

Is The AIDS Virus A Science Fiction?

Immunosuppressive Behavior, Not HIV, May Be the Cause of AIDS

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Policy Review Summer 1990

A report published by the Centers for Control (CDC) on June 5, 1981, startled the medical community in the United States. This report described five unusual medical cases that had been observed between October, 1980 and May, 1981. All five had developed cases of *Pneumocystis carinii* pneumonia. *P. carinii* is a microbe present in the lungs of most healthy people, but can cause sickness when the host immune system has somehow been severely weakened. Immunosuppression in these cases was confirmed by the presence of various other opportunistic infections. Medical authorities were most surprised at the identity of the patients: these cases with severe immune collapse all involved 20-to-40-year-old men, typically considered a healthy age group. Further, all of these men were homosexual.

A subsequent report by the CDC on August 28 listed 21 additional cases showing similar severe immune suppression problems. Along with *P. carinii* pneumonia, esophageal candidiasis (a yeast infection), and other diseases typical of immune deficiencies, a number of these patients displayed a rare condition known as Kaposi's sarcoma. This is a growth in the blood vessel linings, manifesting as reddish lesions on the skin. The CDC referred to these new patients with strange combinations of conditions as "previously healthy homosexual men." Since growing numbers of healthy men should not simultaneously develop severe sickness, the full complement of observed in them was grouped together into a syndrome presumed to have some single underlying cause; first called Gay-related Immune Deficiency (GRID), the syndrome eventually became known as Acquired Immune Deficiency Syndrome, or AIDS.

Since this syndrome was first defined, over 130,000 Americans have been diagnosed with AIDS, and over 80,000 of these have died. Male homosexuals continue to comprise the major risk group for AIDS, but intravenous drug users, blood transfusion recipients, and hemophiliacs also have been included as AIDS victims. Since 1981, the list of indicator diseases for diagnosing AIDS has been expanded by the CDC to include *P. carinii* pneumonia, tuberculosis, Kaposi's sarcoma, dementia, lymphoma, candidiasis, diarrhea-altogether 25 conventional diseases. The most commonly diagnoses of these is *P. carinii* pneumonia, found in about 53 percent of new AIDS cases last year, followed by wasting syndrome in 19 percent, candidiasis in 13 percent, Kaposi's sarcoma in 11 percent, and dementia in 6 percent.

Federal funding has grown with the syndrome. In the earlier years of the epidemic, spending was at a few million dollars a year. Since 1984, with the announcement by the Secretary of Health and Human Services that an AIDS virus had been discovered

and could possibly affect the general public, spending on AIDS research, education and treatment has grown enormously, and has now reached \$2.9 billion for this fiscal year.

Immune Breakdown.

As a syndrome defined by several conventional diseases, AIDS was seen as being the result of an underlying deficiency in the immune system. In many of the early patients, the main abnormality appeared to be a depletion of one specific subgroup of cells in the immune system, the T-helper cells; these cells respond to the presence of invading microbes and stimulate other cells to produce the proper antibodies against new germs. But the actual estimates of "proper" levels of T-helper cells were largely speculative because little research had previously been done on this aspect of the immune system. Because the average number of T-helper cells in AIDS patients was lower than among other people, the notion developed that this syndrome was caused by something depleting these particular cells.

Among the earliest proposed causes of AIDS were the nitrite inhalers used almost exclusively by homosexuals in the bath houses. Some early work connected their use to the incidence of Kaposi's sarcoma, but this hypothesis could neither account for the full spectrum of AIDS diseases nor for AIDS in heterosexuals, and it was soon dropped.

Most of the interest instead focused on the search for an infectious agent causing AIDS. Beginning with the first report of AIDS cases, the CDC noted that all of the early cases had either current or previous infection by cytomegalovirus, a member of the herpes group of viruses. Cytomegalovirus was known to have immunosuppressive ability, and this possibility was pursued for some time. But, because this virus was widespread in the general population, and since not all AIDS patients had been infected, this was ultimately abandoned as well.

The question of the cause of AIDS was officially settled on April 23, 1984, when the Department of Health and Human Services announced the isolation of the AIDS virus. Called Lymphadenopathy-Associated Virus (LAV) by its French discoverer, and Human T-cell Leukemia Virus III (HTLV-III) by American scientists, it has since 1986 been officially referred to as the Human Immunodeficiency Virus (HIV). The belief that HIV causes the immunosuppression underlying AIDS became the generally accepted view in the scientific community with the 1986 benchmark publication "Confronting Aids," published by the National Academy of Sciences and the Institute of Medicine. The predominant view today holds that this virus causes immune deficiency by depleting the body of T-helper cells, dooming 50 to 100 percent of infected people to develop AIDS and die.

However, since 1987 an increasing number of medical scientists and physicians have been questioning whether HIV actually does cause AIDS. Some of these dissident

scientists simply demur that HIV has never been proved to cause AIDS, and therefore its role is unclear. Others believe that the evidence essentially rules out HIV as playing any part in AIDS at all. Many more maintain that HIV cannot cause AIDS alone, but may need additional, unidentified factors. Currently, most of these doubters prefer not to be quoted, out of fear of losing research funding or of disapproval by peers. This challenge is so far a minority view, due largely to inadequate attention provided by media sources. In spite of the well-established credentials of many of the more outspoken opposition scientists, their views have yet to be heard by most Americans.

The Case for HIV

An article by Luc Montagnier, French discoverer of HIV, and Robert Gallo, the leading American HIV researcher, in the October 1988 issue of "Scientific American", discussed in part the rationale behind searching for an AIDS virus in the first place. Noting the sudden onset of diseases previously considered uncommon in young men, they argued that only the recent introduction of a new microbe could account for this increase.

