

AIDS

The spread of AIDS (acquired immune deficiency syndrome) is the most serious health crisis of our time and has reached epidemic proportions worldwide. In many American cities and other areas of the world it is the leading cause of death for 25 to 45 year-old. Because of widespread AIDS research, the scientific community has learned more about viruses and the immune system in the last few years than in the previous ninety.

HUMAN IMMUNODEFICIENCY VIRUS (HIV)

AIDS is linked to the human immunodeficiency virus (HIV), which is particularly destructive to the victim's T-cell lymphocytes – a type of white blood cell necessary for effective immune response. There are three types – killer T-cells, helper T-cells and suppressor T-cells. Helper cells – which signal the presence of antigens so the body can effectively counter them – are destroyed by HIV, preempting the build-up of killer cells that ordinarily combat viruses. The result is immune-deficiency. The AIDS virus does not kill directly, but leaves the victim defenseless against even the most innocuous disease organisms.

Long-term prospects for AIDS sufferers are slowly improving, and much can be done in the short-term. With good care the worst symptoms can be avoided for years and the patient can lead a productive life. As more is known about the disease and its spread, more effective treatments will emerge. There is widespread hope for a cure within the next decade.

Many pharmacological and naturopathic medications are promoted as possible AIDS therapies, both for treatment and prevention. These have varying levels of success but at a cost – many pharmacological drugs are toxic, and while they help in their own ways to fight the disease, they exact a heavy toll in other ways, both physical and financial. There are certainly no miracle cures. Some therapies help, some are hazardous. Nevertheless, a combination of treatments is more effective than any one alone, so most AIDS patients adopt one of several regimens known as drug cocktails.

The worst aspects of the disease are secondary to HIV itself. Because the immune system has been compromised, it cannot respond adequately to most sorts of infection. These infections, not the HIV, cause disease.

THE ROLE OF GSH IN AIDS

Much attention is therefore paid to the role of GSH in AIDS patients. Among other things, the disease causes chronic inflammatory change and oxidative stress. These activities consume GSH and lead to dysfunction in CD₄ helper cells. Once T-cells lose their efficiency, the patient becomes susceptible to opportunistic infections, such as include certain types of pneumonia, diarrhea, candida and unusual cancers – diseases to which healthy individuals are immune. The immuno-deficiency becomes generalized and leads to malnutrition, wasting and death.

Researchers have discovered that, among other biochemical changes, AIDS patients experience unusually low GSH concentrations. Some have reported that GSH levels in the blood fall to about 30% of normal. They suggest that this deficiency contributes to the typical feature of HIV infection – progressive weakening of the immune system. Others assign GSH a proactive role, saying that the inflammatory cytokines that make HIV growth possible are inhibited by elevated GSH concentrations. They demonstrated this effect by raising GSH levels with drugs like NAC (N-acetyl-cysteine). The same team in 1991 showed how the loss of CD₄ and CD8 T-cell GSH corresponds to the progression of the disease.

In 1992, a team led by Dr. Gustavo Bounous investigated the properties of milk protein isolates at McGill University, Montreal. They developed a method of extraction that preserved the GSH-enhancing properties of the protein. The product was later patented and named Immunocal.

Dr. Bounous and his colleagues knew that heightened GSH levels seemed to enhance the human immune system. Learning of the correlation between HIV progression and low GSH levels, they studied its effects on AIDS patients. Their milk-protein isolate was given as a dietary supplement. The results were that it often diminished and sometimes reversed the wasting effects of AIDS. These patients also exhibited elevated CD₄ T-cell counts and decreased viral load.

The natural availability of GSH precursors was welcome news to the AIDS research community. Immunocal was presented at the Canadian Conference on HIV/AIDS Research in 1994 by Baruchel, Olivier and Mark Wainberg, the incumbent chairman of the International AIDS Research Association. Dr. Luc Montagnier, co-discoverer of the AIDS virus, drew attention to the promising effects of Immunocal in his opening address at the Tenth International AIDS conference in Japan in 1994.

Baruchel, Bounous and Gold's research with Immunocal was significant enough to receive funding from the Canadian HIV Trials Network, and a large multi-center study is in progress.

The Center for Disease Control (CDC), Atlanta reported in their AIDS web page, February 1997:

“...laboratory studies have shown that a new whey protein concentrate, called Immunocal, can inhibit HIV replication while also stimulating the production of GSH, an amino acid that helps control the virus.”

In a landmark 1997 paper Herzenberg and Herzenberg clearly stated that GSH deficiency is associated with decreased survival in HIV disease. They improved survival rates by administering NAC (a GSH-promoting drug). Given the growing body of evidence demonstrating the benefits of raising GSH levels in AIDS patients, this represents a welcome addition to complementary therapy.

CASE STUDY

The first member of this family of three to be diagnosed with AIDS was the father Bob, who developed a pneumonia at age forty-four. His wife Joan who developed swollen glands (lymphadenopathy), tested positive shortly afterwards. Subsequently they discovered that their two-year old son Justin was also HIV-positive, although he was asymptomatic. Both Bob and Joan became progressively unwell and Bob quit his job due to fatigue. Both were started on the antiviral drug AZT, but both discontinued this therapy because of intolerable side-effects. Because of her vomiting and profound headaches on the drug, Joan decided not to allow her son to receive this therapy. Bob, Joan and Justin were started on Immunocal. Both husband and wife noticed significant increase in their energy levels within weeks. Monitoring the families' blood tests over the next nine months, 8iproveme4nts in viral load, lymphocyte (white blood cell) count and specific CD4 lymphocyte values were apparent. Bob's back at work. Justin is still symptom-free. Joan wanted another child, but has been convinced not to pursue this idea.

CONCLUSION

AIDS attacks the immune system and is characterized by decreased GSH levels and a general lack of resistance to pathogens. In fact, glutathione deficiency is associated with decreased survival in HIV disease. Scientific studies have shown that supplementation aimed at maintaining GSH levels can diminish and sometimes reverse the wasting effect of AIDS. The patients studied in these experiments often also exhibit elevated CD-4 lymphocyte cell counts and decreased viral loads. As a result of these and many other AIDS trials, larger studies should establish glutathione supplementation as a mainstay of complimentary therapy.

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