

UPDATES FROM US HEALTH AGENCIES

Recent activity in government and non-government agencies may affect readers of *Ethnicity & Disease* and other healthcare professionals working with ethnic minority and under-served populations. Below are some current items of interest.

FROM THE NATIONAL INSTITUTE ON DRUG ABUSE (NIDA)

Anti-HIV Drug “Cocktails” Equally Effective in Patients with or without History of Injection Drug Use

Highly active antiretroviral therapy (HAART) is extremely effective at slowing the progression of HIV infection to AIDS and extending the lives and improving the quality of life for those with HIV. However, some doctors have been reluctant to prescribe HAART to HIV-infected injection drug users because of concern that they may not fully benefit from the ther-

apy. A new study suggests that this is not the case: in their large, community-based study of HIV-infected people, injection drug users and people who did not inject drugs had equivalent survival rates seven years after initiating HAART.

The study included 3116 patients aged ≥ 18 years who were beginning HAART treatment for HIV, 915 of whom

were injection drug users. To compare the number of deaths between the two groups, the researchers took into account that accidental deaths are more common for injection drug users and excluded those deaths from their analyses. When accidental deaths were excluded, the mortality rate seven years after beginning HAART therapy was equivalent for injection drug users ($\approx 22\%$) and people who did not inject drugs ($\approx 19\%$). The authors plan to continue to follow the study participants to

gather data on longer-term survival.

“Hopefully, the findings from this study help address the commonly held assumption that HIV-positive injection drug users do not derive the full benefits of HIV treatment,” said Dr. Evan Wood, lead author of the study. “We have an ethical and human rights imperative to deliver HIV care to this population, not only to reduce illness and death, but also to possibly reduce the rate of new infections in the community.”

FROM THE NATIONAL INSTITUTE OF ARTHRITIS AND MUSCULOSKELETAL AND SKIN DISEASES (NIAMS) AND THE NATIONAL INSTITUTE OF ALLERGY AND INFECTIOUS DISEASES (NIAID)

Scientists Find a Novel Mechanism that Controls the Development of Autoimmunity

Scientists have found a mechanism in the immune systems of mice that can lead to the development of autoimmune disease when turned off. The findings shed light on the processes that lead to the development of autoimmunity and could also have implications for the development of drugs to increase the immune response

in diseases such as cancer and HIV.

The scientists studied immune system T cells—specifically the helper T cell, an immune system component that helps other cells fight infection. They focused on the protein furin, an enzyme that plays an important role in the functioning of T cells. Scientists have been limited in

their ability to study furin because other enzymes can perform some of the same functions. Furin is essential to life, so scientists have been unable to create a mouse without furin that lives past the embryo stage of development. Since the scientists were unable to see what a mouse without furin would look like, they collaborated with Belgian scientists to create a mouse without furin only in T cells. What they discovered was that

mice without furin in these cells developed systemic autoimmune disease.

The researchers found that deleting furin in helper T cells affected the functioning of two types of T cells, regulatory and effector T cells. The former cells, also called Tregs, promote immune tolerance to the body's own cells and tissues. On further examination, the researchers found that mice lacking furin in Tregs had lower levels of a

specific protein, transforming growth factor β 1 (TGF- β 1), which is produced by these cells and is needed to preserve immune tolerance. However, the researchers noted that effector T cells also produce TGF- β 1.

They found that furin is also needed for TGF- β 1 production by effector T cells, and the absence of furin in effectors makes these cells more aggressive in causing autoimmune disease and tissue damage.

“Inhibiting furin has been thought to reduce growth of malignant cells or to block infections by preventing essential activation of a pathogen,” said study author and NIAMS scientific director John J.

O’Shea, MD. “However, these results suggest that the development of drug interventions could have an unexpected side effect of increasing the risk of developing autoimmune disease.”

FROM THE NATIONAL INSTITUTE OF ALLERGY AND INFECTIOUS DISEASES (NIAID)

Adult Male Circumcision Reduces Risk of HIV Acquisition for at Least 3.5 Years

Medical circumcision of adult men continues to reduce the risk of acquiring HIV through heterosexual intercourse for at least 3.5 years. This finding recently emerged from an analysis of long-term follow-up data on Kenyan men who have participated in a large clinical trial assessing the protective value of adult male circumcision against HIV infection.

Among the 2784 Kenyan men who have participated in the study, some for as long as 3.5 years, 62 men, or 7.45%, acquired HIV while uncircumcised and only 27, or 2.6%, acquired HIV after circumcision. Nearly 1830 of the study participants are now circumcised. From the study data, circumcision is estimated to reduce a man’s risk of acquiring HIV by 64%.

The Kenyan study is a follow-up component of one of two clinical trials that were stopped in December 2006—before their scheduled completion—because of the overwhelming evidence that medically supervised circumcision can reduce a man’s risk of acquiring HIV through heterosexual intercourse. The trial in Kisumu, Kenya, of 2784 HIV-negative men showed a 53% reduction in HIV infection among circumcised men compared with uncircumcised

men, and a study of 4996 HIV-negative men in Rakai, Uganda, demonstrated a 48% reduction in HIV infection among circumcised men.

In response to the results of these studies and an earlier randomized trial conducted in Orange Farm, South Africa, the World Health Organization recommended in 2007 that male circumcision be recognized as an additional intervention to reduce the risk of heterosexually acquired HIV in men.