

## Circumcision, Gene Therapy and Novel Treatments Headline Tuesday Plenary

### *Male Circumcision: From Research to Practice*

Over 45 observational studies, three clinical trials and several biological studies all provide compelling evidence that male circumcision reduces HIV transmission from women to men by about 60 percent, according to the lead speaker on Tuesday's plenary panel, Professor Robert Bailey. Bailey is Professor of Epidemiology at the University of Illinois at Chicago and Research Associate at the Field Museum in Chicago. He has conducted circumcision-related studies in Uganda, Kenya, Malawi and Zambia, as well as in the US.

Today, about 30 percent of men in the world are circumcised, as are about 67 percent of men in Africa. In his remarks, Bailey will describe modelling estimates that show circumcision could help avert millions of new HIV infections in sub-Saharan Africa. In the highest prevalence areas, the impact would be greatest, and the intervention would be highly cost-effective.

### *Use of Gene Therapy to Develop HIV Treatments*

Gene therapy -- the treatment of disease by inhibiting deleterious genes to block disease processes -- represents a cutting-edge approach to developing treatments, according to Dr. John Rossi. Rossi is Professor of Molecular Biology and Dean of the Graduate School of Biological Sciences at City of Hope's Beckman Research Institute in the US.

Rossi will describe how his lab has identified three small gene inhibitors, based upon ribonucleic acids, or RNA, that inhibit HIV replication. His team is exploring the use of a virus vector to deliver DNA for these inhibitory RNAs to patients as an HIV treatment. This vector targets the virus itself, as well as a viral protein, and a site on cells that interacts with HIV. Together, this triple combination is a powerful inhibitory approach for HIV infection. The triple construct vector has gone through substantial pre-clinical testing, and Rossi and his team are now beginning two different human trials.

### *New Agents and Treatment Strategies*

The landscape of HIV clinical care is undergoing rapid change, as recent research has demonstrated important advances in existing treatments, as well as new classes of HIV medicines with novel mechanisms of action, according to Dr. Joseph Eron, Professor of Medicine in the Division of Infectious Diseases at the University of North Carolina at Chapel Hill School of Medicine.

Eron will discuss data on compounds in advanced clinical development, including integrase inhibitors, CCR-5 inhibitors and NNRTIs. Agents in each of these classes have provided superior benefit to patients with highly resistant HIV-1 when combined with the best available treatment, compared to the best available combinations alone. Eron will emphasize that these agents are most effective when combined with other active agents, and HIV-1 which is resistant to these new drugs may develop if viral replication is not fully suppressed.

## The Treatment Matrix

A special session on Monday addressed many treatment-related questions, including when to start antiretroviral therapy and with what drugs, when to change therapy and to what alternatives, and the impact of new clinical data on World Health Organization guidelines for treatment in resource-limited areas of the world.

In this audience-interactive session, delegates voted on treatment options for a range of clinical scenarios through touch pad technology. They heard the case for starting antiretroviral therapy (ART) earlier, based on data in both developed and developing countries. Dr. Mauro Schechter (Brazil) said that a higher CD4 count at the initiation of ART is associated with decreased risk of death from non-AIDS defining malignancies and liver-related causes as well as protection from cardiovascular events. There also is a demonstrable cost saving associated with an earlier initiation, according to Schechter. Nevertheless, the audience was divided on whether to pursue a randomized control trial in order to answer this question.

Dr. Alexandra Calmy (Switzerland) reported that initiating ART at CD4 counts between 200 and 350 may be of even greater benefit in developing countries, because of the added effect on the impact of both TB incidence and HIV transmission. Dr. Mike Saag (US), who outlined the range of possible treatment combinations after first-line failure, said that there are many new drugs in the pipeline and there is significant hope for the future.

A webcast of this session, as well as a second session on the same topic held later in the day, which was chaired by Dr. Anthony Fauci (US), are available through the Programme-at-a-Glance on the conference website.

## Young Investigator Prizes

Four young researchers will receive awards at this morning's plenary session. The IAS awards a Young Investigator Award to a researcher no older than 35 years of age with the highest-scoring abstract in each of the conference's three scientific tracks.

"Among the thousands of excellent abstracts we received for IAS 2007, the research of the Young Investigator Award winners really stands out," said IAS President Dr. Pedro Cahn.

The 2007 Young Investigator Award winners are Miranda Smith, Australia (Track A: HIV Basic Science); Marcello Pinti, Italy (Track B: Clinical Research, Treatment and Care); and Viviane D. Lima, Canada, and Biswajyoti Borkakoty, India (Track C: Biomedical HIV Prevention).

## Further Evidence for Needle Exchange Programmes, Substitution Therapy

Researchers specializing in the intersection of injecting drug use and HIV yesterday discussed a broad range of topics, including needle exchange programmes (NEPs), opioid substitution therapy (OST), and trends in risk-taking behaviour (Session MOAC2). As the evidence in favour of NEPs continues to grow, policy lags behind in a significant portion of the world.