The exact means by which HIV kills T cells is still not known. Gallo and his colleagues have repeatedly pointed out that although the mechanism may be unclear, the evidence that HIV does cause AIDS has been well established. They primarily cite evidence from epidemiology, the study of how diseases spread.

They point out that the people who get AIDS are those who have antibodies to HIV. Studies following HIV-infected people in AIDS risk groups over time observe a progression to sickness characteristic of AIDS.

Proponents of the virus-AIDS hypothesis stress the geographic correlations between AIDS and HIV infection. AIDS is most common in Africa and in cities such as New York and San Francisco where HIV is widespread. Neither AIDS nor HIV can be found extensively in Asia or the Soviet Union and Eastern Europe.

Proponents also give special attention to the more than 1,600 infants, over 1,100 hemophiliacs, and roughly 3,000 recipients of blood transfusion in the United States who have developed AIDS years after being infected with HIV. The October 1988 Scientific American cited an example of a hemophiliac family, in which the father and son both contracted HIV and developed AIDS. A well-publicized example was Ryan White, the young hemophiliac who contracted HIV, developed AIDS, and recently died at the age of 18. The late California legislator Paul Gann, who led the Proposition 13 anti-tax movement, also received some attention, having received HIV through a blood transfusion and subsequently developing a fatal case of AIDS pneumonia. Since infants, and the majority of hemophiliacs and transfusion recipients, can be presumed to be neither intravenous drug abusers nor active homosexuals, their principal apparent risk factor has been their infection by HIV.

Although most viruses cause disease within weeks of acute infection, HIV purportedly causes AIDS after an average latent period of 10 to 11 years. To support this notion, defenders of the virus-AIDS hypothesis cite models of other viruses that cause in animals and humans, often with latent periods of 10 to 40 years between infection by the virus and the development of disease. Such "slow viruses" have been credited in recent years for various leukemias both in humans and animals, as well as for certain other specific cancers. Female cervical cancer is widely thought to be caused by assorted strains of human wart viruses, while the cancer known as Burkitt's lymphoma is often believed to be the result of the virus that also causes mononucleosis.

Further, Simian Immunodeficiency Virus and Feline Immunodeficiency Virus, both viruses in the same class as HIV, often cause sickness or even death when introduced into laboratory monkeys and cats, with conditions referred to as equivalents of human AIDS.

Koch's Postulates Unmet

Scientists dissenting against this widely accepted virus-AIDS hypothesis often raise as their most fundamental point that this theory has simply never been proven. Introduced by Robert Koch in the past century, the classical criteria for showing whether a disease is infectious and caused by a particular microbe are called Koch's Postulates. But as the Harvard molecular biologist Walter Gilbert, a Nobel laureate, points out, these criteria have not been met for HIV:

Postulate 1: The germ must be found in the affected tissues in all cases of the disease. However, no HIV at all can be isolated from at least 10 to 20 percent of AIDS patients; until the recent advent of highly sensitive methods, no direct trace of HIV could be found in the majority of AIDS cases. Further, HIV cannot be isolated from the cells in the lesions of Kaposi's sarcoma, nor from the nerve cells of patients with AIDS dementia.

Postulate 2: The germ must be isolated from other germs and from the host's body. The amounts of HIV in AIDS patients are typically so low that the virus must be isolated indirectly from a patient, only after first isolating huge numbers of cells from the patient and then reactivating the virus. In classical diseases, enough active virus is present to isolate directly from the blood or affected tissue; anywhere from one million to one billion units of virus per milliliter of body fluid can be found during the time most viruses cause, and viruses of the same class as HIV are found at levels between 100,000 and 10 million units per milliliter. HIV, on the other hand, is usually found in less than five units and never in more than a few thousand units per milliliter of blood plasma.

Postulate 3: The germ must cause the sickness when injected into healthy hosts. HIV has not been shown to cause disease when injected experimentally into chimpanzees,

nor when accidentally injected into human health care workers, even though the virus successfully infects those hosts. If for ethical or other reasons this third postulate cannot be tested from some particular germ, strong alternative evidence has to be provided by specific therapies that neutralize the microbe and thereby prevent the disease; such therapies would include antibiotics or vaccines. However, no therapies or antibodies against HIV have been able to prevent AIDS diseases, although new drugs and vaccines are continually being proposed.

Postulate 4: The same germ must once again be isolated from the newly diseased host. Until the third postulate can be met, this one is irrelevant.

The failure to meet Koch's postulates raises questions about whether AIDS is even infectious at all. Koch's postulates are the standard criteria for determining disease agents. When they are not met, strong alternative evidence must be produced to support any infectious agent hypotheses.

The burden of such proof is therefore on those who claim that HIV causes AIDS, as noted by Beverly Griffin, director of the Department of Virology at the Royal Postgraduate Medical School in London. This burden is especially high for HIV hypothesis supporters in view of the special characteristics that had to be attributed to HIV in order to connect it with AIDS. First, the virus had to be credited with a latent period of several years between infection and AIDS. But when diseases are said to occur only years after infection by a virus, it can be difficult to be sure that other risk factors have not instead caused the disease. Second, because HIV is conspicuously absent from lesions, scientists had to hypothesize that the virus caused disease by indirect means in the body, in spite of a troubling lack of evidence for such notions. Inventions such as these can be used to blame virtually any microbe for any disease.

