Investigation* 105(6):777-782, 2000.

Monitoring treatment

two participants began treatment with a viral load over 1,000,000 copies, and at the higher viral load levels there was a greater variation in response times anyway. As the table shows, there was wide variation in results at all viral load levels, which is perhaps due to the small number of patients who were studied.

Secondly, although the participants were described as having adhered well to HAART, which is known to affect treatment response, the authors did not provide any information on how adherence was measured. Further, the five clinical trials from which patient data were gathered were designed to assess the effects of eight different drug regimens, including two, three and four drug combinations. Whilst it seems possible that differences in potency may have affected treatment response, the authors found that the majority of patients (73%) had a virological response which fell within standard parameters of the average response. (Researchers call these parameters the 95% confidence interval, which means that they are 95% confident that the true result, in this example the true average viral load response, lies between the limits stated).

PRACTICE IN UK CENTRES

A survey of UK clinical practice for this issue of *AIDS Treatment Update* suggests there is some variation between treatment centres at present, with some units testing viral load as early as two weeks after initiation of treatment. Others take a different view. Dr Graeme Moyle of the Chelsea and Westminster Hospital said: "I rarely do it at week four. What does it mean? How does one interpret whether the change is enough? Would the result lead to a change in therapy? I think not."

Regardless of the timing of monitoring, however, interpretation of results is very much individualised, for example by expecting those with high baseline viral load to see a slower decline. Discussing practice at his clinic in Brighton, Dr Martin Fisher said, "If any of the measured values have not dropped as expected, a careful examination of adherence issues and possible drug interactions, and repeat viral load testing would be performed, with consideration of resistance testing and/or therapeutic drug monitoring if appropriate".

Martin also described how the results of early viral load tests can be important in supporting people who are adjusting to taking a new drug combination: "A good drop may act as positive feedback during the initial period when tolerability may be most difficult. Conversely, a disappointing drop

may encourage closer adherence to the prescribed regimen".

CURRENT TESTS ARE INADEQUATE

Other strategies for identifying people at risk of virological failure, and who might therefore be candidates for intensification or an early switch, are clearly needed. On the strength of data reviewed in this article, early viral load monitoring – although it may identify the minority of patients who experience early treatment failure – would not appear to be an adequate tool for this job, particularly in people with limited experience of treatment. Data from the salvage therapy study ACTG 359, suggest the possibility of detecting failure early appears greater with more drug experienced patients. Unfortunately, it is in this context where doctors may have least to offer in terms of a change in therapy.

Key conclusions:

- ◆ There is some evidence that the speed at which viral load falls after starting a new anti-HIV drug combination predicts the durability of response to treatment – the faster the drop, the longer viral load will remain suppressed.
- ◆ The time taken for viral load to fall below detectable limits depends on the pre-treatment level, and this should be taken into account when interpreting test results.
- ◆ Measuring viral load in the first month or two of treatment may identify a small proportion of people whose treatment response is poor. However, results at this time are generally not reliable predictors of a successful response over the next two to four months.
- ◆ Early viral load results may be more effective, however, in identifying the risk of treatment failure in people with greater drug experience.
- ◆ A poor response in any viral load test should prompt consideration of possible causes of treatment failure, including poor adherence, inadequate drug absorption, or drug resistance.

Fat abnormalities

A multidisciplinary approach for HAART-associated metabolic problems

INTERVIEWS BY ROBERT FIELDHOUSE

It is over two years since the first reports of lipodystrophy and lipid (fat) abnormalities observed among people taking HAART emerged and still the causes are not well understood. Research is ongoing to define the exact role that different drugs may play.

The use of protease inhibitors (PIs) has been shown to lead to the development of high lipids with or without fat redistribution. More recently, nucleoside analogues (NAs) have been shown to elevate lipid levels in some patients and have even been put forward as a cause of lipoatrophy, or fat loss, particularly on the arms, legs and face. Additionally, some people have also reported truncal obesity (increased abdominal girth), even though they have only used NAs.

Psychologically, body fat changes can be very difficult to deal with as they can make an individual feel unattractive, or identifiable as being HIV-positive and on treatment. In the US, a market has emerged for corrective cosmetic surgery, particularly for facial wasting. Problems faced by people with fat abnormalities are, however, far from cosmetic. For example, high cholesterol and triglyceride levels can lead to a range of health problems if left unchecked.

Slowly, more data are emerging about effective ways of responding to the various syndromes. However, syndromes with a variety of causes are likely to remain particularly difficult to manage.