Carolyn Day and Thomas Kerr presented data from needle and syringe programmes in Australia and Vancouver, respectively. Data from Australia show a 10 percent decrease in HIV prevalence among injecting drug users (IDUs) between 1987 and 1994, with the first needle-syringe programme introduced in Australia in 1986. Although the Australian drug market's coincident shift in preference from heroin to methamphetamine had the potential to serve as a confounding factor in the study, the implications of this shift are unclear.

In Vancouver, prior studies showed that lack of access to clean needles was the leading determinant for high-risk needle sharing. As a result, NEP policy evolved in Vancouver to decentralize and expand NEPs, with a greater focus on distribution of needles, rather than exchange. The Vancouver study found a decrease in syringe borrowing and lending. Both studies contribute to a growing body of evidence favouring the incorporation of NEPs into the health policy of countries reporting HIV infection among IDUs.

The Ukraine provided a unique demographic for a study led by Sergii Dvoriak, as IDUs account for an estimated 70 percent of HIV cases in this country. The aim of the study was to confirm the effectiveness of OST with buprenorphine in HIV prevention. The study showed decreases in drug use, addiction severity and criminal involvement. In particular, it showed a decrease in injecting behaviour as a result of OST. Dvoriak's study confirms the relevance of the WHO/UNAIDS/UNODC 2004 joint mission on OST in the Ukraine, an effort to increase access to OST for IDUs.

## ANNOUNCEMENTS

### Sign the Sydney Declaration

Good research drives good policy and programming. Visit the conference website at [www.ias2007.org](http://www.ias2007.org) to sign the Sydney Declaration. Join the 1,500 signatories (as of Monday afternoon) who are urging governments and donors to allocate 10 percent of all resources dedicated to HIV programming for research.

### Rapporteur Reports Available Online

Let the IAS 2007 rapporteurs assist you in covering all the important information presented at the conference. Rapporteurs will publish individual session reports and summaries each day, which will be published on the conference website. In addition, a summary session, held immediately before the Closing Session on Wednesday, will synthesize the week's reports.

### The Shack and Dialogues: TB Photo Exhibition

*Networking Area, Bayside Terrace, Level 2*

This exhibition deals with people and families affected by TB, and the lifestyle and living conditions that influence the disease. Open through Wednesday.

### More Online Coverage of IAS 2007

Additional news coverage from the conference is available on the conference website at [www.ias2007.org](http://www.ias2007.org).

## TUESDAY HIGHLIGHTS

### Clinical Trials of ART

*11:00, Bayside Auditorium B*

This abstract session will focus on one of the most important developments in HIV over the past year, the emergence of exciting new treatment options.

### Female-Initiated Prevention Technology

*11:00, Bayside Auditorium A*

Six oral abstract presentations will cover a range of research, including diaphragm and gel use; citric douching; an examination of male partner involvement; and issues concerning a topical microbicide administered to males.

### Special Session: The Future of Global HIV Financing

*13:00, Bayside Auditorium B*

Panelists will each discuss challenges facing global HIV financing, followed by a panel discussion and a Q&A session. Panelists include Dr. Michel Kazatchkine, Global Fund; Dr. Debrework Zewdie, World Bank; Dr. Paul Bekkers, HIV/AIDS Ambassador for The Netherlands; and Dr. Judy Auerbach, San Francisco AIDS Foundation.

### HIV Testing: Access, Uptake and Human Rights

*14:30, Bayside Auditorium A*

This symposium addresses policy, human rights and implementation challenges of provider-initiated HIV testing and counselling and includes a presentation on WHO's new HIV testing guidelines by Dr. Kevin de Cock, Director, WHO Department of HIV/AIDS.

### Prevention of Mother-to-Child Transmission

*14:30, Parkside Auditorium*

This session features abstract presentations related to the effectiveness of antiretroviral therapy, breastfeeding and maternal and foetal safety.

### HIV/TB: An Evolving Epidemic

*16:30, Bayside Auditorium B*

Leading international HIV/TB experts will discuss new diagnostics and treatment strategies, as well as research needs.

## Programme Updates: Tuesday 24 July

Session: **TUAA1** – 11:00-12:30

Abstract **TUAA105** will not be presented.

Abstract **WEPEA028, Interaction between HIV-1 and host cell microRNA**, will be presented by **Kuan-The Jeang**, US, at **12:00**.

Session: **TUSS1** – 13:00-14:00

**Paul Bekkers**, HIV/AIDS Ambassador, The Netherlands, will participate in this session.

Session: **TUBS2** – 16:30-18:00

**Hoosen Coovadia**, South Africa, replaces Jeffrey T. Safrit as a co-chair of this session.

Poster Exhibitions

**TUPEB024**, **TUPEB120** and **TUPDB09** have been withdrawn.