Definitional Paradoxes

A second set of criticisms of the HIV hypothesis concerns the clinical definition of AIDS. This definition involves a list created by the CDC in 1987 of about 25 conventional diseases; if any one of these is diagnosed, and antibodies against HIV can be found in the same patient, a diagnosis of AIDS is made. The list includes not only Kaposi's sarcoma and *P. carinii* pneumonia, but also tuberculosis, cytomegalovirus, herpes, diarrhea, candidiasis, lymphoma, dementia, and many other diseases. If any of these very different diseases is found alone, it is likely to be diagnosed under its classical name. If the same conditions is found alongside antibodies against HIV, it is called AIDS. The correlation between AIDS and HIV is thus an artifact of the definition itself.

Another definitional concern relates to how a single virus could lead to such a spectrum of diseases. Harry Rubin, biologist at the University of California at Berkeley and recipient of the Lasker Prize for his work on viruses, is one of several dissenting scientists who argue that these should never have been grouped together,

and that no new microbe is needed to explain the occurrence of these old conditions among behavioral AIDS-risk groups in recent years.

The rationale for combining these separate diseases into a single syndrome is the assumption that they all have a single underlying cause: immune deficiency purportedly caused by HIV. However, immune system failure cannot account for some of the conditions on the AIDS lists, particularly the cancers and dementia. While many scientists still hope to find ways of fighting cancer using the immune system, experimental work has long shown that cancers do not necessarily increase in the presence of immune deficiencies. After all, the immune system can only fight foreign particles, but cancer cells are actually part of the patient's body. Dementia is likewise not directly prevented by the immune system, because antibodies do not normally reach brain tissue. Microbes that reach the central nervous system are free to grow without interference by the antibody defenses, even in a fully healthy individual. HIV must therefore be credited with doing far more than simply depleting the immune system; it would have to destroy neurons and make cancerous certain other cells, while simultaneously killing or preventing the growth of immune cells. Indeed, any AIDS microbe would face the same difficulties.

Little Detectable Virus

A third difficulty with the HIV hypotheses is that there is very little detectable virus in AIDS patients. Fewer than 1 out of every 10,000 of the host's T-helper cells are actively infected by HIV even during AIDS; moreover, the tiny amount of virus produced by these few cells is neutralized by the same antiviral antibodies that are detected by the "AIDS test." Fewer than 1 in 500 of a host's T cells contain even dormant HIV which can only be found by isolating these cells from the body and stimulating them artificially with compounds that help reactivate these latent viruses from within the cells. The resulting difficulty, and often impossibility, of isolating HIV from AIDS patients make the presence of antibodies against the virus the only practical basis for diagnosis.

It is very difficult to understand how HIV would be able to devastate the immune system while never infecting more than a tiny fraction of its cells. Even if every infected cell were killed, the number of T cells lost at any time would be roughly equivalent to the number lost through bleeding from shaving. Such losses could be sustained indefinitely without affecting the immune system, because the body constantly produces new T cells at far higher rates. Virtually no reactivation of the virus occurs when AIDS patients develop sickness, leaving unexplained how the virus could possibly cause immune suppression, and then only after years of latency. After the body produces antibodies against HIV, the virus remains at low levels for the rest of that person's life, precisely the same as for all viruses of its class. This would help to explain why transmitting HIV is typically so difficult; antibody-positive people have almost no virus to spread.

A few studies describe rare cases of brief flu-like conditions shortly after infection by HIV but these patients recover rather quickly once their immune systems have created antibodies against HIV. This emphasizes the paradox: how could an inactive virus cause a fatal after 10 years, when the same virus causes at most a mild condition when it was first active?

Misleading Animal Models

A fourth paradox of the HIV hypothesis has been noted by several virologists. HIV belongs to a class of viruses known as the retroviruses, which are very simple in structure and contain much less genetic information than most other viruses. Most types of viruses are lytic, meaning that they kill the cells they infect and thereby cause disease. Retroviruses, on the other hand, do not generally kill cells. Upon infecting cells, they copy their genetic information into the DNA of their new host cells. From that point forward, retroviruses depend on allowing their host cells to continue living, while they slowly produce new virus particles that are ejected from the cell. Retroviruses are therefore poor candidates to blame serious diseases on, particularly fatal conditions involving the deaths of huge numbers of cells, such as AIDS. Indeed, some 50 to 100 latent retroviruses have been found to reside in the DNA of all humans, passed along to each successive generation for as long as human beings have existed.

Past research by Harry Rubin has shown that retroviruses cannot infect any cells that do not divide. Neurons in the human brain do not divide after the first year of life, so HIV cannot possibly infect those cells. This would explain why HIV has not been isolated from these cells, and confirms the difficulty it would also face in causing dementia.

Harvey Bialy, research editor of the professional journal *Bio/Technology*, argues that the simple genetic structure of HIV does not differ sufficiently from other retroviruses to account for its supposedly different behavior. The genetic information carried by HIV is not unusual for retroviruses; it contains no gene different enough from the genes of other retroviruses to be a possible "AIDS gene." In addition, HIV uses all of its genetic information when it first infects, rather than saving some to be used years later. In other words, there is no conceivable reason HIV should cause AIDS 10 years after infection, rather than early on when it is unchecked by the immune system.

Bialy also points out the misinterpretations made of animal models. Simian (monkey) AIDS, for example, does not actually resemble human AIDS. The animals do not develop a wide spectrum of diseases, not do they suffer any conditions even remotely similar to Kaposi's sarcoma or dementia. There is no long latent period between infection by Simian Immunodeficiency Virus and the development of sickness. The animals become sick within days or weeks after infection, or not at all. The sickness sometimes developed in these animals by such viruses resembles more the flu-like

conditions occasionally observed in humans shortly after infection by HIV. Such viruses cause fatal animal only when they are present in large amounts, and only in highly susceptible inbred animals kept in laboratory conditions.