HEALTH IMPLICATIONS

High lipids have been associated with an increased risk of hardening and narrowing of the arteries and in the long-term, increase the risk of heart disease and stroke. The precise risk in the context of HAART use is under investigation, but as in other conditions, is likely to be influenced by the presence or absence of other risk factors, such as smoking, being overweight, or a family history of cardiovascular (heart) disease. When triglyceride levels are extremely high, patients risk developing pancreatitis, which can be life-threatening. Pancreatitis may occur because of mitochondrial damage, as can high lactic acid levels, or lactic acidosis, (see NAM Factsheet 42 for details of this rare but serious condition). There have also been rare reports of treatment-associated diabetes and it is thought that a family history of diabetes may be a contributory factor.

This month *AIDS Treatment Update* spoke to two leading clinicians, both running specifically targeted lipodystrophy clinics in London. Dr Barry Peters (BP) is based at St Thomas's Hospital and Dr Graeme Moyle (GM) is based at Chelsea and Westminster Hospital. In addition, we spoke to Alistair Duncan (AD), Senior Dietitian, HIV/AIDS at St Thomas's Hospital.

ATU: When do you consider intervention?

BP: The crucial issue is the extent to which the body changes cause concern to the patient, compared to the anxiety that they have in changing treatment. If the patient thinks, and our repeated anthropometry/DEXA scans confirm, that the situation is stable, then we don't rush to intervene, even in severe lipodystrophy. However if the changes are continuing, or there is special concern from the patient to change therapy, then we will discuss the swapping of those compounds most associated with lipodystrophy and high lipids, currently PIs and d4T. We tend to introduce either abacavir or an NNRTI.

GM: In the case of lipid abnormalities, if an individual has an isolated cholesterol level above 6.5mm/l or isolated triglyceride level over 10mm/l then we would consider the need for treatment. If there are other risk factors such as a family history of heart disease, and if the individual is a heavy smoker or is obese, then this would encourage the need for intervention. The primary risk of ongoing triglyceride elevation is the development of pancreatitis, which can also be exacerbated by heavy alcohol consumption, and possibly other drugs the patient is taking.

ATU: What role does nutrition play?

AD: Dietary advice should always be tailored to the individual, and to the antiviral regimen taken since one has to be careful not to recommend dietary changes that risk decreasing absorption of the drugs. HIV-positive people should not be given standard cholesterol-lowering advice and need to seek advice from a qualified dietitian. Omega 3 fish oils can be particularly beneficial since they can reduce triglycerides and protect against heart disease by thinning the blood and by making the arteries more flexible. Omega 3 oils are present in oily fish like salmon, pilchards, trout and sardines.

FURTHER INFORMATION

The NAM/BHIVA website aidsmap.com contains full summaries of current research on the lipodystrophy syndrome, including possible treatment strategies. These can be found in *Body fat and metabolic changes whilst on treatment within the Anti-HIV therapy* section. Details of a trial investigating the effects of recombinant human growth hormone in HIV-related wasting are in *Current UK trials* in the *Clinical trials* section. The *Links* section includes a list of sites with more on this subject. See also *AIDS Treatment Update* issues 87 and 80.

ALCOHOL

As well as exacerbating the risk of pancreatitis, heavy alcohol consumption also increases the risk of developing another side-effect, peripheral neuropathy (nerve damage in the hands and feet).

Fat abnormalities

Alternatively you can buy capsules containing the oil but you may need to take ten or twelve a day, which may not be desirable on top of a days worth of combination therapy.

When someone must have some fat in their diet to meet the specific requirements of their regimen, we recommend that they switch to monounsaturated fat, like olive oil, which the liver can't readily make into cholesterol.

GM: Within the clinic we've found that making changes to your diet can help reduce cholesterol levels. Dietician assessment is always a good idea. The challenge of making dietary adjustments is that often individuals are required to reduce their daily fat intake, yet it is often these same individuals who have experienced fat loss. Therefore, one needs to eat a greater amount of food to compensate this. For elevated cholesterol it's useful to reduce intake of saturated fat. Sugars increase triglyceride levels. Cutting out sugary drinks may help to reduce triglycerides.

Giving up smoking remains the most effective means of reducing risk of heart disease. However, it seems often a very difficult change to make. Rates of smoking among attendees at HIV clinics tend to be higher than in the general population. Other dietary changes that haven't been specifically evaluated among HIV-positive individuals include increasing linoleic acid and omega-3 oils, such as with linseed and pumpkin seeds, or fish intake, but these are all interventions we would tend to recommend. It's also sensible to have a glass of alcoholic drink each day to improve the HDL-LDL ratio [the ratio of 'good' to 'bad' cholesterol]. An old Australian joke is that the secret of a long, healthy life is to run from pub to pub!

ATU: Can exercise help?

BP: We run a gym programme for patients with lipodystrophy. They have an individual programme worked out for them and then attend our gym twice a week. This aspect is run by a specialist physiotherapist trained under [Australian expert] David Cooper. There are no proven interventions to add fat tissue selectively to areas of loss, of which the face is the most distressing. However we've used nandrolone and thalidomide with varying degrees of success, though each tends to add fat free mass. These are introduced depending on the degree of distress reported by each patient.

