

AIDS

U.P.D.A.T.E

• By Sean Hosein •

Inhaled Pentamidine delays relapse study finds

Liquorice for AIDS

Scientists in Japan have extracted the substance glycyrrhizin (GL) from liquorice root and found that it has potent anti-viral activity. In addition to its anti-herpes effects, GL strongly inhibited the formation of a certain enzyme which helps HIV enter cells. The drug also prevented cell to cell infection, reducing the formation of giant clusters of infected cells. *Antiviral Research* 1988;10:289-298.

Results from a small study of GL suggest that when given in high doses (800 to 1600 mg/day) to PLWAs, it increased the T4 count and reduced levels of HIV-1. *IV Intl. Conf. AIDS, Stockholm, Sweden, 1988. Abstract #3534. Glycyrrhizin can be bought in certain health food stores in Canada.*

Immune Boosters: Levamisole

Ferritin is a protein which is used to store iron in cells. Scientists have found that as HIV infection worsens levels of ferritin rise. Placenta and tumour cells produce another type of ferritin called PLF. PLF has been shown to suppress the immune system and also to reduce the formation of new blood cells.

Levels of PLF were highest in people with swollen lymph nodes/spleens in early HIV infection but once the disease progressed, PLF levels dropped. In people with AIDS, PLF levels had fallen to near normal levels. The scientists discovered that PLF binds to T8 cells possibly inactivating them. When PLF coated T8 cells from HIV infected people were treated with the drug levamisole, the PLF was removed.

It is known that certain T8 cells can block HIV infection as well as viral replication. Removing PLF from T8 cells with levamisole could help the body in its battle with HIV. *AIDS* 1989;3:11-16. Levamisole is made by Janssen pharmaceuticals.

Infection Fighters: Aerosolized Pentamidine for PCP

PCP (Pneumocystis carinii pneumonia) develops in about 80% of PLWAs, in half these people a relapse occurs within twelve months. Doctors in San Francisco, after studying a group of 102 patients concluded that inhaled pentamidine can delay relapse by six months and reduce the relapse rate by 50%. Significantly, the researchers did not conduct a placebo trial because they consider such trials to be unethical. They used historical controls for comparison.

Aerosolized pentamidine (AP) maximizes the amount of drug reaching the lungs and minimizes the amount absorbed by the rest of the body. 'Ultravent' nebulizers were used to aerosolize 300 mg of pentamidine dissolved in 4 l of sterile water, delivered over 20 minutes with a compressed air flow

of 12 l/m, inhaled while sitting upright. Patients who found the aerosol irritating were given inhaled metaproterenol before the AP. The AP was given once a month. Six patients acquired PCP while on the monthly schedule.

One died from PCP and ten died from other causes. By the sixth month PCP-free survival was 82% for people who had a prior episode of PCP.

Another result of the trial was that after six months on AP, the proportion of patients who developed PCP while on AZT did not differ significantly from non-AZT users. No side effects were seen when AZT and AP were used together. *Lancet* 1989;1:654-657.

Meanwhile in other news about AP, researchers in New York have found that the distribution of the drug in the lungs was more uniform when the person was lying flat on his/her back. *American Review of Respiratory Diseases* 1989;139:A248.

Help for Septa allergies

The standard treatment for PCP is use of the drug septra/bactrim. Unfortunately many PLWAs are allergic to this very effective drug. Now scientists at the National Institutes of Health in the USA have found a way to help patients overcome their allergies. Borrowing a classic method used for treating other allergies, the researchers gave their patients increasing doses of the drug over a period of 26 days until they could tolerate the required dose. While there were relapses, this method might allow more PLWAs to use and benefit from the drug. *Annals of Allergy* 1989;62:177-179.