Although a widespread belief holds that certain retroviruses cause other fatal conditions after long latent periods in sheep, goats, and horses, these viruses are actually found in the majority of healthy animals. Only a tiny number of animals develop such diseases, throwing into doubt the roles of these viruses.

HIV without AIDS

Arguments used most often in defense of the HIV hypothesis concern the field of epidemiology, the study of how diseases spread.

The most common method used in epidemiology today in searching for the cause of a disease is to find correlations between phenomena and their possible causes. The only scientifically conclusive method is the controlled study, in which two sets of people are matched for every potentially important factor except for the possible cause, and the two sets are then compared to see whether one group is more likely to contract the disease. Only uncontrolled epidemiology has been cited to support the HIV hypothesis. However, the opponents of the virus-AIDS hypothesis point to a number of paradoxes in this uncontrolled epidemiology.

Evidence increasingly indicates that large number of people infected with HIV, probably the majority, will never develop AIDS. In 1986, the CDC estimated the extent of HIV infection to range from 1 million to 1.5 million in the United States. The figure was changed within the last few months to an ex post facto estimate of 750,000 HIV-positive Americans by 1986, with about one million today. This revision was based simply on back-calculation models, since fewer AIDS cases had occurred than expected, the CDC decided that fewer people must have been infected with HIV than was first estimated. About 130,000 Americans have been diagnosed with AIDS over the past decade, fewer than 15 percent of the newly estimate number of HIV-positive Americans.

AIDS appears to be levelling off now. Michael Fumento, author of "The Myth of Heterosexual AIDS," but not an opponent of the HIV hypotheses, has pointed out a slowing of AIDS diagnoses by late 1987. A study published in the March 16, 1990, issue of the Journal of the American Medical Association, based on mathematical modeling of the growth of AIDS, has concluded that this syndrome began to level off in 1988.

These trends create a tremendous gap between the large number of people estimated to be infected with HIV and the relatively few developing sickness. To accommodate this gap, the CDC has steadily increased its estimate of the latent period between HIV

infection and diagnosis of AIDS from three or four years to about 10 years at present. Roughly, for every year that passes, an additional year is added to this latent period.

Africa's Non-Epidemic

The situation in Africa is even more puzzling and casts further doubt on the HIV hypothesis. Most of the media publicity in America on AIDS in Africa is based on the large extent of HIV infection, not on the extent of AIDS cases themselves. Nonetheless, although HIV infection appears to be extremely widespread, present in many areas in 10 to 15 percent of the population, the total number of AIDS cases so far reported in the entire continent of Africa amounts to merely 41,000. Proponents of the HIV hypothesis often try to argue that this low figure is the result of under reporting of AIDS cases. Even in Uganda, however, which has a reputation for conscientious reporting, 800,000 people are HIV positive, but only 10,000 are reported to have died of AIDS. A paper and accompanying editorial in the July 25, 1987, issue of the British medical journal "The Lancet" argued that AIDS in Africa is actually not a major epidemic; the paper was written by a doctor from Cromwell Hospital in London, Felix Konotey-Ahulu, who had just returned from an extensive investigative tour of the areas of Africa with the most AIDS cases.

The story in Haiti is similar. Only 2,3000 AIDS cases have been reported during the past decade in a country where HIV infection is thought to be rampant. Even if this number is underreported, the prevalence of AIDS is much lower than would be predicted by the HIV hypotheses.

No controlled studies have been conducted to determine whether HIV causes AIDS. However, one reasonably controlled study of 19 hemophiliacs was published in the January 1989 issue of the "Journal of Allergy and Clinical Immunology," in which the patients with HIV antibodies were compared to those without them. The researchers found no difference in immune deficiency between the two groups, though the sample size was too small to draw firm conclusions.

Accidental infection of humans by HIV, by means other than specific risk behavior, is especially revealing. Some 19 health care workers in the United States have been presumed infected with HIV by accidental needlestick or other medical injuries, based on the inability to identify any other modes of transmission in their cases. One of these cases was reported in 1988 as having developed AIDS, but that diagnosis was changed shortly after that patient recovered spontaneously. Now the CDC claims that two of these workers have converted to AIDS, but has failed to publish any data confirming this claim.

Thus, there are still no confirmed cases of AIDS among health workers after accidental infection with HIV, whereas the HIV hypothesis would predict conversion to AIDS of most of these infected health care workers by this time.

AIDS Diseases without HIV

A critical question about the role of HIV is how it is associated with the various AIDS diseases. One widespread impression holds that many of the AIDS diseases were extremely rare before 1980, and only began reappearing with the presumed introduction of HIV. In reality, not only have all 25 of these AIDS conditions existed for decades at a low level in the population, but HIV-free instances of the same diseases are still being diagnosed today. These diseases are actually increasing in parallel with their HIV-associated counterparts. A letter by CDC researchers in the January 20 issue of "The Lancet" reports the existence of male homosexuals with Kaposi's sarcoma but without HIV. Robert Root-Bernstein, MacArthur fellow and associate professor of physiology at Michigan State University, also published a paper in "The Lancet", of April 25, in which he reviewed the existing literature on the incidence of Kaposi's prior to AIDS. Since the first recognition of this condition in 1872, a number of cases have been reported each year in the United States and Europe. Many of these were in people under 50 years of age, or even in children-not just in older men, as originally thought. A number of these cases were fatal. Some cases were associated with blood transfusions or with pneumonia, although many were apparently not connected with any other conditions. Root-Bernstein concluded that during the 1970's approximately 100 U. S. cases of Kaposi's per year could have been diagnosed as AIDS. However, Kaposi's sarcoma was not a disease reportable to medical officials before AIDS, and these cases were therefore not recognized. Kaposi's was only noticed once it was found clustered in young homosexual men in 1980-81.

