Research roundup

HIV/AIDS study results released recently offer what amounts to a fine tuning of current knowledge

▼

by Bob Roehr

A series of articles and presentations at meetings in early May has deepened our understanding of HIV but offers no significant departure from what has been known for months or years. The knowledge will have an impact on developing therapies and preventative vaccines, but will not immediately affect existing standards of care.

Three articles in the current issue of *Nature* looked at the effect of protease inhibitor-based combination therapy in reducing levels of HIV in blood and tissue. Drs. David Ho and Alan Perelson demonstrated a two-stage pattern of reduction of HIV levels. They theorized that the level of infection could be reduced to zero in 2.3 to 3.1 years. Dr. Ashley Haase showed that HIV activity in the blood mirrors that in tissue. The data from both studies had been presented earlier at meetings but was only now being published.

More troubling news came from Tae-Wook Chun and Robert F. Siliciano of the Johns Hopkins School of Medicine. They showed that even after the live virus has been cleared, in a small percentage of cells fragments of HIV remain as both loose intra-cellular particles and sometimes as pieces integrated into cell DNA. While these shards do not have the capacity to reproduce and hence spread the virus, it is theoretically possible that under certain circumstances they may recombine or grow into complete virus to again challenge the body with HIV infection. This could create additional difficulty in achieving a "cure" for HIV.

Meanwhile, at the National Conference on Women and HIV, held in Pasadena, Calif., researchers from Pharmacia & Upjohn, the maker of delavirdine, reported that women on a combination therapy of delavirdine and AZT had a 1.8 higher trough concentration of the drugs in their blood than did men. There is no indication that men and women metabolize the drug differently. The researchers said the likely explanation is that women have a lower average body weight than men and so the same dose results in the higher concentration in their blood.

This points to the need for more research and clinical trials involving women, and also for greater attention to weight-specific dosing. It is possible that people of both genders are on regimens that provide a less than optimal concentration of drug throughout the body, while others are being exposed to higher than necessary doses and toxicities.

The National Cancer Institute held a meeting primarily for asking questions, not answering them. HIV researchers long have speculated that with success in extending survival, they would see the emergence of medical problems such as cancers, which take a longer time to develop. Some evidence does point to a higher probability of long-term HIV survivors developing certain types of cancer, but the extent of the problem is not clearly understood.

A major fault lies with data collection. Cancers are often not reported or correlated with HIV. The Centers for Disease Control, the nation's principal epidemiological data collection system, only records cancer if is part of the initial AIDS diagnosis. And its definition of AIDS—a CD4 count below 200 and certain opportunistic infections—has become of limited value. It indicates either that a person is unaware of his or her serostatus and shows up at an emergency room with an AIDS-defining illness, or that therapy has failed.

A further limitation is the time lag in the CDC's reporting of data. Its figures for 1995 were released only in November 1996. Finally, there are the changing dynamics in standards of care, of when and how to intervene, and with new therapies. All of these provide an increasingly complex and moving target which the CDC seems ill-equipped to measure. It makes projections for the future course of the epidemic even more difficult.