Combination therapy for MAC

Approximately 1/3 of PLWAs have been found to have MAC (Mycobacterium avium complex) infections of the lungs/liver and/or bone marrow. Doctors in New York in a review of treatment given to 45 patients with AIDS or ARC found that combination therapy helped the patients improve the quality of their lives. The patients were all given the same treatment: isoniazid 300 mg, ethambutol 15 mg/kg, ansamycin 150 mg and clofazimine 100 mg. If liver toxicity developed isoniazid was discontinued. Therapy was continued until death. Doctors found that early and aggressive therapy whenever MAC infected the lungs usually prevented it from spreading. Recent test tube studies show that the drug ciprofloxacin is effective against some strains of MAC. According to the scientists, future therapy might replace isoniazid with ciprofloxacin in combination therapy for MAC. *Journal of Infectious Diseases* 1989; 159:784-787.

Fuconazole for Thrush

Infections by the fungus candida is often seen in HIV infected people. At times the fungus can be difficult to treat. One drug used to treat wide spread fungal infections, keto-

conazole, has caused liver toxicity and may interact with AZT.

Fuconazole is an antifungal made by Pfizer. The drug is well absorbed orally and lasts a long time in the blood (a half life of 30 hrs). Preliminary results from a study of 95 patients in Switzerland show that it was well tolerated and effective when given in a single dose of 150 mg.

Results were reported on the first 31 patients. Most of the patients (96%) persisted with a good response by the 7th day. 10 patients had a recurrence in signs and symptoms but responded well to a second dose of 150 mg. No side effects were seen. *Journal of Infectious Diseases* 1989;159:806-807.

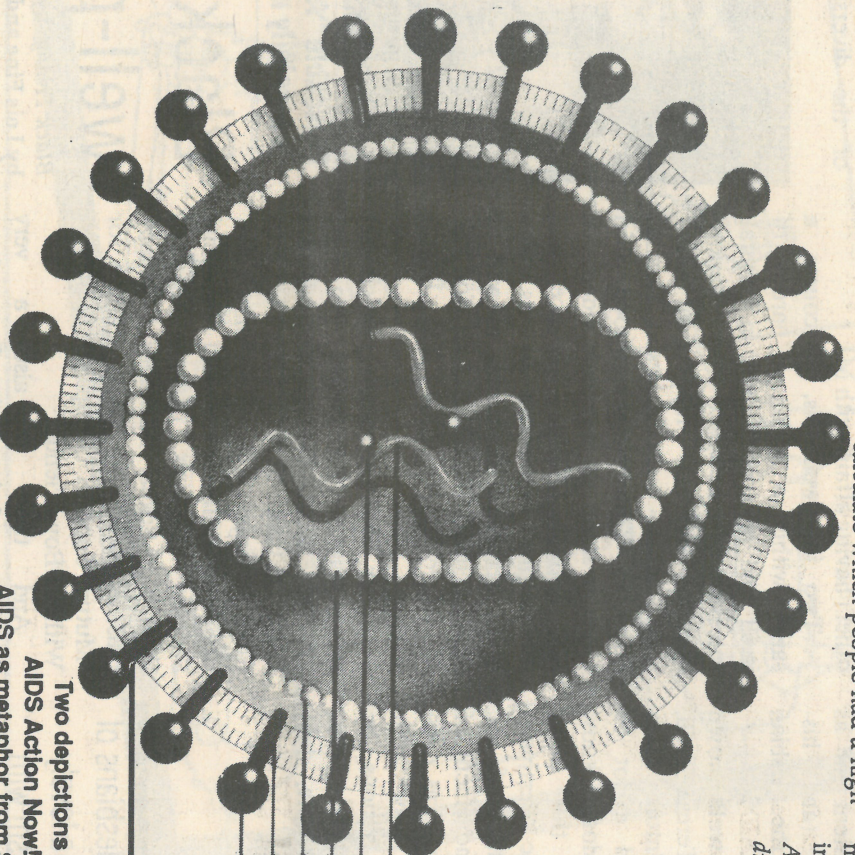
Testing: Neopterin and AIDS

Neopterin is a substance produced by cells of the immune system—such as macrophages—during inflammatory disorders including viral and parasitic infections as well as cancer. Scientists in California have noticed a relation between the state of the immune system and that chemical during HIV infection. It should be noted that around the time of seroconversion (when previously HIV antibody negative people begin to produce HIV antibodies, i.e. test "positive" for the antibody) a person can have high levels of neopterin without low levels of T4 cells.