A similar situation has existed for *P. carinii* pneumonia. First recognized in 1911, these conditions may affect a surprisingly large percentage of the population; a 1973 study of Europeans found that between 1 and 10 percent of the population had postmortem evidence of this pneumonia. Often *P. carinii* pneumonia has been associated with hemophilia, tuberculosis, cytomegalovirus infections, venereal diseases, and malnutrition. Patients receiving transplants, heavy antibiotic therapy, or chemotherapy against cancer have also high rates of this condition. Most cases have been associated with malnutrition rather than with underlying infectious diseases. Before the 1980's, this disease was usually diagnosed only by autopsy; this, combined with the availability of drugs to treat *P. carinii* pneumonia in the 1970's, caused low reporting of this not uncommon disease. *P. carinii* pneumonia had also probably been previously misdiagnosed as other types of pneumonia. Easier diagnosis and clustering of the disease among active homosexuals, played a large part in focusing renewed attention on this condition with the beginning of AIDS.

Root-Bernstein has collected similar data on cryptococcosis, cytomegalovirus disease, and progressive multifocal leukoencephalopathy prior to the AIDS epidemic.

Strange Distribution of AIDS Diseases

Gordon Stewart, emeritus professor of public health at the University of Glasgow, considers the continued restriction of AIDS to very selective risk group even 10 years after AIDS was first recognized to be one of the greatest epidemiological weaknesses of the HIV hypothesis. The distributions of AIDS diseases and HIV infection are also inconsistent with each other.

Although AIDS in Africa is evenly distributed between males and females, over 90 percent of AIDS cases in the United States continue to be diagnosed in males. This proportion has not changed since AIDS was first defined. The paradox is emphasized by a study in the April 18 issue of the "Journal of the American Medical Association" which examined over one million teen-aged applicants to the military between 1985 and 1989. In the most extensive study of its kind yet published, the proportion of males with antibodies against HIV was found to be identical to the proportion of infected females, although AIDS is diagnosed in four times as many males as females for that age bracket. In short, males with HIV are more likely than females to develop AIDS, even though they have the same virus.

The annual rates at which HIV-positive people develop conditions diagnosed as AIDS varies tremendously between different risk groups. The annual rate among HIV-positive Americans engaging in risk behavior or who have hemophilia varies from 2 to 25 percent. Though three-quarters of American hemophiliacs are HIV-positive, only 6 percent have been diagnosed with AIDS over the past decade.

The total number of AIDS diagnosed among American infants receiving blood transfusions continues to increase, with 40 new cases in 1989, even after the drastic reduction in HIV transmission through the blood supply four years ago; this is incompatible with the two-year latent period AIDS is claimed to have in those children.

Health care workers, who might be thought to have a greater than average risk of contracting HIV, present another anomaly: three-quarters are female, yet over 90 percent of these workers diagnosed with AIDS are male. Stranger still, the CDC reports that 95 percent of them fall into the same risk groups that 95 percent of all other AIDS cases do.

In addition to the inconsistent distributions of AIDS as a syndrome, specific AIDS diseases develop largely within specific risk groups. This occurs in spite of all these groups being infected by the same virus.

For example, Kaposi's sarcoma in the United States is almost exclusively found in male homosexuals. Kaposi's is further distinguished by the fact that it is the only one of the AIDS conditions that has been declining for several years, while the others continue to increase. *P. carinii* pneumonia, on the other hand, has been diagnosed in an increasing proportion of the total number of U. S. AIDS cases. The AIDS diseases seen among infants tend to be the typical pediatric diseases, including tuberculosis,

pneumonias, and various bacterial infections. In Africa, the predominant AIDS disease is a wasting syndrome, often called "slim disease." While this condition is seen among some U. S. AIDS patients, it is not nearly as synonymous with AIDS.

Montagnier's Startling Admission

Some recent developments have begun to signal the beginnings of retreat by the proponents of the HIV hypothesis. A startling admission by Luc Montagnier, the French discoverer of HIV, was published in the March 1990 issue of "Research in Virology." Montagnier demonstrated conclusively that HIV is not able to kill T cells in culture dishes, contrary to previous arguments raised by the supporters of the HIV hypothesis.

In that same paper, Montagnier first suggested that HIV alone may not cause disease; he offered the possibility of some unidentified bacterium also being involved. He has since endorsed the suggestion of Shyh-Ching Lo, of the U. S. Armed Forces Institute of Pathology, who argued in the May 11, 1990, issue of "Science" that his recently discovered bacterium *Mycoplasma incognitus*, might play a role in AIDS. Montagnier now holds that HIV and the bacterium together cause the disease. Any mycoplasma, however, would face many of the same difficulties as HIV; it would not cause the full set of AIDS diseases, it would have already spread AIDS into the general population, and most of all, this particular one is not different enough from other mycoplasmas to account for such unusual abilities. Mycoplasmas are reasonably common germs, existing throughout the population, and are responsible for about one-third of the mild pneumonias sometimes developed by humans. HIV and *M. incognitus* may soon be branded as co-factors in causing AIDS, but this would simply be an invention to try to fill the gaps in any theory that blames the AIDS diseases on the microbe.