GM: Clearly, being fitter is better for your heart. When you exercise your heart grows just as muscles do. Interestingly, larger muscles consume more triglycerides. Studies are now showing the positive effects of exercise on triglycerides. It's also been shown

that individuals see an improvement in insulin sensitivity. Insulin resistance has been linked to intra-abdominal fat accumulation. Yarasheski evaluated the effects of resistance training on both body mass and lipid levels and found that fasting triglyceride levels normalised in nine of the eleven who had elevated levels at baseline. And a study by Magro combined aerobic exercise and a low fat diet to positive effect – 20% saw a return to normal triglyceride levels.

I recommend that anyone suffering from elevated cholesterol or triglyceride levels should raise their heart rate for at least thirty minutes at least three times a week. This can be done easily, either by brisk walking, riding a bike, jogging, swimming or even just getting off the tube one stop earlier.

ATU: What about lipid-lowering drugs?

BP: We intervene with lipid-lowering drugs only if other interventions have consistently failed to reduce the lipids below 8mm/l and the triglycerides below 10mm/l. For reasons of less drug interactions, our preferred lipid-lowering agent is pravastatin.

GM: There is no apparent interaction between pravastatin and protease inhibitors, so this tends to be the drug of choice if we need to use a lipid-lowering agent. Where possible, however, I prefer to make lifestyle and regimen modifications.

NOTE

The choice of drug intervention may vary according to the type of lipid abnormality seen. Predominantly high triglycerides may be best treated with a drug from the fibrate class, whilst pravastatin may be best for high cholesterol.

NAM FORUM

Graeme Moyle is the guest speaker at this month's NAM forum on May 22nd, when he will be discussing issues in the management of fat abnormalities which have been raised in this article. The forum runs from 7 to 9pm, in the 4th Floor Room, University of London Union, Malet Street, London WC1. The forum is free, all are welcome, and a sign language interpreter is available.

Key conclusions:

- ◆ If you are on HAART speak to your doctor about monitoring your lipid levels.
- ◆ Lipid abnormalities can occur after treatment with any combination.
- ◆ Lipid abnormalities can occur with or without the presence of body fat changes.
- ◆ Strategies to treat lipid abnormalities are evolving.
- ◆ Dietary changes and exercise are options that may be effective and avoid the need to take additional medication.
- ◆ Pravastatin may be the most appropriate choice of lipid-lowering drug, if one is needed, because it has no interactions with protease inhibitors.

ABT-378/r access

Abbott Laboratories' experimental protease inhibitor ABT-378/r is now available in the UK on named patient supply. This type of scheme allows an unlicensed drug to be supplied to an individual named patient whose doctor makes a request for its use on the patient's behalf. There are no restrictions in terms of patient criteria, but the prescribing physician must agree to take full responsibility for the drug's use once supplied, and to report safety information back to Abbott on an ongoing basis. Doctors who would like to know more about the scheme should contact the Named Patient Administrator at Abbott on 01628 644370. Note that the administrator cannot discuss the scheme with patients, however.

Further to our report on an interaction between ABT-378/r and the NNRTI efavirenz in last month's *AIDS Treatment Update*, Abbott have now advised us that a dose adjustment should be made whenever the drugs are taken together, regardless of an individual's prior use of anti-HIV treatment. ABT-378/r should be taken at a dosage of four tablets twice daily when part of a drug combination which includes efavirenz. For more information on clinical research into the effects and safety of ABT-378/r see *AIDS Treatment Update* issue 83, and the more detailed summary on aidsmap.com.

Trizivir access

Trizivir is an unlicensed product from Glaxo Wellcome which includes their three nucleoside analogues (AZT, 3TC and abacavir) in a single tablet. Glaxo Wellcome have recently opened a *Trizivir* named patient programme in the UK. Again, this scheme provides an unlicensed product to a doctor who applies for its use on behalf of a patient, and takes responsibility for the patient's welfare as a result.

The programme is for patients for whom adherence is a major problem or who have encountered practical difficulties with daily pill burden, and can be accessed only where in the judgement of the prescribing physician, *Trizivir* is a viable treatment option where no currently licensed alternative is available, which might lead to improved adherence.

Details of the programme are available to doctors only by contacting the HIV Named Patient Co-ordinator on 020 8990 4501/

4147. Triple nucleoside analogue combinations were last discussed in *AIDS Treatment Update* in issue 83. More information on *Trizivir* and its components is available on aidsmap.com.

ddl formulations

Bristol Myers Squibb have recently launched a 200mg formulation of their nucleoside analogue ddl, the only drug from that class which is licensed for once daily use. The availability of the 200mg tablets cuts the daily dose from four to two tablets a day.

