

Southern California

NURSING

News, Continuing Education and Career Guide

NEWS

Health experts share research findings at AIDS Summit

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The June International Conference on AIDS held in Stockholm, Sweden was not characterized by any fantastic breakthroughs. A total of 3,100 abstracts were accepted for presentation, and 140 countries were represented by participants. As of the 1st of June 1988, a total of 96,433 cases of AIDS have been reported.

Compared with the last international AIDS conference (held in Washington), there was less of a Patients with AIDS (PWA) presence at Stockholm and less camaraderie among the partici-



Left to right: Drs. Luc Montagnier, Genevieve M. Clavreul, and Robert Gallo

pants (perhaps due to the more scattered hotels and the conference center being outside of the city). In addition, gay activists perceived a level of homophobia that had not been present at previous conferences. However, the scientific community demonstrated a renewed commitment to meet the challenge of the AIDS retrovirus. For this writer, the most rewarding part of the conference was the informal, unplanned evening networking, where scientists willingly shared the results of their research. The collaboration between Drs. Gallo and Montagnier and other leading scientists

was notable. As was stated by Dr. Luc Montagnier, "In implementing programs, we are learning lessons that need to be learned. We are seeing the inadequacies of existing systems. AIDS is a danger, but it is also an opportunity . . . to see where in the past we have failed, to gain new insight into circumstances, to find the way to succeed." Dr. Robert Gallo stated, "While we know little about the origin of the virus, we know even less about the pathogenesis and practically nothing about the therapy of the disease. And yet the pressure is on us to

See AIDS Update on page

AIDS Update

WIN-AIDS creates hi-tech network for linking researchers, clinicians

Continued from page 1
move in this direction."

Primary concerns addressed at the conference included the spread of AIDS into the heterosexual community via IV drug users and bisexual males, as evidenced by far more studies focusing on AIDS in women and infants; the neurological effects of AIDS; and extreme emphasis on AIDS and minorities and upon prevention.

The situation in Africa continues to be a serious one. Dr. Bosenge N'Galy of the Department of Public Health in Zaire described the distribution of HIV-1 and

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the emerging epidemiology of HIV-2 in his country. Each country in Africa appears to have a distinct epidemiological history. For example in Zaire the data shows that women had a 50% higher rate of infection than men. The data also demonstrates the evidence of potential spread of HIV-1 amongst prostitutes and persons with tuberculosis. Dr. N'Galy presented several hypotheses to explain why Zaire, in particular, had the highest rate of heterosexual transmission of AIDS in contrast with other developing countries. The higher rates of transmission were attributed to:

- the higher incidence of promiscuity
- the relatively common practice of anal intercourse in Africa
- a high prevalence of sexually transmitted diseases in Africa which increases the risk of viral susceptibility.

The impact of AIDS in Europe is steadily growing. Dr. Jean Baptiste Brunet, of Hospital Claude Bernard in Paris, stated that in December 1989, the impact of AIDS will be as great as it is in the U.S. today. Even if the projected 56,400 cases for 1989 are overestimated, as of March 1988, 12,231 cases of AIDS were reported from 30 European countries. Countries most widely affected are Switzerland, France, and Denmark. This increase in reported AIDS cases has been predominately among drug users.

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—Dr. Luc Montagnier

Early diagnoses is crucial for disease prevention. Dr. Robert Redfield of Walter Reed Army Hospital shared survey statistics which revealed that over 5,000 military personnel had been given an early diagnosis. It is considered standard practice in medicine to evaluate infected spouses. The correlation between the time of diagnosis and the risk of the spouse being infected is dramatic: 50% risk of infection as opposed to 15% risk if the diagnosis was made at Stage 6 versus Stage 1 (on the Walter Reed scale). Results from this study definitely indicate that *early diagnosis* should be our top priority in providing quality care.

Promising drug therapies that were discussed included AZT (presently the most effective drug, although its high toxicity was noted), DDC (now in trials at the National Institute of Health), dextyran sulfate (now in trials at S.F. General Hospital), and aerosolized pentamidine

(which appears effective in both treating and preventing PCP). More disturbing new studies indicate the probability that 99% of those now seropositive will, given enough time, eventually develop ARC and/or AIDS. In addition, it was reported that the macrophage cells are capable of harboring the AIDS retrovirus for long periods of time before attacking lymphocytes, thus giving a false negative on the antibody test. A new test will be commercially available soon to test the presence of the virus in the macrophage.

AZT, although the most effective drug therapy to date, has its drawbacks. Due to severe toxic side-effects, it has been suggested that AZT be administered less frequently. Dr. Markus Vogt from the Department of Medicine at the University Hospital in Zurich, Switzerland has conducted experiments in vitro in which infected cells were exposed to AZT for one hour once daily or at pulsed intervals. The results were the same in both experiments, both for the reduction in viral replication and toxicity levels. Dr. Vogt, therefore, suggests that AZT dosages can be reduced without reducing its benefits. Also Dr. Vogt stated that AZT doesn't seem to be as effective against HIV-2.