Perhaps the most spectacular recent study on AIDS was published in "The Lancet" of January 20, 1990. Researchers at the CDC concluded that Kaposi's sarcoma is not caused by HIV after all. The bases for this conclusion were simply that Kaposi's is not observed to be equally distributed among the AIDS risk groups, and that HIV-free Kaposi's cases are diagnosed in U. S. homosexuals, arguments previously raised by the senior author of this article (Peter Duesberg). While the basic data used in that paper are not new, this startling admission by CDC epidemiologists marks the first time HIV has been officially questioned as the cause of any AIDS disease, although the CDC has still not removed Kaposi's from the disease listing in the AIDS definition. Nevertheless, the publication of this paper may have opened the door for more inquiry of whether HIV is responsible for other AIDS diseases, and whether those diseases truly belong together as a single syndrome.

The Risk-AIDS Hypothesis

If a number of scientists and medical physicians do not believe HIV is likely to play any significant role in AIDS, what do they consider the true cause to be? For the most part, the alternative views of AIDS can be grouped together as the "risk hypothesis" of AIDS-that the AIDS diseases are entirely separate conditions caused by a variety of factors, most of which have in common only that they involve risk behavior. This view does not see AIDS as being a transmissible condition at all.

Nevertheless, a risk hypothesis must explain the recent increases in the various AIDS diseases, and why these have all been concentrated in particular risk groups. During at least the past decade, the incidence of these 25 conventional diseases has increased dramatically among groups in which they were previously rare.

Kaposi's sarcoma may actually be the most clearly understandable of the AIDS conditions. As noted above, it has existed at low levels in the population for as long as it has been recognized. Undoubtedly, various unidentified factors play roles in bringing on this condition. But the relatively recent clustering of Kaposi's in homosexuals may be due to their group-specific use of nitrite inhalants, or "poppers." These aphrodisiac drugs became popular in the active homosexual community during the 1970's. Use of these inhalants began declining after they were suggested as a possible cause of AIDS, and that behavior change has been followed by a corresponding decline in the incidence of Kaposi's. Early tests on animals also implicated these inhalants in Kaposi's. In fact, this evidence of the dangers of nitrite inhalants prompted Congress to ban the nonprescription use of these drugs in 1988. While these nitrites were officially dropped from consideration as a cause of AIDS because they were not associated with all the AIDS diseases, they should be strongly reconsidered as agents specific to Kaposi's sarcoma.

Certain other diseases on the AIDS list, those not necessarily resulting from immune problems appear to have better explanations than HIV. Dementia is most likely the result of extensive use of psychoactive recreational drugs, and/or undiagnosed syphilis; increased sexual activity appears to have led to renewed epidemics of venereal diseases, including syphilis, which is difficult to test for. Wasting syndrome found most heavily in African AIDS patients, is an endemic condition produced by the extremes of malnutrition and the lack of sanitation on most of that continent; the rise in recent years of wars and totalitarian regimes has served only to worsen conditions. African sickness was included in the AIDS epidemic merely because HIV had already been implicated in sickness in the industrial world and this same virus could be found endemically in Africa.

Most of the AIDS diseases involve some degree of immune suppression. This is a condition produced by many different factors. Drug use, particularly of heroin, is one. Recreational drugs are commonly used by active homosexuals in the bath houses. Alcohol, heroin, cocaine, marijuana, valium, and amphetamines can all be found as part of the life histories of many AIDS patients. When combined with regular and

prolonged malnutrition, as is done with many active homosexuals and with heroin addicts, this can lead to complete immune collapse. Antibiotics, when used heavily or over long periods, also wear down the immune system. Active homosexuals have been among the heaviest users, often taking large amounts of tetracycline and other antibiotics each evening before entering the bath houses.

Joseph Sonnabend, a New York physician who founded the journal "AIDS Research" in 1983, has pointed out that repeated, constant infections may eventually overload the immune system, causing its failure; still worse are simultaneous infections by two or more diseases. "Fast track" homosexuals have generally experienced repeated bouts not only of a full spectrum of venereal diseases, but also of all forms of hepatitis, cytomegalovirus infection, Epstein-Barr virus infection, and various protozoan infections. They have commonly developed multiple infections, usually repeatedly.

Procedures traumatic to the body can play a major role in weakening the immune system. Almost exclusive to the homosexual community is the practice of fisting, which like anal intercourse is often damaging to the rectum. This damage provides access for many infectious agents into the bloodstream.

Many surgeries are immunosuppressive because of the trauma itself, or due to the anesthesia, or from immunosuppressive chemotherapy, or even from the transfused blood itself. In fact, immune suppression is proportional to the volume of transfused blood. These problems may explain the occurrence of AIDS diseases among blood transfusion recipients; with or without HIV infection, half of all such recipients do not survive their first year after transfusion.

Hemophiliac and Pediatric Cases

The question naturally arises as to why people outside these behavioral health-risk groups, including hemophiliacs and children, would develop some of the AIDS diseases. The answers lie in the risk factors too rarely reported to the public.

Hemophilia has always been a fatal condition. This has only been partly alleviated by recent medical advances. Not only are blood transfusions still frequently needed, but blood clotting factors used by hemophiliacs today are somewhat immunosuppressive themselves. Interestingly, the controlled epidemiological study of hemophiliacs, cited above, found evidence to support the idea that hemophilia may be an inherently immune-deficient condition on its own. In the case of Ryan White, now often cited as an example of an AIDS death, the Hemophilia Foundation of Indiana has confirmed that his death was due to such complications as liver failure and internal bleeding, conditions that typically result from hemophilia itself. Indeed, White already had a severe case of hemophilia, ultimately requiring clotting factor therapy every day. He also underwent daily AZT therapy, the dangers of which are reviewed below.