In a study of 799 HIV infected men, the researchers were able to calculate which people had a high

chance of developing AIDS within three years based on their levels of neopterin. The prediction became more accurate when T4 cells were used together with blood levels of neopterin to make the analysis. As the T4 count decreased and the neopterin level increased, the probability of developing AIDS rose significantly. A person with a T4 count of less than 250 and a neopterin level of less than 20 nmol/L had a 58% chance of developing AIDS. Persons with a similar T4 count who had neopterin values greater than 20 nmol/L had a 90% chance of developing AIDS within three years.

According to researchers, measuring the blood levels of neopterin may be a quick way of determining the effect of anti-viral drugs in HIV infected people. *Journal of Acquired Immune Deficiency Syndromes* 1989;2:70-76.



RNA
Reverse Transcriptase
P24
P18
P91
SP120

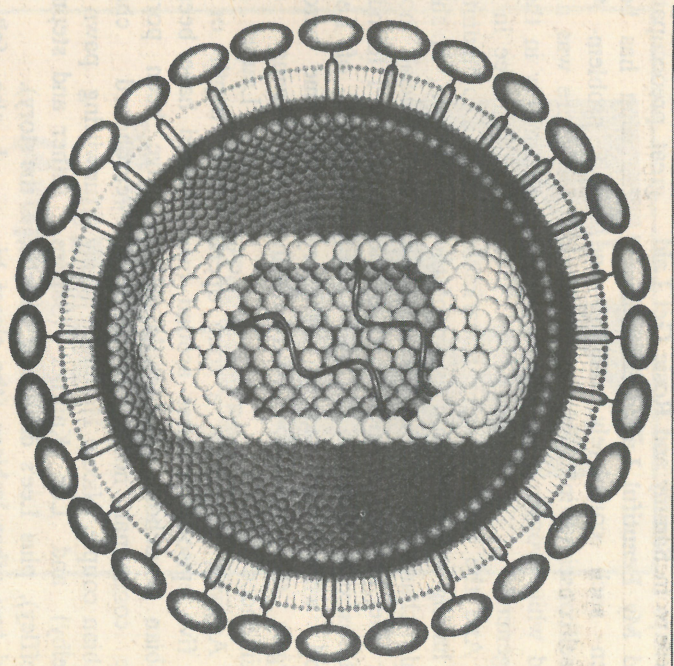
Co-factors: a new virus

At the Stockholm conference on AIDS in 1988, Dr. S-C. Lo presented an abstract on a virus like infectious agent (VILIA) derived from a Kaposi's sarcoma lesion from a PLWA. Dr. Lo and his team purified the virus and injected it into 4 silver leaf-monkeys with striking results. All four animals developed weight loss, swollen lymph glands and died within 7 to 9 months. The virus also appeared to cause brain damage. Autopsies of the monkeys showed no opportunistic infections or cancers. *IV Intl. Conference on AIDS, Stockholm, Sweden 1988. Abstract #2662.*

Now Dr. Lo and his team have discovered VILIA in PLWAs. Using the state-of-the-art PCR (Polymerase Chain Reaction) to detect the virus, researchers have found VILIA in seven out of ten people. The virus was detected in the spleen, liver, lymph nodes, KS lesions and certain blood cells of PLWAs. VILIA was not found in similar sites in five non-HIV infected people. The scientists think that VILIA may be either an opportunistic infection or a co-factor in people with severe HIV infection. *Am. J. Trop. Med. Hyg.* 1989; 40: 213-226.

Two depletions of HIV: above, published by AIDS Action Now!; below, a classic example of AIDS as metaphor from Scientific American -- the virus as grenade set to detonate like a time bomb in the innocent white heterosexual populace.

SCIENTIFIC AMERICAN



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