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—Robert C. Gallo, MD

As is known, the first step of HIV infection is the attachment to the target cell receptor. Dextran Sulphate, which has

been administered orally to humans for more than 20 years as an anticoagulant or antilipemic agent, can also block the binding of HIV-1 virion to various target T cells. The implications are both clinical and theoretical for the development of new anti-HIV drugs. H. Mitsuya and his colleagues have found that dextran sulphate exerts a potent inhibitory effect against HIV-1 in vitro at levels that are acceptable to humans. HIV-2 was also suppressed in vitro by dextran sulphate.

A field of interest for AIDS research has been that of *peptide synthesis*. Since their discovery in the 1960's by Merrifield, there has been continuous improvement in the synthesis techniques so that, today, they can be synthesized reliably with the help of automated instrumentation. Synthetic peptides compare favorably with virus proteins which have been isolated and purified from a culture or genetically engineered polypeptides. The most obvious advantage is that synthetic peptides can be produced (1) in very large quantities, (2) with very high purity, and (3) with excellent reproducibility.

Synthetic peptides are remarkably specific tools, and therein lies the benefits as an antigen to detect antibodies directed against a specific epitope to elicit antibodies against well-defined regions of the proteins from which they originate. And lastly, they are not hazardous to work with.

Promising vaccines that were discussed include three different theories. One utilizing a killed virus as in the vaccine proposed by Professor Jonas Salk who is a proponent of the control of AIDS by immunizing seropositive individuals. The second theory proposed was one utilizing the entire envelope such as the vaccine of Zagury, Lurhuma and Salaun. The third theory discussed is the use of viral subunit of the virus envelope: GP 160, or portion of subunit GP 1220 or GP 41. But according to the scientists, we are still far from the miracle vaccine.

The World Immunological Network Project Foundation (WINPF) announced during the conference the start-up of a worldwide computerized data network and hotline, known as WIN-AIDS. WIN-AIDS connects researchers and clinicians using electronic mail, specific computer software programs and data bases. The IBM Corporation provides technical support to WIN-AIDS.

In its initial phase, WIN-AIDS involves nearly 50 researchers and clinicians from 12 countries: Africa, Austria, Belgium, Brazil, England, Finland, France, Italy, Japan, Switzerland, the United States and West Germany. The purpose of WIN-AIDS is to provide rapid and widespread dissemination of information concerning AIDS programs. In the event of a crisis, or when a significant finding occurs, all WIN-AIDS subscribers will quickly receive the information. WIN-AIDS is technologically possible through linkage with established computer networks such as EARN (Europe, Israel, Africa), BITNET United States, Mexico, Brazil, Chile, Japan, Taiwan, Singapore), NETNORTH (Canada), and JANET (England). Scientists and physicians treating AIDS patients will be able to exchange information without leaving their laboratories or hospitals. Time and money spent on travel to and from costly seminars, where the most current information is often not available, will be saved.

Participants in the WIN-AIDS network include the acknowledged co-discoverers of the AIDS virus, Luc Montagnier, MD, of the Institute Pasteur in Paris, France, and Robert C. Gallo, MD, of the U.S. National Institutes of Health. According to Gallo, "Of all the issues surrounding the AIDS health crisis, few are of more central concern to the scientific community than the challenge of coordinating and disseminating the vast amount of research information that is generated. As scientists worldwide work around the clock in their laboratories, they are often frustrated by the inability to communicate freely with their colleagues in other countries or even adjacent institutions. Scientists are often unaware of what others are doing, so they cannot ask questions or seek to compare, cross-validate or collaborate."

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Another WINPF project is the World Immunological Network (WIN), which has received significant funding from HSN and DuPont for its start-up costs. The satellite delivered TV network allows international scientific participation in conferences and round tables dealing specifically with immunological disorders. WIN will cover topics of importance to fundamental researchers, medical specialists, general practitioners, nursing and allied health personnel, as well as individuals with AIDS and their families.

There was a notable lack of RN participation in terms of abstracts presented. An RN caucus drew less than 20 participants, many of whom were from San Francisco. A recommendation worthy of vigorous follow-up was made to include RN representation on next year's conference organizing board. Although to date nurses have not developed a leading role in the AIDS epidemic, they are in an excellent position to do so in as much as they generally have more contact with the patient than does the physician and other members of the health team.

The WIN Foundation is one of the means by which nurses could begin assuming a more prominent role, including RN representation on the organizing board of next year's international AIDS conference. WIN is currently developing its nursing level. In addition, WIN would be pleased to provide further specific information on abstracts presented at the Stockholm conference. (Please contact Dr. Clavreul at 213-663-0088). ■

About the Author: See "Reporting from the Ranks" on page 4.