Infants diagnosed as having AIDS have developed their conditions due to combinations of most of the above risk factors. Published CDC data shows that some 95 percent of these babies are born to mothers who are confirmed drug addicts and/or sexual partners of IV drug users (frequently a code word for prostitutes), or the babies are themselves hemophiliacs or recipients of blood transfusions. The risk behavior of many of their mothers has reached these victims, but their conditions are renamed AIDS when in the presence of antibodies against HIV.

Finally, those few AIDS cases in which no risk factors exist are due to the clinical definition of AIDS. Having contracted, for whatever reason, one or more diseases on the AIDS list in the presence of antibodies against HIV, these people are diagnosed as having this syndrome. In many instances, this means the patients are not given sufficient conventional therapies for the conventional disease, but are instead treated with the drug AZT.

Behavioral Changes in the '70s

Both the AIDS diseases and the risk factors causing them have increased before and during the same period that AIDS has been officially defined. Although homosexuality is older than recorded history, the "gay liberation" movement in 1969 began a wave of increasing activity by many homosexuals. Bath houses were opened in major cities, where both sexual promiscuity and drug use exploded. The number of sexual contacts per individual jumped to hundreds or thousands over only a few years, and the diseases discussed above exploded in frequency at the same time. Chronic disease epidemics actually became the medical hallmark of homosexuals in New York and San Francisco. The practice of fisting appears to have begun in the early 1970's, along with the use of nitrite inhalants.

Drug use among other groups also exploded beginning in the 1960s, with the use of such substances as heroin and cocaine having multiplied several times since then; the National Narcotics Intelligence Consumers Committee reports that the consumption of cocaine alone increased five-fold from 1978 to 1988. During this same period, continually greater volumes of blood have been used for increasingly complex surgical operations. Given the dramatic increases in these risk factors in precisely the groups developing AIDS, the appearance of young male homosexuals with multiple diseases in 1980 and 1981 should never have been a surprise; indeed, the first five homosexuals diagnosed with this syndrome in 1981 were all heavy users of nitrite inhalants, an indicator of the risk behavior practiced by all of the early AIDS cases.

The risk hypothesis explains the many paradoxes of AIDS and HIV. By considering AIDS not a single infectious disease or syndrome, but rather a set of separate conditions with different risk factors contributing to each case, it resolves the difficulties of the HIV hypotheses:

- why Koch's postulates cannot be met for HIV;

- the long and inconsistent latent periods between HIV infection and AIDS;
- why HIV would be able to devastate the immune system while never infecting more than a tiny fraction of its cells;
- the fact that HIV is so different enough from other retroviruses to account for its supposedly different behavior;
- the predominance of males in AIDS cases in the U.S., which is consistent with the predominance of males among heavy drug abusers;
- the presence of AIDS-like diseases without HIV;
- the saturation of the number of AIDS cases at levels far below the number of HIV infections;
- the enormous diversity, and risk-group specificity, of the different AIDS diseases; and
- why controlled studies, though few and incomplete, show no difference in sickness between people with HIV and people without.

Instead the risk hypothesis suggests that AIDS diseases can be attributed to the explosion in drug use and multiple infections associated with sexual promiscuity among certain sectors of the population. Hemophilia is a separate risk factor. The risk hypothesis also accounts for the rough correlation between HIV infection and the development of various diseases; because HIV is difficult to transmit, it has naturally become a surrogate marker for risk behavior. Those people with the most risks are often the ones most likely to spread such an inactive microbe.

AZT Toxicity

If the virus-AIDS hypothesis is wrong and the risk hypothesis correct, several important conclusions follow. The most urgent of these concerns the current therapy officially approved for AIDS, the drug zidovudine (AZT). The hope is that AZT, by preventing the copying of DNA within cells, will prevent the multiplication of HIV in the host. However, by doing this the drug also kills all actively growing cells in the patient; chief among these are the cells of the immune system. This becomes deadly in light of the risk-AIDS hypothesis; inhibiting HIV would accomplish nothing, while AZT actually produces the very immune suppression it is supposed to prevent. The effectiveness of AZT at this task is demonstrated by the fact that it was first designed in the 1960s for the purpose of fighting immune system cancers, by killing the rapidly multiplying, cancerous immune cells; AZT was finally shelved because treated leukemic mice in laboratory studies died as quickly as those not given AZT. Some symptoms of AZT toxicity, such as muscle disease and anemia, resemble those of full-blown AIDS cases.

Two clinical studies have been published claiming effectiveness of AZT in slowing the progression of AIDS, but the studies were both terminated as soon as different results could be found between the treated and untreated groups. Some medical researchers have become skeptical of these studies, in part because the double-blind protocol had broken down: partly due to the immediate toxicity of AZT, both the patients and the doctors had already found out who was getting AZT and who was receiving the placebo. Despite these invalidating faults, the studies have been

published anyway and AZT was quickly approved by the Food and Drug Administration after the first of these. Interestingly, a recent study by the Veterans Administration, cited in the March 23/30, 1990, issue of the "Journal of the American Medical Association," has found no difference in longer-term death rates between patients treated with AZT and those given a placebo. Some British and French researchers have also expressed doubt about AZT's effectiveness, as mentioned in the same JAMA article.