In a separate development, another formulation of the drug, known as enteric-coated ddl, has been licensed for use in France ahead of its availability elsewhere in the world. This new capsule formulation will allow ddl to be swallowed without the need for dissolving it in water first.

Nelfinavir news

A new formulation of the protease inhibitor nelfinavir has been licensed for use in the US. A film coating allows the drug to be swallowed more easily. A hardened tablet formulation, another measure designed to improve tolerance, should be available in UK pharmacies over the coming months.

New from NAM

A new edition of NAM's acclaimed *HIV & AIDS Treatments Directory* will be published in mid-May. Fully revised and updated throughout, the *May Treatments Directory* is packed with information on all medical aspects of HIV, including:

- ♦ Choosing, starting and changing anti-HIV therapy
- ♦ Managing treatment failure
- ♦ New monitoring tools: resistance testing and therapeutic drug monitoring
- ♦ Global developments in the prevention of mother-to-baby transmission
- ♦ A completely revised A to Z listing of drugs used by people with HIV.

You can order your copy now at the special price of £9.95 for individuals (standard price for professionals: £57.50), to make sure you receive your copy hot off the press. To place an order, telephone Claire or Helen on 020 7627 3200, or email info@nam.org.uk.

NAM BOOKLETS

All six booklets in NAM's award-winning *Information series for positive people* can now be read online as pdf files on aidsmap.com. To do this, you will need Acrobat Reader, which can be downloaded on aidsmap.com.

CORRECTION

In last month's *AIDS Treatment Update* we misreported the design of the ERA study of resistance testing. In Part B, randomisation is to one of two arms, not four. All participants in this part of the study will receive a resistance test, either a genotypic test alone or a genotypic test plus a phenotypic test. We apologise for any confusion, and thank those who noted the error.

GLOSSARY OF TERMS

antiretroviral Something that attacks retroviruses such as HIV

baseline Starting point or value

CD4 Molecule on the surface of some cells onto which HIV binds. CD4 cell count roughly reflects the state of the immune system

cholesterol Waxy substance, mostly made by the body, used to make steroid hormones

diabetes A blood disorder caused when the body can't use or metabolise sugar properly. Symptoms include extreme thirst, blurred vision and frequent urination

insulin Hormone which enables body tissues to take up sugar from the blood

insulin resistance When insulin is present in the blood but unable to do its job properly

lactic acidosis High blood levels of lactic acid, a substance involved in metabolism

lipid A general term for fats in the blood

lipodystrophy A disruption to the way the body produces, uses and distributes fat

log Short for logarithm, a measurement scale often used when describing viral load

mitochondria Cellular compartment involved in energy production

naive Never having taken anti-HIV treatments before

NNRTI Non-nucleoside reverse transcriptase inhibitors: anti-HIV drugs that include

nevirapine, delavirdine, and efavirenz

NRTI Nucleoside analogue reverse transcriptase inhibitors: anti-HIV drugs that include AZT, ddI, ddC, 3TC and d4T

protease An enzyme that HIV uses to break up large viral proteins into smaller ones

protease inhibitor Anti-HIV drugs which target the protease enzyme, e.g. saquinavir, ritonavir, indinavir, nelfinavir

recombinant regimen Genetically reconstructed Drug or treatment combination

resistance A drug-resistant HIV strain is less susceptible to the effects of one or more anti-HIV drugs because of its genetic make-up

reverse transcriptase An enzyme which converts genetic material from RNA into DNA, an essential step in the lifecycle of HIV

steroids Immune-suppressing drugs used to damp down excessive immune responses

triglycerides The basic 'building blocks' from which fats are made

undetectable viral load A level of viral load that is too low to be picked up by the particular viral load test used

viral load The amount of virus in a sample. HIV viral load indicates the rate at which HIV is reproducing in the body

virologic response Effect of treatment on viral load

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ANY QUESTIONS?

The following national agencies, all based in London, offer one-to-one advice and information about treatment options, in person or over the telephone:

♦ AIDS Treatment Project

Phoneline: 0845 9470047
Mon & Wed 3pm - 9pm, Tue 3pm - 6pm
All calls charged at local rates.

♦ Body Positive

Treatment Advice: Tue & Wed 12pm - 5.30pm
Call Anthony on 020 7287 8010 to make an appointment.

♦ The Terrence Higgins Trust

Helpline: 020 7242 1010 Daily 12noon - 10pm
Treatment Support: Call the Treatments Team on 020 7831 0330 for an appointment.

NAM recommends readers to seek treatment advice from more than one source, and to discuss all your decisions with your doctor.

The publishers have taken all such care as they consider reasonable in preparing this newsletter. But they will not be held responsible for any inaccuracies or mis-statements of fact contained herein. Inclusion in this newsletter of information on any drug or clinical trial in no way represents an endorsement of that drug or trial. This newsletter should always be used in conjunction with professional medical advice.

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