Despite its toxicity, most medical doctors currently using the drug believe it to have some short-term benefits in alleviating symptoms of AIDS diseases. This may be for two reasons. Because AZT is a non-specific killer of dividing cells, it is likely to kill cancer cells and parasitic bacteria at the same time that it kills the immune system cells of the host; however, while AZT may temporarily fight the opportunistic diseases, its depletion of the immune system and other crucial cells makes it more difficult for the patient to fight off disease later. The other reason for an apparent benefit of AZT lies in the observation that many patients on this drug experience short-term increases in their immune system cells. This, however, is a temporary pseudo-benefit; when the body is initially exposed to any toxin that depletes its blood cells, a compensatory reaction begins to produce large quantities of new blood cells to replace the poisoned ones. The temporary increase in all blood cells, including immune cells, is likely to be the result of the body's reaction to AZT, which later proves futile in the continued presence of the drug.

Federal agencies are not promoting and even financing the application of this drug not only for patients with full-blown AIDS, but now even for people without symptoms, including pregnant mothers and children; some 50,000 patients worldwide are now undergoing treatment. Many other AIDS therapies now under consideration, such as the new drug ddi (dideoxyinosine), operate in the same basic way. Even if the HIV hypothesis were correct, this approach would be irrational, since HIV is inactive by the time AZT is administered.

Misguided Programs

The risk-AIDS hypothesis also calls into question the direction of current AIDS education programs. Condoms and sterile needles may limit the transmission of hepatitis and other infectious diseases, but they do not guard against the immunosuppressive effects of heroine, cocaine and overuse of antibiotics. Therefore education programs that promote condoms and sterile needles without emphasizing the danger of the risk behavior itself-particularly drug-taking-may inadvertently encourage spread of the disease.

With respect to AIDS itself, the risk hypothesis should reduce the fear of HIV infection. Those people not practicing risk behavior nor subject to severe medical problems need not worry about AIDS. There is no need to trace the sexual partners of HIV positive, nor to exclude from the country those who have been infected by the virus. Neither policemen nor health workers nor school classmates need to be concerned about contracting HIV from antibody-positive people. Legitimate concerns will still remain about tuberculosis, hepatitis, and other contagious diseases often associated with AIDS. But infection by HIV would not be significant in itself.

For those people who do develop AIDS-like diseases, regardless of infection by HIV, several steps would be advisable. The use of AZT and similar antiviral-specific drugs should be avoided, while conventional therapies directed against the specific diseases might be considered. Such therapies have previously included drugs for each illness, such as pentamidine for *P. carinii* pneumonia, as well as limited use of antibiotics and vaccinations; but none of these particular approaches is necessarily endorsed by the authors of this article. Doctors should treat each condition separately, and should seek to determine the underlying causes in each individual's case; patients should insist on this approach from their doctors. But perhaps the most useful action for any such patient to take would be the ending of any risk behavior. Unfortunately, no studies have been done, but anecdotal case descriptions exist of AIDS patients who recover after ending drug use, sexual promiscuity, and prophylactic antibiotic use, and who improve their nutritional status.

Significantly, a June 10, 1990, "Parade" magazine survey of 13 AIDS survivors who have lived more than five years since their diagnosis showed a majority rejecting AZT. "It's incredible, isn't it," said one survivor, Mike Leonard, "that the drug designed to save you can also kill you."

Public policy questions raised by the risk hypothesis mostly concern federal funding patterns. The HIV hypothesis has not yet saved a single life, despite federal spending of \$3 billion per year. In place of the current research funding policy, which exclusively finances HIV-related AIDS research, studies on the causes of the separate AIDS-diseases and their appropriate therapies might be conducted. The rest of the \$3 billion that will be spent on the virus-AIDS hypothesis in the next fiscal year might then be saved and returned to the taxpayers, before it can do more harm. *

DEPARTMENT OF HEALTH & HUMAN SERVICES

Office of the Secretary Washington D.C.

April 28, 1987

MEDIA ALERT

An NCI grantee scientist, Dr. Peter Duesberg of California/Berkeley, has published a paper in a scientific journal which concludes that the HTLV-III/HIV virus identified by Dr. Gallo and Dr. Montagnier is not the cause of AIDS and that the disease is caused by "a still unidentified agent" which may not even be a virus.

Inexplicably, the paper was published in the March 1 addition of Cancer Research, and gives a non-specific credit to Dr. Robert Gallo and others, but nobody within the Department or the news media seems to have been aware of it until it was disclosed Monday, 4/27, by a gay publication in New York City.

Dr. Duesberg has been an NCI grantee doing research in retroviruses and oncogenes for 17 years and is highly regarded. He is the recipient of an "outstanding researcher" award from the Department. The article apparently went through the normal pre-publication process and should have been flagged at NIH. Failing that, it should have caused a splash on publication nearly two months ago.

Playwright, gay activist and Department critic Larry Kramer is currently bringing it to the attention of the media, but it really hasn't taken off yet. I know for instance he has talked to Tom Brokaw about it. There has been one call to CDC from Newsday and none to the press office so far.

This obviously has the potential to raise a lot of controversy (if this isn't the virus, how do we know the blood supply is safe? How do we know anything about transmission? How could you all be so stupid and why should we ever believe you again?) and we need to be prepared to respond. I have already asked NIH public affairs to start digging into this.

Chuck Kline

cc:

- The Secretary
- The Under Secretary
- Chief of Staff
- Assistant Secretary for Health
- Surgeon General
- Assistant Secretary for Public Affairs
- The White House

